



United Nations
Climate Change

Compilation of adaptation priorities identified in the National Adaptation Plans

VERSION OF NOVEMBER 2022

LEG – Least Developed Countries Expert Group

UNFCCC

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Preface

1. Introduction

To facilitate communication of the contents of NAPs on adaptation priorities and priority adaptation projects, programmes and policies identified by countries, the LEG is producing this compilation to serve as a tool for publicizing their priorities. It is targeted at those in a position to support the LDCs either further develop these into proposals for submission to a funding target, or to those able to offer funding to the implement these projects.

These compilations will remain living documents and will be updated as more NAPs are submitted.

2. Sections

As of 20th October 2022, 39 NAPs have been published on [NAP Central](#). This document presents a compilation of sectoral adaptation priorities as identified in the submitted NAPs*, reflecting the unique presentation of each country, with some standardization as far as possible without paraphrasing the individual entries.

*Paraguay updated its NAP, making it the first country to have two NAPs on NAP Central. This compilation has summarized the adaptation priorities of its first NAP only.

3. Contact

For further information and to connect with each country team, contact the National Focal Points directly, or through the LEG at LEGHelp@unfccc.int

The work on NAPs under the UNFCCC and Paris Agreement is supported through the Response Subdivision of the Adaptation Division at the UNFCCC. For more information please visit [NAP Central](#) or send an email to napcentral@unfccc.int

ALBANIA

ADAPTATION PRIORITY PROJECTS :

PROJECT TITLE	CLIMATE RESILIENT IRRIGATION, DRAINAGE AND FLOOD PROTECTION
SECTOR	Agriculture
CONTEXT	During the past 50 years (1951-2001), it is recorded a temperature rise of approximately 0.3° C across the country. As a result of climate change more frequent extreme weather events are expected, such as high temperatures, prolonged droughts, floods, increasing landslides and fire risk. These climate changes will strongly impact rural productivity and income. In Albania field crops and fruit production have a bigger importance in the agriculture sector compared to livestock. Since the climate changes will impact mainly the crops, it is needed to have a clear understanding on the amount of water needed by the plants. So water balance (the amount of water available and the amount of water required for the plant) should be calculated in order to come up with ideas and proposals on climate change adaptation.
OBJECTIVES	<ul style="list-style-type: none"> - Calculation of the water needs and supply potentials for crops is improved with consideration of impacts from climate change. - Improved infrastructure and its maintenance cope with changes in precipitation patterns and sediment regimes caused by climate change (drainage, dam safety and floods)
ACTIVITIES	<p>Calculation of plant water needs based on a new methodology (update of the existing formulas or implementation of new ones). Development of a plan for reduction of the erosion by plants. Feasibility study on existing water resources, 626 irrigation reservoirs to be checked on the available amount of water that can be collected in them, the status of the irrigation dams, and also the future destination of the dams. Strengthening of the structures and capacity building of IGJEUM for building up a NAP Albania hydrological data exchange system. Reorganization of the flood monitoring structures Creation of structures for technical check-up of the flood protection infrastructures Strengthening of dam safety monitoring structures. Flood protection maps in cases of dam break Development of a training and certification system for the employees working in the irrigation and drainage sector Rehabilitation and increase of safety for 210 dams following the 2009 WB study Creation of a training and certification system for the employees working in the erosion sector Strengthening of the structures on the interventions and intakes on the riverbeds Studies and implementation projects for building up flood protection structures</p>

	<p>Calculation of the water needs and supply potentials for crops is improved with consideration of impacts from climate change. Improved infrastructure and its maintenance cope with changes in precipitation patterns and sediment regimes caused by climate change (drainage, dam safety and floods)</p>
INDICATORS	<p>Calculation of plant water needs based on a new methodology (update of the existing formulas or implementation of new ones). Development of a plan for reduction of the erosion by plants. Feasibility study on existing water resources, 626 irrigation reservoirs to be checked on the available amount of water that can be collected in them, the status of the irrigation dams, and also the future destination of the dams. Strengthening of the structures and capacity building of IGJEU for building up a NAP Albania hydrological data exchange system. Reorganization of the flood monitoring structures Creation of structures for technical check-up of the flood protection infrastructures Strengthening of dam safety monitoring structures. Flood protection maps in cases of dam break Development of a training and certification system for the employees working in the irrigation and drainage sector Rehabilitation and increase of safety for 210 dams following the 2009 WB study Creation of a training and certification system for the employees working in the erosion sector Strengthening of the structures on the interventions and intakes on the riverbeds Studies and implementation projects for building up flood protection structures Calculation of the water needs and supply potentials for crops is improved with consideration of impacts from climate change. Improved infrastructure and its maintenance cope with changes in precipitation patterns and sediment regimes caused by climate change (drainage, dam safety and floods)</p>
IMPLEMENTERS	<p>The leading role belongs to MARDA and its drainage boards directories all over the country, National food authority. The other actors that will be involved are: Local Government units /municipalities which are responsible for the prevention of the floods in their territory and also for the measures that should be taken in case of floods. The companies that use and consume water which are responsible for the maintenance and cleaning of the drainage channels in the territory where this water company operates.</p>
TIMELINE	<p>n/a</p>
COSTS & SOURCE OF FINANCE	<p>Domestic (national) funds mainly for the soft measures and human capacity development. Donor support required in the field of investments.</p>

PROJECT TITLE	INTEGRATED WATER RESOURCES MANAGEMENT
SECTOR	Water resources
CONTEXT	<p>The Integrated Water Resources Management (IWRM) Strategy has been developed for the period 2017 - 2027 to promote the coordinated development and management of water, land and related resources, in order to maximize the resultant economic and social welfare in an equitable manner without compromising the sustainability of vital ecosystems. Climate change impacts were reflected in the Strategy to enhance resilience of water resources against climate change. As such, the Strategy does not develop detailed action plans for the different Water Sectors, but will include an overall action plan and will serve as an overall policy framework setting conditions for Water Sector wide related strategies. Following on the Strategy, River Basin Management Plans (RBMP) will specify measures for concrete watersheds. First two pilots have been launched for Drini-Buna and Semani river basins. These plans will consider climate change impacts, especially regarding drought and flood risks. Regarding the latter, they will take advantage of the GIZ supported 'Climate Change Adaptation in Western Balkans Program'. The planning will be based on a systematic modelling and result in proposals for interventions and measures. The projects on IWRM and RBMP development are supported by World Bank and SIDA. The project teams include specialists for climate change. Despite the above-mentioned river basin management plans there are planned to prepare also the other 4 (RBMP) for the rest of the basins. Two of them (Vjosa and Mati) have started and are partially developed and the Shkumbini it is on its early start (now is under preparation the Management plan of the protected areas as part of IBECA project. The other basin will start as soon as the IPA funding will be available. All the RBMP will be following the EU standards including climate change chapter.</p>
OBJECTIVES	<p>Adaptation measures are adequately reflected in the implementation plan and process for the two RBMPs (Drini, Buna and Seman) and a third one (Vjosa RBMP) which has just started and is yet in the preliminary phase.</p> <p>Other four river basin management plans are already on the project ministry pipeline to be designed and on each of them climate change will be reflected adequately.</p>
ACTIVITIES	<p>Throughout 2017): Climate change experts (e.g. involved in the 'Climate Change Adaptation in Western Balkans Program') will be involved in the consultation process to take advantage of previous experiences in adaptation processes in Albania and to give more guidance on preparing RBMP related to the climate change aspect.</p> <p>Action 2 (end 2017): The list of proposed measures will be assessed under climate change aspect (e.g. or a climate sensitive Strategic Environmental Assessment) and a possible DCM (yet to be decided)</p> <p>Action 3 (2017): The implementation process for the RBMPs will be designed in a way that climate change is adequately reflected during implementation.</p> <p>Action 4 (Approximately 2020): The other 4 River Basin management plans will start the designing phase and the climate change will be reflected in the designing and implementing phases.</p>

INDICATORS	<p>Indicator 1: At least some adaptation related specific measures are included in the implementation plan for each RBMPs as following:</p> <ul style="list-style-type: none"> - Proper spatial planning - Flood risk and draught risk maps - Population awareness for specific areas as given in hazard maps - Agricultural adaptation - Flood risk and draught risk management plans <p>Indicator 2: The implementation process for the RBMPs is designed in a way that climate change adaptation is adequately reflected.</p> <p>Indicator 3: The river basin management plans are following the EU water framework, EU flood directive standards and do reflect the climate change adaptation properly.</p> <p>Indicator 4: The river basin management plans are prepared and they do include also adaptation measures to climate change.</p> <p>Indicator 5: Climate change will be reflected adequately also in the implementing phase of the RBMP.</p> <p>Indicator 6: Institutional strengthening and capacity building towards river basin management plan is achieved. / Indicator 7: Climate change is reflected and/or is part of the Strategical Environmental Assessment for each of the river basins</p> <p>Indicator 8: Transboundary effect of the climate change has been taken into account</p> <p>Indicator 9: Climate change is considered also from the Transboundary commissions for the related basins.B24</p>
IMPLEMENTERS	<p>The IWRM Strategy and the RBMPs will be steered by the National Water Council and accompanied by an Integrated Policy Management Group.</p> <p>Involved partners: Ministry of Interior, Ministry of Tourism and Environment, Ministry of energy, municipalities and local government units.</p>
TIMELINE	2017-2020
COSTS & SOURCE OF FINANCE	<p>The project on Strategy development is being implemented by MARDA and is being financed from EBRD1 loan and also grants from SIDA. As for the River Basins Management Plans (two of them) the amount is 174.5 million LEK. The resources to be used for other RBMP will be coming from donors and in the amount of approximately around 217.5million LEK +-20% for one RBMP (depending on the basin and its characteristics).</p>
PROJECT TITLE	ADAPTATION IN THE AGRICULTURAL SECTOR: 1. FARM PROTECTION; 2. CROP YIELD MANAGEMENT; 3. INFORMATION SYSTEMS; 4. LIVESTOCK MANAGEMENT

SECTOR	Agriculture
CONTEXT	<p>Climate change effects are being felt every day and more in all the sectors and especially in agriculture which is one of the most important sectors on the country' economy. The main economic contribution for Albania comes through Agriculture so the rural part of the country plays an important role on this process. If no adaptation measures are adopted the seasonal changes will clearly affect the crops and livestock. Decreased and more variable precipitation as well as higher temperatures and increase of the frequency of the extreme events will lead to reduced, less certain and lower quality crops, crop failures and in particular areas soil erosion. Grapes and olives, which are rain fed crops in Albania, have a high potential for yield declines. Pasture, wheat, and irrigated alfalfa have a high potential for yield increases due to beneficial effects of higher temperatures and a longer growing season. Tomato yields outside of greenhouses with climate controls may fall modestly. There is potential for more substantial effects on vegetable and fruit crops, such as watermelons, which could suffer from heat and drought stress, particularly during critical periods of their growth. By 2040, losses of around 35 % are expected for chicken and cattle production due to extreme high temperatures. For this reason, it is important to build up the standardized animal housing premises, to monitor and control spread of existing vector-borne diseases and macro-parasites, maintain and repair irrigation infrastructure etc.</p>
OBJECTIVES	<p>Successfully protective infrastructure within their production systems with an overall cost of 800 million LEK. Farmers apply more resilient techniques for crop yield management. Access to the weather and water related data and information is improved. Adaptation for livestock is enhanced by using advanced technologies with an overall cost of 4 billion.</p>
ACTIVITIES	<p>Action 1: Building up Hail protection systems (cloud seeding, nets) Installing plant protection belts where needed (geographically oriented) Moving crops to greenhouses Creating vegetative barriers, snow fences, windbreaks, forest belts Apply smoke curtains to address late spring and early fall frosts Changing cultivation techniques Action 2: Conservation tillage, crop diversification and crop rotation</p> <ul style="list-style-type: none"> - Switching to crop varieties/hybrids which are heat and drought tolerant - Optimize timing of operations (planting, inputs, irrigation, harvest) - Regionalization of crops reflecting impacts from climate change. - Rehabilitation and modernization of irrigation infrastructure. - Ensuring drainage, with priority to the western plains, through sustainable management of drainage and flood protection systems; rehabilitation and improvement of existing infrastructure

	<ul style="list-style-type: none"> - Provision of insurances for farmers in case of catastrophic events. - Strengthening the capacities in the research institutes in regard to climate change adaptation. - Strengthening the human capacities of extension services and farmers through trainings and workshops <p>Action 3: Better information on pest control</p> <ul style="list-style-type: none"> - Provide access to the information on weather events, the data from early warning systems, monitoring data etc) - Provide access to the information about available water resources. <p>Action 4: Financial Support to the breeding of resilient livestock breeds</p> <ul style="list-style-type: none"> - Monitor and control spread of existing vector-borne diseases and macro-parasites, accompanied by circulation of new diseases. - Maintain and repair irrigation infrastructure, to insure available water at critical times of the growing season, especially for maize and other forage crops to maintain available feedstuff. - Support building up standardized animal housing premises, to insure protection of livestock. - Improve the research and also livestock management, nutrition, and health under a changing climate - Adjusting livestock holdings in response to climate stress. Transition to more heat tolerant livestock breeds. - Strengthening the human capacities on adapting to climate change for farmers through trainings and workshops.
INDICATORS	<ul style="list-style-type: none"> - Number of farms financially supported on establishing protection infrastructure (building greenhouses, tunnels, hail protection systems). - Number of the crop techniques implemented. - Human and institutional capacities developed for farmers and agricultural institutions. - A system for access to hydro metrological data and available water resources is established. - Human and institutional capacities are enhanced on best practices for adaptation and pest control 15 million LEK. - Number of the adaptive measures for feedstuff security implemented.
IMPLEMENTERS	MARDA; Regional Directory of Agriculture (extension service, veterinary service); Centre of Transferring agricultural technologies (ATTC Fushë-Krujë and Korça); National Food Authority Local Government units; Farmers
TIMELINE	2017-2020
COSTS & SOURCE OF FINANCE	<p>The budget of the complex programme of activities still has to be calculated. The following sources of financing are envisaged:</p> <p>Action no. 1: National Budget 100 million LEK and 700 million LEK of international budgeting</p> <p>Action no. 2: National Budget 45 million LEK and 65million LEK International Funding (e.g. IPA funds)</p> <p>Action no.3: National Budget 15 million LEK only for the indicator 3.2</p> <p>Action no.4: National Budget of 1.8 billion LEK and International Funding of 2.2 billion LEK</p>

PROJECT TITLE	PROMOTE IMPLEMENTATION OF ADAPTATION STRATEGY FOR HEALTH SECTOR
SECTOR	Health
CONTEXT	Climate change effects are being felt every day and more in Albania with a rise of the temperatures and change of the intensity and the amount of the rainfall. As a result, air quality related health problems (respiratory diseases) might be aggravated in the main cities of Albania and in particular in the capital of Albania. Also some heat related cardio vascular diseases and respiratory deaths can come as a result of the increase of the heat waves. As a result of extreme rain events there are possible water related diseases, accidents and injuries. Climate change effects on health may have an impact on inequities in Albania so there is a need to adapt and improve the existing capacities in the health sector to face the climate change challenges and its impact on health. The impacts from climate change on the health sector as well as potentials adaptation measures were systematically analysed by the 'Albanian Strategy for the Health System Adaptation to Climate Change' of October 2011, which was actually the first comprehensive sectorial adaptation strategy in the country. It includes in an Action Plan including timelines and responsibilities. However, practical implementation is lacking behind and will be supported through this Priority Action.
OBJECTIVES	Implementation for selected health measures of relevance to climate change impacts is enhance with special focus on vector control, public health measures and preparedness for extreme events (heat waves)
ACTIVITIES	<ul style="list-style-type: none"> - Include health related impacts from climate change into awareness campaigns. - Provide training sessions to selected health professionals. - Inform communities timely and systematically about possible heat waves. - Adapt health sector policies for health facility construction. - Support with training and information Directories of Public Health and Municipalities. - Adapt the existing surveillance systems on vector borne diseases. - Strengthen capacities at Institute of Public Health for entomological laboratory and entomological research. - Continuously assure the quality of the new surveillance and the feed-back reports related to it. - Support Food Authority with training for food safety laboratories and risk assessment. - Support Municipalities and Local Directories of Public health on sanitation continuously.
INDICATORS	<ul style="list-style-type: none"> - Climate related campaigns include health related climate impacts. - Preparedness for extreme climate events is enhanced through early warning systems and primary health care facilities. - Surveillance and prevention measures against communicable diseases caused by climate change are improved.
IMPLEMENTERS	Institute of Public Health (IPH); Ministry of Education and Science; Faculty of Medicine; IGEWE; Environmental Agency; Institute of food safety and veterinary research (ISUV); Food Authority (FA); Directories of Public Health

TIMELINE	2012-2021
COSTS & SOURCE OF FINANCE	The budget for the selected activities under this Priority Action are calculated in total 145 million LEK and from the government will be coming 73 million LEK.

PROJECT TITLE	INTEGRATED CROSS-SECTORIAL PLAN FOR THE COAST (ICPC)
SECTOR	Coastal zones
CONTEXT	An adaptation action plan for the coastal area, taking into account ICZM approach, is prepared in the frame of Third National Communication (TNC). The Integrated Cross Sectorial Coastal Plan drafted by the Ministry responsible of Urban Development and the National Territorial Planning Agency was approved by the Territorial Council on June 2016, is designed to take into account policies and directives of the European regional conventions for the integrated management of Mediterranean coastal areas, and focusing specifically on their definitions and references for the Albanian coastal region. The process for drafting Local Plans 31 municipalities divided into lots, are advanced to the third phase. Cities within the third stage also the following municipalities which situated within the Coastal Line: Durrës, Vlorë, Kavajë, Rrogozhinë, Divjakë, Vlorë, Himarë, Konispol, Sarandë, Shkodër, Lezhë.
OBJECTIVES	Promote the right enabling environment for mainstreaming adaptation in national and local planning in coastal areas.
ACTIVITIES	<ul style="list-style-type: none"> - Introducing and adapting the EU instruments and policies relevant to coastal areas ecosystems and biodiversity. - Enforcement of legislation related to the constructions in the coastal area. - Human capacity development activities in coastal municipalities on interface of coastal development and climate change adaptation. - Policy level measures on buildings. - Launch concrete pilot projects with relevance to adaptation. - Continue with pilot projects to reduce flooding/drought risk at settlements due to consequences of extreme trends.
INDICATORS	Local plans are designed in harmonization with national priorities/objectives and ICZM directive within the limits that existing human capacities allows
IMPLEMENTERS	Ministry responsible of Urban Development/NTPA; Municipalities; Universities; NGOs
TIMELINE	4 years

COSTS & SOURCE OF FINANCE	<p>148.5 million LEK</p> <ul style="list-style-type: none"> - Year one 15 million LEK - Year two 50 million LEK - Year three 80 million LEK. - Follow-up budget for year 4 still to be estimated. <p>Budget through International Donors, IPA funds, potential State budgeted funding through Regional Development Fund</p>
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PROJECT TITLE	INITIATIVE FOR MUNICIPAL CLIMATE CHANGE ADAPTATION PLANS
SECTOR	Urban areas
CONTEXT	<p>Albanian municipalities are affected by various impacts from climate change such as floods, degrading of infrastructure, impacts on water and energy supply etc. While there are sector related studies and first approaches on sectors such as water, energy and flood risk management, there are no integrated measures for municipalities yet. In particular, there are no incentives and frameworks for developing local adaptation plans yet. However, the regulatory document for the Coastal Plan states explicitly those local municipalities along the Coastal Line should prepare some Coastal Adaptation Plans. With support by GIZ, a Vulnerability Assessment and Adaptation Action Plan for Tirana was published in May 2015 as a first pilot of a municipal climate resilient action. The process for drafting Local Plans 31 municipalities divided into lots, are advanced to the third phase. The Plans are in the consultation process. Coastal climate change adaptation plans would be a complimentary tool for the plans itself. there is a need to have a better coordination with spatial planning in order to make the coastal municipalities more resilient towards climate change. Introducing the Instrument of Climate Change Adaptation Plan for Municipalities vulnerable to Climate Change Risks, could be additional instruments to the Local Plans and would have a positive impact upon implementation.</p>
OBJECTIVES	Municipalities are capacitated for local climate change adaptation measures
ACTIVITIES	<p>Action 1 (2018): Provide Climate Change Adaptation Plans for each municipality that is vulnerable to climate change effect. These plans will facilitate the municipalities with simple knowhow on how to integrate climate change adaptation concepts into the city planning and territorial development. The information given in the plans should use the know-how and lessons learned from the EU climate adaptation platform.</p> <p>Action 2 (2019): Capacity development activities, trainings, advisory services.</p> <p>Action 3 (2020) Pilot actions for local adaptation measures.</p>

INDICATORS	Indicator 1: A Guide on integrating Climate Change Adaptation into the city planning is available for municipalities. Indicator 2: Human and institutional capacities of Municipalities are developed. Indicator 3: At least 10 pilot actions aiming at climate resilience of the city are initiated.
IMPLEMENTERS	Ministry responsible of Urban Development/NTPA; Local Municipalities
TIMELINE	2 years
COSTS & SOURCE OF FINANCE	Action 1: 27 million LEK Action 2: 40.5 million LEK. Potentially part of this will be carried by Regional Development Fund. Action 3: 135 million LEK Local pilot projects (Potential State Budget support by Regional Development Fund) and other donors.

PROJECT TITLE	ADAPTATION IN TOURISM
SECTOR	Tourism
CONTEXT	The coastal area represents considerable potential for tourist activities due to its favorable geographic position (long beaches, Mediterranean climate, water resources, landscape). The tourism sector has grown considerably since 1990. Albania has become a popular tourist destination as a result of some unique environmental features (coastal lagoons, cultural heritage, landscape, etc.). The expected impact of climate change on agriculture will itself have an indirect impact on other sectors of the economy in the area. Tourism as the main consumption sector will most probably be highly affected. Since most of the food for tourist facilities comes from the local regions and is based on organic farming, a change in the structure of crops and their yield will affect the tourism industry. Similar matrix effects from other sectors is expecting as well. Although the development of tourism has represented a huge economic opportunity to the coastal area, it is based on a fragile resource base and is very vulnerable to change, for instance, demand on energy supplies, freshwater and waste treatment, energy efficiency in building structures, etc. Up to the 2050 summer weather conditions for tourism are expected to change from an 'ideal' to an 'excellent' rating and the tourism season will extend in duration. The tourist comfort index (TCI) reveals the value 'good' in October, 'excellent' in May, June and September and 'ideal' in July and August.
OBJECTIVES	Integrated Tourism Sector Objectives and Plans reflecting climate change impacts are being developed.

ACTIVITIES	<ul style="list-style-type: none"> - Provide the necessary legal basis, general or sectoral strategies, action plans etc. which will include the appropriate policies and measures (year 1) - Prepare a sectorial strategy taking in consideration climate issues (year 2 & 3) - Support local and national sectors dealing with climate change (year 3). - Improvements in water allocation laws and regulations - Introduce the water charging or tradable permit schemes - Market development via improving the proper logistic - Cooperate with other sectors for synergies in agriculture sector - Improve and increase the role of agriculture extension service
INDICATORS	Establishment of a Climate Change Technical Working Group, under the auspices of the Inter-ministerial Working Group for CC, with mandate up to the approval of integrated tourism plans
IMPLEMENTERS	Ministry of Tourism and Environment; Ministry of Infrastructure; Ministry of Agriculture and Water Administration; Ministry responsible of Urban Development/NATP; Universities; NGOs
TIMELINE	3 years
COSTS & SOURCE OF FINANCE	81.2 million LEK o Year one 18.75 million LEK o Year two 37.5 million LEK o Year three 25 million LEK

PROJECT TITLE	UPGRADING CIVIL DEFENCE PREPAREDNESS AND DISASTER RISK REDUCTION
SECTOR	DRR
CONTEXT	In Albania, the rivers pose the highest flood risk in the country. The floods are generally of pluvial origin and occur during November – March, when the country receives about 80-85 % of annual precipitations. Due to topographic patterns, the floods occur suddenly, being transported through the main river hydrographical network for about 8-10 hours. The largest floods occur in the low-lying areas west of the country, where the rivers pour out to the sea, but small rivers and torrents cause flooding too. With the existing data reported by Albanian Government, flooding has affected 130,000 hectares of agricultural land. Flooding is exacerbated by sedimentation in rivers and drainage channels. According to the Disaster Inventory System (DesInventar), which has an inventory of

almost 4000 events from 1851 – 2013 in Albania, more than 95% of the communes have been affected by at least one flood event. Albania experienced major floods in 1962-63, 1970-71, 2003, 2005, 2009, 2010, 2013, February 2015 and most recently in early January 2016. Floods and flash floods account for 20% of the total events. The Districts with more floods and flash floods are Shkoder (160 events) and Lezhë (117 events) situated in the Northwest Albania. Floods' and flash floods' biggest impact has been in the agricultural sector, damaging on average 7,000 hectares of land each year. The average hectares damaged per event is around 300 ha with a maximum of 20,000 ha for a single commune in a single event. Climate change is a further compounding factor, as Albania's rain and snow fall occurrence has one of the highest levels of variability in Europe. Climate change could potentially increase the frequency and magnitude of flooding. Rainfall events in all scenarios are likely to be larger and less frequent. Additionally, increasing sea level rise and storm surges are expected to increase flooding in coastal areas. The incidence of flood-related hazard is high in Albania (one event in every six years). Economic loss due to floods during the last 33 years is estimated at 125 billion ALL. World Bank projections for Albania put the exposure to a one-hundred-year flood at 6% for GDP and 7% for the population. Flood Forecasting can reduce loss of life and damage of property through provision of warning. Hydro-meteorological observations are essential for detection & forecasting, hence increase of response lead-time. According to the World Meteorological Organization (WMO), the average cost-benefit ratio for investments in the development and strengthening of hydro meteorological services in terms of reduced economic losses for Albania is about 1:7. In terms of a proper Flood Management Cycle according to the EU Flood Directive 2007/60/EC, prevention (encompassing nature oriented retention measures, building protection, technical flood protection) is one of the main part of the cycle. However, also preparedness and emergency response (information, preparedness for individual reaction and compensation, emergency response and flood control) are important elements in addition to regeneration (financial support and reconstruction). This Priority Action focusses on the part of preparedness and emergency response, which includes also dissemination of information so that proper reaction is triggered. In Albania, the Institute of Geosciences, Energy, Water and Environment (IGEWE) is identified as the National monitoring and warning structure for natural hazards, including floods, wildfires and earthquakes. The national hydro and meteorological network owned by IGEWE is upgraded during the last 4 years, partly with support by the GIZ Climate Change Adaptation in Western Balkans project, but there is still a lot needed. In addition hydrological and meteorological models are needed for a proper early warning. Early warning will be the basis for follow up.

OBJECTIVES	The goals of this PA are designed two folds. The immediate one for which the funding is secured under IPA 2013 instrument and the mid-term one which is based on the IGEWE strategy. The rationale behind this PA is to increase floods resilience with better early warning systems and disaster prevention mechanisms in Albania. The specific objective is to increase the capacity of the Albanian General Directorate for Civil Emergencies to prevent and respond to disaster management by end of 2018. An additional objective is to increase the capacities of IGEWE so that quality and standardized information and dissemination in terms of flood and drought early warning is provided to MoIA by end of 2020.
ACTIVITIES	1. Support to develop a regional flood hazard map following EU Flood Directive.

	<p>2. Preparation of a Floods Early Warning System and improving communication and data exchange with European Flood Awareness System (EFAS), by end of 2019.</p> <p>3. Cost-Benefit Analysis, prioritization and financing of measures in strengthening flood warning systems by end of 2019.</p> <p>4. Awareness/Visibility/Communication: improve flood awareness of the public by informing on the risk, early warning systems and the plan to follow in case of an emergency by end of 2019.</p> <p>5. Support Albania in preparing for membership to the Union Civil Protection Mechanism (EUCPM) by end of 2019.</p> <p>6. Strengthening of IGEWE capacities with regard to qualitative and sustained services provision by end of 2020.</p> <p>7. Strengthening IGEWE in terms of human resources and capacity development</p>
INDICATORS	n/a
IMPLEMENTERS	MEFA; IGEWE
TIMELINE	n/a
COSTS & SOURCE OF FINANCE	<p>Some of the activities listed above will be financed by EUD through IPA 2013 instrument</p> <ul style="list-style-type: none"> • 337.5 million LEK for 2 years (covering activities 1-5) • 594 million LEK (covering activity 6. Project fiche to be prepared for WBIF) • 270 million LEK for a period of 5 years (figure based on the strategy of IGEWE development) • Funding options: bilateral ODA, WB, GCF

PROJECT TITLE	BUILDING THE RESILIENCE OF KVLS THROUGH EBA ADAPTATION
SECTOR	Ecosystem services
CONTEXT	<p>The Kune-Vaini lagoon system (KVLS), located within the Drini-Mati River Delta in the Lezha region of Albania, provides a wide range of valuable goods and services to nearby communities. These local communities derive the majority of their incomes from fishing or agriculture and therefore depend on functional, intact ecosystems in the lagoon system for their livelihoods. A rapid increase in population size and widespread poverty in the area have led to an increase in pressure on the lagoon for ecosystem goods and services, and to unplanned alterations in the buffer zone surrounding the lagoon. This is resulting in the over-exploitation of these important natural resources. Unsustainable resource use within the KVLS is also causing: i) a reduction inequality and quantity of</p>

water in the KVLS affecting lagoon productivity; ii) increased coastal flooding; and iii) increased sand dune erosion. Climate change effect will be felt also in the KVLS respectively with reducing the capacity of this system to provide indispensable ecosystem goods and services to local communities. Climate models have predicted that a reduction in precipitation, which will also lead to an increase of the salinity of the lagoon with detrimental effects on fisheries. Also, the models predict an accelerating rate of sea level rise (up to 61 cm by the year 2100) resulting in increased erosion and the consequent loss of habitat within KVLS.

OBJECTIVES	<ul style="list-style-type: none"> - To increase the capacity of government and local communities living nearby the KVLS to adapt to climate change using an integrated suite of adaptation interventions, including EbA ; - Building climate resilience of the Kune-Vaini lagoon system using demonstration of best practice and concrete EbA and other adaptation interventions ; - Increased awareness of local and national stakeholders to climate change risks and the potential of EbA to increase the resilience of local communities to climate change
ACTIVITIES	n/a
INDICATORS	<ul style="list-style-type: none"> - Trainings conducted for national and local government representatives on EbA; - Technical guidelines produced on implementation of climate change adaptation actions using EbA; - An integrated suite of adaptation interventions including EbA implemented in the Kune Vaini lagoon system; - A strategy for monitoring the EbA interventions is developed; - Awareness-raising campaign conducted on the advantages of EbA to increase resilience to climate change impacts.
IMPLEMENTERS	Ministry of Tourism and Environment; Ministry of Infrastructure; Ministry of Agriculture and Water Administration; Ministry responsible of Urban Development/NATP; Universities; NGOs
TIMELINE	n/a
COSTS & SOURCE OF FINANCE	GEF/UNEP and Ministry of Tourism and Environment Total budget : 242 million Albanian LEK

ARMENIA

The adaptation measures for the six priority sectors are still under development.

BENIN

SECTOR	OBJECTIVE	ACTIVITIES	IMPLEMENTERS	COSTS
Agriculture	Improving and developing the resilience of agricultural production systems and agricultural processing systems to climate change	<ol style="list-style-type: none"> 1. Intensification of research on improved varieties of plants, aquaculture and animal species; 2. Promotion of sustainable land management; 3. Promotion of ecological and organic agriculture 4. Improvement of transhumance governance at national and local levels 5. Promotion of sedentary livestock and fodder production 6. Promotion of post-harvest technologies that respect the environment 7. Promotion of agricultural mechanization adapted to the environment 8. Establishment of fisheries brigades 9. Establishment of biological reserves 10. Facilitation of access to land and agricultural inputs for vulnerable groups 	Gender and Environment Unit, DPV, DE, INRAB, DGR	USD 377 million
Agriculture	Integrated management of agro-sylvo-pastoral resources	<ol style="list-style-type: none"> 1. Development of micro-irrigation 2. Development of lowlands and irrigated perimeters 3. Construction, rehabilitation and protection of water retention structures for agro-pastoral purposes 4. Mobilization and valorization of runoff water for multiple purposes 5. Development of aquaculture facilities and infrastructures resilient to to climate change 6. Development of a drainage system adapted to the flooding of farms 7. Promotion of agroforestry 8. Capitalization and dissemination of local good practices of adaptation to climate change 		

Agriculture	Agricultural risk prevention and management	<ol style="list-style-type: none"> 1. Capacity building of actors and institutions against climate change 2. Establishment of an operational climate early warning system 3. Development of the e-agriculture for the local geo information system 4. Promotion of agricultural climate insurance 5. Integration of climate risk prevention measures in the implementation of agricultural activities 6. Establishment of an efficient system for collecting, processing and disseminating information that promotes/improves resilience to the effects of climate change 7. Taking gender into account in the implementation of adaptation measures 		
Water resources	Development of climate change resilient infrastructure	<ol style="list-style-type: none"> 1. Promotion of techniques and practices for the protection of the quality of water resources 2. Realization/rehabilitation of structuring infrastructures (dams/surface water retention) 3. Promotion of flood and drought resilient drinking water supply and drought-resistant drinking water supply systems 4. Realization of water points meeting the critical conditions of the women in the face of climate change 	Ministry in charge of Water; General-Directorate of EauANAEMR	USD 153 million
Water resources	Mobilization and sustainable management of water resources	<ol style="list-style-type: none"> 1. Reinforcement of measures to fight against the pollution of water resources (surface and underground) 2. Restoration and safeguarding of gallery forests, headwaters and associated ecosystems 3. Storage and reclamation of runoff water for purposes other than drinking water supply 4. Promotion of integrated water resources management 5. Sensitization of vulnerable groups around water infrastructures resilient to climate change 		

Water resources	Improved governance of the sector	<ol style="list-style-type: none"> 1. Strengthening the institutional capacity building 2. Gender mainstreaming in water governance 3. Strengthening and implementation of regulations in favor of the fight against against the occupation of natural water outlets 4. Enforcement of the regulation (principle of user pays, user pays and polluter pays) 		
Water resources	Improving the knowledge of water resources and of management of hydroclimatic risks	<ol style="list-style-type: none"> 1. Strengthening of surveillance systems, monitoring of observation networks (surface water, groundwater and their quality) 2. Strengthening of the water information system (data collection, processing, dissemination, and archiving) 3. Strengthening of the hydro-climatic multi-hazard early warning system (flood and drought) 4. Implementation of a communication plan around resources focused on endogenous practices 		
Health	Development of an integrated system of surveillance, information, response and research on climate-sensitive diseases	<ol style="list-style-type: none"> 1. Integration of climate change into epidemiological risk early warning systems and response plans 2. Development and implementation of a research program on the impacts of climate change and strategies to address prevailing conditions 3. Conducting a study on the differential impacts of climate change on the health of men and women by age and livelihood to livelihoods in order to assess the vulnerability of the health sector to to future climate change 4. Integration of acc aspects in the policies and strategies of the health sector 5. Strengthening information, education and communication systems communication systems related to human health adaptation to climate change 	DRFMT; DPP; AISEM; DAF; ANSSP; ANAM; DNSP	USD 390 million

Health	Reducing the prevalence of climate-sensitive diseases	<ol style="list-style-type: none"> 1. Development of a research program on the impacts of climate change and strategies to combat the dominant diseases dominant conditions 2. Development and implementation of a communication plan for the effective and efficient management of climate-sensitive diseases 3. Promotion of health insurance against climate risks 		
Health	Improved financing mechanisms for climate change health interventions related to climate change	<ol style="list-style-type: none"> 1. Capacity building of health sector actors in project development 2. Rational use of resources related to climate change 3. Development of strategies favorable to the mobilization of financial resources financial resources to take into account the health-environment component, climate change (green climate fund, national fund for the environment and climate environment and climate, global environment fund, adaptation fund, health budget adaptation fund, health budget, etc.) 		
Health	Improved health infrastructure, equipment, health products and other and other services adapted to climate change.	<ol style="list-style-type: none"> 1. Capacity building of human resources for health and climate change 2. Promotion of resilient drinking water supply, hygiene and basic sanitation facilities in health facilities in vulnerable areas 3. Strengthening the access of health facilities to energy services (clean energy) in vulnerable areas 4. Investment in the development of health infrastructures and equipment adapted to climate change in vulnerable areas 4. Promotion of local/indigenous knowledge of adaptation to climate change, taking into account gender and minorities 		

Energy	Promotion of alternative energies to wood energy	<ol style="list-style-type: none"> 1. Promotion of cooking equipment and other alternative energy technologies (gas stoves, improved stoves, ovens, boilers, etc.) 2. Promotion of alternative fuels (charcoal briquettes, biogas, domestic gas, palm kernel shell, etc.) 	General-Directorate for Energy Resources; DGEC; DGEFC	USD 112 million
Energy	Establishment of a permanent forecasting mechanism and early warning system for seasonal rainfall, high winds and anomalous temperature variations	<ol style="list-style-type: none"> 1. Development of a forecasting mechanism for climatic disturbances (high winds, seasonal rains, etc.) 2. Development of early warning systems for seasonal rains, high winds and abnormal temperature variations 		
Energy	Reinforcing the level of safety and resilience of energy facilities energy facilities	<ol style="list-style-type: none"> 1. Adoption and implementation of appropriate norms and standards for energy infrastructure and equipment 2. Development of a plan for the relocation of production sites and transmission and distribution networks 3. Implementation of energy efficiency measures in the use of electrical energy use to reduce peak demand 		
Energy	Training, research and capacity building of actors	<ol style="list-style-type: none"> 1. Development of an academic training program adapted to the energy sector in relation to climate change 2. Capacity building of energy sector actors on mapping of climate risks and management of their potential impacts 3. Development of scientific research on renewable energies and make choices adapted to climate zones 		
Infrastructure and urban management	Strengthening climate change resilience in the infrastructure sector	<ol style="list-style-type: none"> 1. Strengthening the early warning system to take into account the damage of floods on the transport infrastructure sector 2. Rigorous implementation of standards for the construction of climate change resilient infrastructure 3. Strengthening the technical capacity of the construction sector to take into account climate change in the preparation of technical files 4. Development and implementation of policies and strategies that take into account adaptation to climate change in the transport sector 		USD 1 billion

Infrastructure and urban management	Strengthening and implementating of building policies and sanitation strategies in Benin	<ol style="list-style-type: none"> 1. Definition and implementation of resilient building policies and standards; 2. Implementation of remediation strategies; 3. Development and implementation of urban and land use planning documents (urban master plan, urban and land use master plan, subdivision, urban planning regulations, urban planning green book, land tenure code) 	General-Directorate for Infrastructures; General-Directorate for the Environment and the Climate	
Infrastructure and urban management	Strengthening social protection and livelihoods of people vulnerable to the effects of climate change	<ol style="list-style-type: none"> 1. Strengthening safety net systems for people affected by floods, drought, coastal erosion and high winds through the creation of assets 2. Identify climate migrants and other people affected by the effects of climate change and organize their resettlement 		
Infrastructure and urban management	Establishment of an institutional framework for the valorization of the results of scientific research results for the benefit of the adaptation of infrastructures and urban development to climate change	<ol style="list-style-type: none"> 1. Institutionalization of funding for scientific and technical research for climate adaptation to climate change in general and for the sub-sector of infrastructure, urban development and sanitation sub-sector in particular; 2. Valorization of research results in the field of climate change 		
Infrastructure and urban management	Strengthening local adaptation practices	<ol style="list-style-type: none"> 1. Capitalization of traditional ecological knowledge, such as local practices, skills and institutions for climate change adaptation; 2. Identification, standardization, integration, scaling up and incorporation of local practices (location of infrastructure, shape of roofs, preservation of of roofs, safeguarding of sacred forests, planting, etc.). implementation of adaptation actions and programs through participatory processes 3. Popularization and implementation of the law on the coastline 		

Coastal Zone	Development of governance, monitoring and protection measures protection of the coastline	<ol style="list-style-type: none"> 1. Extension and enforcement of the law on the coastline 2. Integration of climate change adaptation into policy/strategy documents 3. Capacity building of actors in climate change adaptation 4. Establishment of a monitoring, management and warning system on evolution of the coastline 5. Promotion of an autonomous institutional framework for monitoring and management of risks related to climate change 6. Strengthening cooperation with other states of the Gulf of Guinea 7. Establishment of a system of observation and continuous monitoring of the Beninese coastline with the participation of local communities 	MCVDD (DGEC-DGDU-ACVDT3); Sectoral ministries and decentralized authorities	USD 757 million
Coastal Zone	Development of effective adaptation measures to climate change	<ol style="list-style-type: none"> 1. Development of research on initiatives related to climate change adaptation in the coastal sector 2. Protection and restoration of mangroves and associated ecosystems with Togo and Nigeria in particular 3. Implementation of the pair of the coastal strip of Benin 4. Promotion of the ecosystem approach to fisheries 5. Development of infrastructure and protection works according to standards of adaptation and resilience to climate change 		
Coastal Zone	Management of risk areas occupancy	<ol style="list-style-type: none"> 1. Education and awareness of riparian communities on the potential threats of climate change 2. Development and implementation of sustainable development plans for areas at risk 3. Promotion of sustainable technologies adapted to climate change climate change 4. Development and implementation of strategies to manage migration and relocation of people affected by the impacts of climate change 		

Tourism	Development of an inclusive program of management and safeguarding of the fauna and flora	<ol style="list-style-type: none"> 1. Intensification of initiatives for the regular rehabilitation of access roads and hunting trails 2. Development and implementation of a strategy for the management of early wildfires in protected areas 3. Intensification of management actions in protected areas, waterways and tourist sites 4. Establishment of technological devices for management and early warnings of protected areas 5. Taking charge of the damages of floods and fires around the protected areas 6. Raising awareness of vulnerable populations around protected areas on climate change 7. Strengthening of the technical and financial capacities of the populations and sectoral actors on how to deal with the negative effects of climate change 8. Promotion of climate change resilient ecotourism initiatives 	Directorate in charge of Tourism development; General-Directorate for the Environment and Climate	USD 747 million
Tourism	Management, restoration and safeguarding of tangible cultural heritage	<ol style="list-style-type: none"> 1. Development and implementation of a program for the protection, sustainable conservation and enhancement of physical heritage elements vulnerable to climate change 		
Tourism	Taking into account the effects of climate change in the development of the Beninese coastline	<ol style="list-style-type: none"> 1. Raising awareness of the local population on climate change 2. Strengthening the technical capacities of institutional actors on early warning systems for their operation 3. Development of resilient technologies for fish trade activities 		
Tourism	Valuation of waterways and water bodies, integrating climate change	<ol style="list-style-type: none"> 1. Elaboration of development programs for lake towns and islands (so-ava, agonve, aguegues, hlan) integrating climate change issues 2. Promotion of the use of boats adapted to the violent winds on the rivers 3. Sensitization of lake populations on climate change 4. Strengthening the technical and financial capacities of 		

		vulnerable actors, riparian of rivers and water bodies, to climate change 5. Promotion of hydraulic infrastructures resilient to climate change on water bodies and rivers		
Tourism	Consideration of climate change in the development of the tourism industry	1. Development of incentives for a responsible and sustainable business tourism 2. Promotion of a chain of actors respectful of the requirements of climate change		
Forestry	Strengthening the resilience of actors (communities, private operators, administrations, civil society organizations, etc.) to the effects of climate change	1. Awareness, communication and capacity building of the actors of the sector on the issue of climate change 2. Design and implementation of a multi-hazard early warning system on droughts, floods and vegetation fires 3. Development of fodder crops and development of water points for the benefit of the breeders who suffer from the effects of climate change 4. Identification and promotion of traditional and local measures for adaptation to climate change 5. Promotion of the valorization of forest products likely to increase the added value of the exploitation of forest resources 6. Support in infrastructure, equipment and working means for the benefit of forestry administration 7. Establishment of multifunctional platforms for the benefit of communities living in forest ecosystems 8. Strengthening the resilience and capacity to adapt to climate change of women associations through the implementation of agro-industry services and sectoral support	General-Directorate of Water, Forests and Hunting	USD 554 million
Forestry	Promotion of sustainable forest management and protected areas	1. Equip (or update) forest ecosystems with participatory management tools that integrate climate change adaptation 2. Strengthening of the systems and mechanisms (human resources, technologies, materials and equipment) for		

		<p>forest monitoring</p> <ol style="list-style-type: none"> 3. Development and implementation of a strategy for the management of uncontrolled vegetation fires 4. Reforestation of the watersheds of the main waterways of the forests under management with species having a high tolerance to drought tolerance 5. Restoration of degraded lands in agroforestry series with multi-purpose species resilient to climate change 6. Enrichment/afforestation of conservation and protection series (riverbanks with indigenous species resilient to climate change) 7. Develop and monitor sites for reintroduction of endemic, rare and threatened species in protected areas 		
Forestry	Promotion of agroforestry and large-scale forest plantations scale	<ol style="list-style-type: none"> 1. Promotion of large-scale state and communal plantations with species resilient to climate change 2. Strengthening research on indigenous species (silviculture) to facilitate their use in reforestation 3. Development of agroforestry based on the promotion of species resilient to climate change, primarily in the northern half of the country more exposed to the advancing sahel 4. Promotion of private reforestation initiatives in order to reduce the pressure on forest formations 5. Support to nurserymen (technical training, inputs, marketing of products,) for the supply of species resilient to climate change 		
Forestry	Improved conservation of biodiversity, forests, indigenous and community heritage areas and other sensitive ecosystems	<ol style="list-style-type: none"> 1. Promotion of research to deepen knowledge on the impacts of climate change on biodiversity 2. Supporting research on species resilient to the effects of climate change 3. Establishment of a seed bank for resilient species 4. Establishment of conservation programs for animal species that play the role of seed disseminators (primates, 		

		<p>bats, bees) bees)</p> <p>5. Development of actions to increase the resilience of wild animal species</p> <p>6. Initiation of assisted natural regeneration of forest species in fragile ecosystems</p> <p>7. Improving the resilience of indigenous and community heritage areas through reforestation with indigenous forest species</p>		
Forestry	Improving forestry governance	<p>1. Improvement and strengthening of information systems (data collection and monitoring-evaluation) on forest resources</p> <p>2. Institutionalization of the periodic execution of the national forest inventory</p> <p>3. Creation and operationalization of meteorological observation stations on fragile ecosystems</p> <p>4. Installation and operation of a multi-stakeholder consultation framework (forestry, energy, meteorology, agriculture, decentralization, infrastructure, national agency of domains and land) for a synergy of interventions in the forestry sector</p> <p>5. Strengthening the institutional and operational capacities of forestry sector actors in accordance with the requirements of taking of climate change</p>		

BRAZIL

SECTOR	OBJECTIVES	ACTIVITIES	INDICATORS	IMPLEMENTERS	COSTS
Agriculture	Develop and deploy an Agricultural Risk and Vulnerability Monitoring and Simulation System	<ol style="list-style-type: none"> 1. Organize information collected from climate and agricultural observation systems; 2. Enhance methods for modelling and estimation of climate risk; 3. Enhance the monitoring of impact on major production systems; 4. Develop the Agricultural Risk and Vulnerability Monitoring and Simulation System, utilizing and optimizing legacy systems; 5. Regional Vulnerability Analysis (development of indices, medium and long-term vulnerability indicators), climate risk maps (local, regional and national), classification of the regions of Brazil in terms of climate risk for the main agricultural activities; propose a vulnerability scale; identify priority areas; 7. Identification of adaptation measures for efficient water use, phytosanitary management, integrated with development of methods and crops, with a view to increasing agricultural resilience in priority areas. 	<p>Number and frequency of analyses undertaken;</p> <p>Number of parameters evaluated;</p> <p>Agricultural Risk and Vulnerability Monitoring and Simulation System deployed;</p> <p>Number of systems and models made available;</p> <p>Percentage of the territory classified by a vulnerability and climate-risk scale</p>	EMBRAPA	n/a

Agriculture	Establish a Centre for Climatic Intelligence for Agriculture, for application of climate risk analysis in Brazilian Agricultural Policy.	<ol style="list-style-type: none"> 1. Establish an inter-institutional working group involving the key players (INMET, EMBRAPA, MAPA, MCTI, MDA, MI, MMA, IPEA, IBGE, INPE, and ANA); 2. Integration of the Agricultural Risk and Vulnerability Monitoring and Simulation System with national monitoring and early-warning networks (CEMADEN and CENAD); 3. Draft a work plan: analyse current and potential scope for generation of information by existing monitoring networks; define technical requirements for the development of platforms and systems to guarantee compatibility with existing platforms; assess current demand for information; define methodologies, design flows and processes, etc; 4. Develop support systems for the inputting of secondary data; 5. Set up a system for spatial and integrated analysis of social, economic, environmental and institutional vulnerabilities; 7. Set up a system for prioritizing vulnerable regions and land-use planning; 8. Create the Climate Intelligence Centre for Agriculture – Communications and Early-Warning Network; 9. Develop Contingency Plans and provide support for Brazilian Agricultural Policy. 	Versions of the Agricultural Risk and Vulnerability Monitoring and Simulation System harmonised with other early-warning and monitoring networks; Climate Intelligence Centre for Agriculture - Communication and Early-Warning Network consolidated; Number of systems and models made available; Percentage of the territory classified by the vulnerability and climate-risk scale.	MAPA	n/a
Biodiversity and Ecosystems	Preparation of Ecosystem-based Adaptation strategy measures in areas at risk of extreme events and other	<ol style="list-style-type: none"> 1. Establish a working group; 2. Identify potential areas for implementation of Ecosystem-based Adaptation (EbA) measures; 3. Prepare a strategy in conjunction with governmental bodies, private sector and civil society. 	Percentage of the strategy drawn up; Criteria for implementation of EbA measures in high-risk areas defined	MMA	n/a

	climate change impacts.				
Biodiversity and Ecosystems	Modelling of the impact of climate change on biodiversity for use in public policies for conservation, recovery and sustainable use of biodiversity.	1. Identify the impact of climate change on biodiversity; 2. Promote incorporation of climate risk into current policies for conservation, restoration and sustainable use of biodiversity.	Number of scenarios and maps available in an appropriate format as inputs for public policies on biodiversity; Number of public policies for biodiversity management that incorporate climate modelling; Number of staff of governmental and non-governmental agencies trained	MMA	n/a
Biodiversity and Ecosystems	Deployment of monitoring in 50 federal Conservation Units, for in situ evaluation and monitoring of the impacts of climate change on current and future biodiversity.	Develop and implement an in situ programme for monitoring biodiversity in terrestrial ecosystems in 40 Conservation Units (CUs), covering different biomes, and in 10 CUs located in coastal marine ecosystems, with emphasis on critical ecosystems such as coral reefs and mangroves.	Number of Conservation Units with monitoring implemented and maintained per year. Number of biodiversity diagnoses in monitored CUs; Number of reports and trend analyses on relationships between biodiversity and climate, including reports on specific formations/ taxons; Early-warning system deployed and number of	ICMBIO	n/a

			warning reports issued since its deployment;		
Water resources	Incorporate measures for adaptation to climate change into actions carried out by the National Water Agency.	Identify/propose “no regrets” adaptation measures, targeted at enhancing capacity to respond of the National Water Resources Management System and at reducing vulnerabilities of the main water-user sectors, populations and ecosystems to foreseen adverse effects.	Progress in deployment of water resources management projects and instruments.	ANA	n/a
Water resources	Develop integrated climatic and hydrological models and assess their impact on water resources management	<ol style="list-style-type: none"> 1. Use of new modelling techniques with dynamic and statistical methods borrowed from other Global Climatic Model (GCM) families, thereby increasing the number of projections available for analysis of the impact of climate change on water resources; 2. Develop studies using Economics of Climate Adaptation (ECA) methodology, based on the Piracicaba-Capivari-Jundiai River Basin project; 3. Enlist scientific and technological inputs, by means of a specific call for proposals to be drafted jointly with CNPq, targeted at the climate-change/ water-resources interface. 	Progress in the development of projects.	ANA	n/a
health	Expand the scope of the National Drinking Water Quality Surveillance Program (VIGIAGUA) to reach 85% of Brazilian municipalities, by 2019.	<ol style="list-style-type: none"> 1. Enhance the National Drinking Water Quality Surveillance Information System (SISAGUA) incorporating new features and health-risk management reports; 2. Expand and establish the network of laboratories for monitoring, follow-up and dissemination of information on the quality of drinking water; 3. Record on SISAGUA information on registration, control and surveillance of drinking-water quality; 4. Draw up risk maps on the supply of drinking water, based on the information generated by SISAGUA. 	Percentage of municipalities with information on registration	MS (SVS)	n/a

health	Establish a study, research, monitoring and communication network on climate and health, with a view to expanding technical-scientific knowledge and inputs for health status analysis and for consolidate decision-making of the Unified Health System (SUS).	<ol style="list-style-type: none"> 1. Integrate climatic, environmental and socioeconomic risk analysis into SUS procedures for monitoring of public health emergencies; 2. Establish centres for studies and research on climate and health within the SUS; 3. Establish a panel for strategic information on climate and health to support the strategic management in the SUS; 4. Establish a Centre for Integration of Health, Environment and Sustainability Technologies (CITSAS) within the National Climate and Health Observatory and the Knowledge Centre on Public Health and Disasters (CEPEDES). 	Network established and consolidated; Cooperation agreement drafted and implemented; Network project drafted; CITSAS project drafted; Protocol for monitoring public-health emergencies integrated with analysis of climatic, environmental and socioeconomic risk drafted; Panel for strategic information on climate and health established; Integration Centre for Health, Environment and Sustainability Technologies established.	MS (SVS/ FIOCRUZ)	n/a
Coastal Zone	Establish Reference Centres for Coastal Management and build and organise information and tools for climate risk modelling and generation of qualified responses	<ol style="list-style-type: none"> 1. Establishment of 4 Reference Centres for Coastal Management; 2. Qualification and provision of instruments and tools for modelling and a knowledge-management platform for adaptation in the Coastal Zone; 3. Capacity-building for government and non-government players on deployment of adaptation activities. 	Number of Centres installed; Number of managers trained; Percentage of the knowledge-management system made available to the public.	MMA	n/a

	within the Coastal Zone				
Coastal Zone	Draft, deploy and earmark funding for a strategy to harmonise continental altimetry with marine bathymetry (AltBat).	<ol style="list-style-type: none"> 1. Establish a work plan, with methodology, cost assessment and pilot studies, to harmonize altimetry and bathymetry with measures and guidelines for prevention of the effects of erosion and flooding; 2. Draw up a strategy, with short and medium-term actions, for deployment of a methodology and systems for harmonization of altimetry and bathymetry; 3. Preparation of standards for strategy implementation (structure for governance and budget); 4. Implementation of pilot projects in priority areas. 	<p>Percentage of the work plan completed;</p> <p>Percentage of the strategy presented;</p> <p>Pilot project signed (but not executed);</p> <p>Draft of standards presented.</p>	IBGE (CONCAR) e MMA	n/a
Coastal Zone	Macro-diagnosis of the Coastal Zone (Macro-ZC) reviewed, considering climate change related vulnerabilities.	<ol style="list-style-type: none"> 1. Database for review of the Macro-diagnosis of the Coastal Zone organized from the standpoint of environmental, economic, social and cultural integration; 2. Term of Reference for the review of the Macro-diagnosis of the Coastal Zone drafted and validated by a group of experts (researchers and coastal managers); 3. Macro-ZC review published and distributed; and managers, researchers and civil-society trained. 	<p>Percentage of the work plan completed;</p> <p>Publication drafted and distributed;</p> <p>Number of managers, researchers and civil-society staff trained.</p>	MMA	n/a

BURKINA FASO

SECTOR	OBJECTIVE	ACTIVITIES	OUTCOMES	INDICATORS	COSTS
Agriculture	Recover and restore soil fertility in order to limit its continued degradation	<ol style="list-style-type: none"> 1. Recover degraded land by means of sub-soiling and reforestation; 2. Implement water and soil conservation and soil defense and restoration techniques; 3. Implement sustainable land management (SLM). 	Degraded soils have been recovered and their fertility restored	Rate of recovery and restoration of the fertility of degraded soils	FCFA 1313 billion
Agriculture	Improve agricultural productivity	<ol style="list-style-type: none"> 1. Adopt production-driven systems (intensification of production); 2. Use adapted varieties (production of short-cycle seeds); 3. Improve land tenure security as a basis for land conservation and management; 4. Promote water-saving irrigation systems; 5. Promote off-season farming practices (market gardening and irrigated crops). 	Improved producer access to production factors in terms of both quantity and quality	Rate of producer access to: agricultural inputs; agricultural equipment; agricultural credit	
Agriculture	Strengthen the resilience capacities of post-disaster populations (floods, droughts, large-scale predator attacks etc.)	<ol style="list-style-type: none"> 1. Ensure that crop-growing plots are located outside river and dam beds; 2. Build capacities for the use of meteorological data; 	Stakeholders are more resilient to climate change	Nre climate-change-adapted production techniques have been developed	
Agriculture	Carry out research into methods for counteracting rising temperatures	<ol style="list-style-type: none"> 1. Reduce various losses (including evaporative and infiltration losses) from lakes and reservoirs; 2. Increase storage capacities (reservoirs/storage tanks, rainwater basins etc.); 3. Develop a system for monitoring the impact of rising temperatures on dam levels (improved evapotranspiration management); 	n/a	n/a	

		4. Adapt irrigation systems to take account of evapotranspiration phenomena in water bodies along the perimeters of developed areas			
Agriculture	Develop early warning systems to ensure efficient management of variability and climate change	1. Develop protection technologies that are better adapted to the various agro-climatic zones (living hedges or shelterbelts); 2. Build capacities for the use of meteorological data in agricultural sector planning.	Early warning systems for the efficient management of variability and climate change have been put in place and are functional	Efficiency of new early warning systems; Capacity of vulnerable populations to anticipate vulnerability and climate change	
Environment and Natural resources	Increase ecosystem productivity and resilience	1. Implement reforestation projects and programmes using local species 2. Disseminate anti-erosion techniques 3. Establish integrated hydrographic basin management schemes 4. Rehabilitate silted basins and redevelop catchment areas 5. Plant woody and herbaceous species to prevent gully erosion 6. Rehabilitate and preserve wetlands 7. Develop research programmes on the resilience of fish, wildlife and forest species	Forest biomass production has increased and new fuel wood technologies have been promoted; Land management practices have become more sustainable; Best practices have been introduced in the field of fisheries and aquaculture	Change in forest biomass; Rate of recovery and restoration of the fertility of degraded soils; Changes in state-monitored stocked water bodies	FCFA 375 billion
Environment and Natural resources	Improve biodiversity conservation		Biodiversity (forests, wildlife etc.) has been increased and protected from climate-change-related risks	Changes in protected plant and animal species	

Environment and Natural resources	Improve ecological research and monitoring		A permanent R&D facility devoted to climate change adaptation has been set up and is operational; Climate change impacts on ecosystems are monitored on a permanent basis	Adoption rate for climate change adaptation techniques	
Environment and Natural resources	Mitigate greenhouse gas emissions		Urban pollution mitigation measures have been established, and a national observatory for the environmental and natural hazards has been set up	Greenhouse gas emission reduction rate	
Energy	Reduce the impact of climate change on the energy sector	<ol style="list-style-type: none"> 1. Establish a climate monitoring/early warning system; 2. Diversify electricity supply sources by developing other renewables (solar, biomass and wind); 3. Build hydraulic capacities in the Sudanian zone, which is likely to see a slight increase in rainfall according to climate predictions 4. Provide increased flood protection for dams on the basis of strict compliance with construction standards; 5. Store energy in hydraulic form through turbine water conservation and reuse; 6. Make improvements to hydroelectric 	Energy sector stakeholders are better informed about climate change; Account is taken of climate change when drafting and implementing energy policies; 1.8 million improved cooking stoves are distributed in rural areas over the next five years	Number of people targeted in information and awareness-raising measures; Action plans, projects and programmes make allowances for climate change; Rate of penetration of improved cooking stoves	FCFA 1126 billion

Energy	Provide a sustainable supply of cooking energy	structures where necessary; 7. Produce water management and development plans;	Butane gas consumption is promoted	Household penetration rate for butane gas	
Energy	Reduce electricity consumption	8. Diversify energy sources (solar, wind, biogas); 9. Promote energy-saving technologies in industry and the construction sector; 9. Promote improved cooking stoves with a view to significantly reducing wood and charcoal consumption; 10. Increase the use of biomass (harvest residues) in the form of briquettes; 11. Improve stakeholder/consumer knowledge and awareness of energy-saving methods and heating equipment; 12. Develop and disseminate new air conditioning technologies (solar air conditioning, evaporative air conditioning)	The public is more aware of the need to save energy; Consumers have been provided with information and made aware of the need to save energy; Twenty administrative buildings have been fitted with solar (absorption-based) and evaporative air conditioning systems on an experimental basis	Changes in electricity consumption; Energy saved (as a percentage); Penetration rate of solar and evaporative air conditioning	
Energy	Improve knowledge of the impact of climate change on the energy sector		Key stakeholders in the sector have access to more detailed climate predictions; Solar, wind and hydro power potential is better evaluated in the context of climate change; Technologies which are better adapted to climate change have been	Climate prediction usage rate; Study report available; Efficiency of new technologies	

			developed and are in use		
Health	Develop leadership and governance for climate change impact adaptations in the healthcare sector	1. Incorporate climate change issues into healthcare strategies; 2. Strengthen collaboration between the climate change and healthcare sectors	Climate change issues have been incorporated into healthcare strategies; Intersectoral collaboration has improved	National healthcare strategies incorporating climate change issues are available; A framework for collaboration is in operation	FCFA 188 billion
Health	Build human resource capacities in the healthcare sector	1. Improve levels of knowledge among personnel in relation to climate-change-sensitive diseases	Training is provided on climate change; Healthcare personnel are more knowledgeable about climate change	A training plan has been produced; Number of people trained	
Health	Improve detection and response rates for climate-change-related phenomena	1. Develop a communication strategy for climate change impact adaptations; 2. Build capacities for forecasting and responding to climate-change-related phenomena	Populations are more aware of climate change impacts; Capacities for forecasting and responding to climate change-related phenomena have been improved	A communication strategy is available; Awareness-raising resources are available; Forecasting and response tools are available	
Health	Adapt healthcare infrastructures to climate change impacts	1. Establish sanitary infrastructures which are adapted to climate change impacts	Sanitary infrastructures have been adapted to climate change impacts	Sanitary infrastructures have been constructed to take account of climate-change-related risks	

Health	Promote research into climate change	1. Promote research in the fields of healthcare and climate change	More is known about the impacts of climate change on the healthcare sector	Number of research studies dealing with healthcare and climate change	
Infrastructure and housing	Improve access to adequate housing for disadvantaged populations by means of rental properties, self-build funding and new social housing	1. Fund projects in the field of social housing and facilities; 2. Construct buildings which require less energy for air conditioning systems, which do not have air conditioning systems or which use low-power air conditioning systems.	Access to adequate housing for everyone is guaranteed through the provision of rental accommodation, support for self-builds and the construction of social housing	Social housing built (number); Number of people in receipt of self-building grants from the Self-Build Assistance Office; Self-Build Assistance Office client numbers; Average cost of house building; Level of enforcement of rental accommodation regulations; Level of research into appropriate construction materials and techniques; Ease of access to accommodation	FCFA 375 billion
Infrastructure and housing	Construct public facilities and infrastructures (road, hydraulic and stormwater/wastewater	1. Adapt gutters by ensuring that new infrastructures are no longer designed to be used for wastewater or solid waste and can no longer act as bottlenecks during periods of heavy	Infrastructure and superstructure facilities are planned, designed, implemented and	Average service life of facilities; High-quality and climate-change resilient structures; Number	

	<p>r drainage) which are fit for purpose and resilient thanks to high-quality design and implementation and proper maintenance</p>	<p>rainfall;</p> <ol style="list-style-type: none"> 2. Raise user awareness of the need to maintain the structures, 3. Place covers on structures to avoid them being used for solid waste during periods of rain; 4. Infrastructure should be adapted to an appropriate size, again to avoid the risk of being used for solid waste; 5. Strict compliance with and updating of current regulations regarding environmental impact assessments and highway construction standards; 6. Ensure that appropriate consideration is given to transportation and mobility requirements when planning and building roads; 7. Build roads in urban developments 	<p>maintained properly and are long-lasting</p>	<p>of awareness-raising meetings held; Updated standards</p>	
<p>Infrastructure and housing</p>	<p>Turn the towns of Burkina Faso into hubs of economic growth and sustainable development</p>	<ol style="list-style-type: none"> 1. Use advocacy to promote specific actions to national and local decisionmakers 2. Encourage TFPs to make it easier for vulnerable persons to access funding/finance 3. Encourage ministries to reduce case processing times 4. Promote the use of solar energy for disadvantaged areas and nearby public facilities 	<p>Recognise the role played by the towns of Burkina Faso as hubs of economic growth and development</p>	<p>Changes in urban poverty rates; Number of projects/investments in secondary towns; Number of towns participating in development projects; Number of rehabilitated old districts; Changes in rural exodus rate; Number of land tenure titles granted</p>	

				to disadvantaged groups	
Water security	Improve the mobilization and exploitation of water resources	<ol style="list-style-type: none"> 1. Monitor water reservoirs (dikes, dams, water flows, valve operation etc.); 2. Establish water reservoirs: construct modern wells, high-flow boreholes, dams; pond management; watercourse diversions; 3. Combat the silting of water bodies Long-term 4. Reduce water consumption for domestic purposes (watering plants, swimming pools) during shortage periods Short-term 5. Use water more efficiently Short-term 6. Develop integrated water resource management systems 7. Draft water management and development plans 8. Use appropriate technologies to improve access for women to drinking water in the dry season Medium-term 9. Develop sanitation infrastructure in urban and rural environments 10 Improve knowledge about water resources in the context of climate change 	New design standards which take account of climate change considerations have been introduced for water resource exploitation and mobilisation infrastructures; Water mobilisation infrastructures (dams) have been rehabilitated; Water resource exploitation infrastructures (irrigated areas) have been rehabilitated; New water mobilisation structures which are adapted to climate change impacts have been constructed; New water resource exploitation structures (irrigated areas) which are adapted to climate change impacts have been constructed; Stakeholder capacities to monitor and	A document has been produced on the new standards; Number of degraded dams which have been rehabilitated; Number of irrigated areas which have been rehabilitated; Number of new dams which have been built; Number of stakeholders trained in the monitoring and maintenance of hydraulic structures; Number of dams and irrigated areas which are maintained (preventive measures); Number of high-flow boreholes; Number of economical water transportation infrastructures built	FCFA 101 billion

			maintain dams and irrigated areas have been strengthened; High-flow boreholes have been constructed; Economical water transportation systems have been established		
Water security	Improve water resource protection and conservation		Water planning and management master plans have been produced and implemented; Reliable evaporation reduction technologies have been introduced; Water losses from large dams and waterbodies have been reduced	Number of water planning and management master plans produced; Rate of evaporative water loss reduction; Rate of reduction in water losses from large dams; Rate of implementation of pluriannual projects/programmes under the water planning and management master plans	
Water security	Improve knowledge about surface and, more importantly, underground water resources in the context of climate change		Knowledge of water resources in the context of climate change has been improved	Number of stations (hydrometric, piezometric, rainfall and water quality) stations monitored; Number of existing stations which have	

				been rehabilitated and are monitored; Number of new stations which have been established and are monitored	
Water security	Improve access to sanitation		Recognized flood areas have been drained; Swampy areas have been decontaminated; Wastewater and excreta are collected and recycled; Populations living next to waterbodies are protected against water-borne diseases	Rate of flood area reduction; Decontaminated areas; Change in volumes of wastewater and excreta used and recycled; Rate of reduction in water-borne diseases	

PRIORITY PROJECT N. 1

PROJECT TITLE	NATIONAL OBSERVATORY OF PASTORALISM IN BURKINA FASO
SECTOR	Livestock production
OVERALL OBJECTIVE	Improve the security of pastoralism through better dissemination and promotion of information on pastoral resources and the relevant access conditions
SPECIFIC OBJECTIVES	<ul style="list-style-type: none"> - Improve real-time access to pastoral information; - Attain better knowledge of the main transhumance routes. - Improve pastoralism-related communications; - Promote lasting social peace by reducing tensions relating to pastoral conflict. - Ensure that the main pastoral warning systems are operational.

SHORT-TERM OUTCOMES	<ul style="list-style-type: none"> - An office for the National Observatory of Pastoralism in Burkina Faso has been set up and is operational, - A website for the National Observatory of Pastoralism in Burkina Faso has been set up and is operational. - Regular reports and bulletins are available with pastoralism-related information. - A Pastoral Situation Monitoring Committee [Comité de Suivi de la Situation Pastorale, CSSP] has been set up and is operational. - Maps of transhumance routes and outbreaks of emerging diseases have been produced and/or updated. - Climate risk reduction and management tools are used in the livestock farming sector. - The main centralised systems and the National Livestock Farming Laboratory have been allocated additional material and human resources. - Radio and television programmes showing experiences of managing pastoral crises have been made and broadcast. - SMS-based systems for obtaining information on cattle prices and pastoral risk areas have been disseminated.
LONG-TERM OUTCOMES	<ul style="list-style-type: none"> - Transhumance movements are better managed. - A climate of positive social cohesion is maintained and strengthened. - Variability and climate change aspects are better integrated by policy makers into new development projects and programmes. - Pastoralists retain their livelihoods and make an increased contribution to the national economy.

PRIORITY PROJECT N. 2

PROJECT TITLE	LIVESTOCK FARMERS' CLIMATE INSURANCE PROJECT
SECTOR	Livestock production
OVERALL OBJECTIVE	Improve the protection of animal capital in order to provide sustainable support for the pastoralist economy and improve stakeholder resilience with a view to sustainable food security in Burkina Faso
SPECIFIC OBJECTIVES	<ul style="list-style-type: none"> - Support the replenishment of household regeneration hubs following climate events. - Ensure the survival of regeneration hubs by means of better sanitary coverage. - Reduce cattle-related economic losses by better anticipating pastoral crises. - Support dairy and egg production by livestock farmers during heat spikes. - Protect the health of consumers of heat-perishable foodstuffs of animal origin.
SHORT-TERM OUTCOMES	<ul style="list-style-type: none"> - The annual livestock ownership of the 5,000 poorest households is maintained. - Economic losses resulting from animal deaths have been reduced,

LONG-TERM OUTCOMES	<ul style="list-style-type: none"> - Fewer animals are sold on cattle markets during economic downturns. - More livestock farmers belong to associations and the rate of animal disease notification is increased. - The rate of animal mortality in emerging animal disease outbreaks is reduced. - Fewer breeding animals are lost due to food shortages - Livestock farms are better adapted to heat-related impacts - Consumer health is protected in relation to products of animal origin - National livestock production resources have been protected as the basis of the pastoralist economy. - Livestock farming revenue sources have been diversified. - The consumption of high-quality animal products remains at its previous level. - National production markets can still supply adequate livestock numbers.
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PRIORITY PROJECT N.3

PROJECT TITLE	PROJECT INVOLVING THE CREATION OF THREE LIVESTOCK PRODUCTION INTENSIFICATION AREAS
SECTOR	Livestock production
OVERALL OBJECTIVE	Reduce the climate vulnerability of pastoralist farmers and promote local economic development
SPECIFIC OBJECTIVES	<p>Establish and equip three strategic areas for the critical dry period.</p> <p>Increase the supply and performance of domestic ruminants in the Livestock Production Intensification Areas.</p> <p>Protect the livelihood of pastoralist farmers and promote their socioeconomic integration.</p> <p>Reduce large-scale cattle mobility on a national and cross-border basis.</p> <p>Transfer technology packages to livestock farmers in order to intensify production.</p> <p>Establish dairy basins in the Livestock Production Intensification Areas</p>
SHORT-TERM OUTCOMES	<p>Three Livestock Production Intensification Areas have been established and are operational.</p> <p>The three Livestock Production Intensification Areas have been provided with appropriate pastoralism-related and socio-economic infrastructures.</p> <p>A pastoral dam has been built in each Livestock Production Intensification Area.</p> <p>Pastures have been developed and are maintained using an irrigation system in the dry season.</p> <p>Eighty percent of livestock farmers produce fodder,</p> <p>Improved fodder seed is produced in the Livestock Production Intensification Areas.</p> <p>Fodder stocks are built up for the critical dry season,</p>

Animal vaccination and deworming campaigns are carried out on an annual basis.
Livestock farmers are taught modern farming techniques at training centres

LONG-TERM OUTCOMES

Three hubs of economic growth through domestic ruminant production have been established.
Cattle mobility is controlled towards strategic safe areas during the critical dry period.
Cattle breeding practices which are highly vulnerable to climate variability are safeguarded.
Sustainable milk production systems are established to increase public food security.
Agroforestry practices are established in Livestock Production Intensification Areas to ensure the sustainable management of natural resources.
Livestock farmers adopt production methods which are appropriate for hot climates

CAMBODIA

SECTOR	ADAPTATION PRIORITY	TARGET ID (target areas; beneficiaries)	TYPE OF INVESTMENT	SYNERGIES	IMPLEMENTERS	FINANCING	STATUS	TIMELINE
Agriculture	Promoting climate resilience of agriculture through building/maintenance dikes in coastal areas	Areas: coastal areas; 10000 farmers, 10000 ha from vulnerable areas affected by salt water	Soft: 1. Explanation on benefits, investment process details; 2. Pilot on community farming system; 3. Agricultural extension; 4. Maintenance and operations. Hard: Dykes. Ground impact: 10000 ha and 10000 farmers	Project well aligned with	MOWRAM will be the implementing lead, with engagement from MAFF and subnational entities • MOWRAM (5 departments); • MAFF, Ag. Extension and PDA; • MOWRAM has experience managing large operations from ADB, including PPCR investment projects	The project needs further developing on costing and budgeting. • Cost method estimate: each project should consider in details. • Partially funded by CCCA. • Budget Process integrated: PIP (following up MoWRAM) • MOWRAM has managed large	Near Impl. Phase. The project (USD3M) has advanced the project formulation but needs working on the breakdown of costing and components. With some project preparation support (PIF/PPG?) the project could be ready for implementation	Time constraints: Scheduling, Agreement on implementing, output report; EIA (Environmental Impact Assessment): Required

						investments before, through ADB PIUs and developed some capacity to manage int.funds		
Agriculture	Promoting and up-scaling climate smart farming system that resilient to climate change	Area: 23 provinces (1000 communes), 11000 ha. <ul style="list-style-type: none"> • Vul. assessment: None • Gender: None 	<ul style="list-style-type: none"> • Soft: farming system, technical package, crop tolerance • Hard: infrastructure to store water • Ground Impacts: Income of rural households increased by >50%; and Improve practices 	<ul style="list-style-type: none"> • CCCSP, and CCSP Strategic Objective • Showcase and attract duplication, 	<ul style="list-style-type: none"> • MAFF • CARDI, GDA, PDA • Local NGOs • EIA (like fertilizers) 	<ul style="list-style-type: none"> • Cost method estimate: No ideas • Budget Process integrated: PIP (don't know) • Capacity to manage loan or grant: exist, replenishment approved MEF depend on the projects (3 months, accounting at Central Bank) 	Phase: Preparation	Time constraints: timeframe on money released for periods and action plan; Replenishment and financial and output report; and processing document MEF;

DRR/Agriculture	Institutional capacity development for natural disaster coordination and intervention	<ul style="list-style-type: none"> • Areas: • Vulnerable assessment: None • Gender: None 	<ul style="list-style-type: none"> • Soft: Regulation development and guidelines • Dev of Technical guidelines on post-harvest, processing and packaging; • Hard: None • Ground Impacts: reduce losses in quantity and quality of agricultural product. 	<ul style="list-style-type: none"> • CCCSP and CCSP strategic objective: Agr. and agroindustry development; 	<ul style="list-style-type: none"> • MAFF (GDA, DAI) 	<ul style="list-style-type: none"> • Cost method estimate: no details • Budget Process integrated: no ideas on PIP • Implementing institutions: Capacity to manage loan or grant. • In kind contribution from MAFF. 	Phase: Preparation	<ul style="list-style-type: none"> • Time constraints: Drafting supported by technical experts and consultation process (need for technical inputs from other ministries and agencies).
Agriculture	Develop crop variety suitable to AEZ resilient to climate change (include coastal zone)	<ul style="list-style-type: none"> • Areas: 4 AEZs (Tonle Sap region, Mekong Plain, Coastal region, North-Northeastern mountainous region) • 68% of rural farmer (6-7 million people) • Hundred of researcher and 	<ul style="list-style-type: none"> • Soft: Research and Capacity. • Hard: 4 crop varieties development; • Ground Impacts: (i) 4 crop varieties, (ii) capacity on biotech research, (iii) crop yield improved 	<ul style="list-style-type: none"> • CCCSP and CCSP strategic objectives: Agr. and agroindustry development; • Potential to scale up results from pre-existing project (ACIAR ACCA, funded by Australian cooperation) 	<ul style="list-style-type: none"> • CARDI, Rice Crop department of GDA, PDA, MAFF • Local NGOs 	<ul style="list-style-type: none"> • Estimated cost:USD13.380 (over 5 y) • Cost to beneficiaries estimated at USD 1,82 • Budget Process integrated: no ideas on IPO • 	Phase: Near Impl.	<ul style="list-style-type: none"> • Time constraints: Specificities to different areas to implement crop.

		<p>extension worker in 23 provinces;</p> <ul style="list-style-type: none"> • Vul assessment: None. • Gender: None 				<p>Implementing institutions:</p> <ul style="list-style-type: none"> • Capacity to manage loan or grant: yes. 		
Agriculture	<p>Strengthening capacity of agricultural and agro industry development entrepreneur and the agricultural cooperative in low carbon production</p>	<ul style="list-style-type: none"> • Areas: training of trainers, M&E official, technical staff of stakeholders; • TOT expected impact: (i) 50 (training of trainer)*10 times technical staff of MAFF. Replication: farmer group, entrepreneurs, and private sector. 	<p>Soft: Capacity building</p>	<p>No clear connection to strategic priorities in climate/development plans.</p>	<p>MAFF (GDA, DAI, CARDI) supported by MEF and NGOs, and donors.</p>	<ul style="list-style-type: none"> • USD 1,5 million • Cost method estimate: details. • Budget Process integrated: PIP (no ideas) • Capacity to manage loan or grant: yes • MAFF in-kind contribution. 	<p>Phase: Preparation</p>	<p>Time constraints: selecting other stakeholders, joint meeting institutions/inter-ministry, or private sector</p>

Agriculture Infrastructure	Climate-proof tertiary-community irrigation development to enhance agricultural production of paddy field in four communes of Mekong Delta, District Kampong Ro, Svay Rieng Province	<ul style="list-style-type: none"> • Areas: Kampong Ror, Svay Rieng Province; Command areas: 100,000 ha • Vulnerable assessment: None • Gender: None 	<ul style="list-style-type: none"> • Soft: Community Development; • Hard: tertiary irrigation system; • Ground Impacts: (i) 5 communitybased irrigation system, (ii) yield increase, (iii) Capacity on project implementation; (iv) income of local communities are enhanced. 	CCSP 3 and 4	MoWRAM supported MAFF, MRD, and donors	<ul style="list-style-type: none"> • Cost method estimate: detailed budget and estimation of CBA and ROI • Budget Process integrated: no ideas on PIP; • Implementing institutions: MRD, MAFF, NCDD, donors; • Capacity to manage loan or grant: yes. • Budgeted: USD 530000 	Phase: Near Impl	Time constraints: procurement on supply.
Agriculture technology	Promote post-harvest technology for cereal crop and tuber crop and conduct the research and transfer	<ul style="list-style-type: none"> • Areas: General • Vulnerable assessment: None • Gender: None 	<ul style="list-style-type: none"> • Soft: Capacity, research; • Hard: Develop technologies for harvesting and post- 	<ul style="list-style-type: none"> • Rice policy 2010, ASDP 2010-2013, NSDP goal 6 	GDA, CARDI, DAI for implementation	<ul style="list-style-type: none"> • USD 3,5 million • Cost method estimate: not know details. • Budget Process 	Phase: Near Impl	Time constraints: infrastructure for transportation, drying crop, quality/stand

	appropriate post-harvest technology.		harvesting (machinery and equipment) <ul style="list-style-type: none"> • Ground Impacts: (i) reduced loss of 10%, (ii) better technology for farmers 			integrated: PIP (no ideas), <ul style="list-style-type: none"> • Funding: MAFF contribution in Kind; and ADB financing expected • Funding: loans or banks or implemented by private sector; 		standard, and storage constraints.
Fishery	Promoting aquaculture production systems and practices that more adaptive to climate change	<ul style="list-style-type: none"> • Locations selected • Type of beneficiary identified (85.000 farmers, authorities, admin staff) 	<ul style="list-style-type: none"> • Mostly SOFT (vuln. Ass, research) and KM, training • Small HARD for piloting (testing field) • GROUND IMPACT (as pilot) 	<ul style="list-style-type: none"> • Alignment with National CCSP (3 Obj.) and 2 CCAPs • Build on previous seeds-funds from CCCA • Links with ASEAN Good Aquaculture Practice (at regional level) 	MAFF, Fisheries Dep. (and local level executing agencies) <ul style="list-style-type: none"> • Funds management capacity within MAFF 	<ul style="list-style-type: none"> • Budget exist (USD3.4 million) • No CBA or breakdown of costs and budget • May avoid future costs (unlikely to generate financial profits) • May generate return but 	<ul style="list-style-type: none"> • Advanced preparation Phase (Impl. With a PPG?) • Still needs: targeting, budgeting/financing (AF?) 	

						ROI not estimated		
Fishery	Promoting climate resilience of wild fishery resources	<ul style="list-style-type: none"> • Geographical sites have been identified (Tonle Sap, and upper Mekong: Kratie and Stung Treng) based on potential fish stock (studies on fisheries and climate vulnerability in place) • Fisheries communities in mangrove and watershed areas: 1621 communes, targeted (TBD) 	<ul style="list-style-type: none"> • Mostly Soft (assessments, trainings) with some hard investment for the piloting activities (digging, zoning and introduction of species) 	<ul style="list-style-type: none"> • Clear alignment with CCCSP and INDC and with sectoral priorities (Fishery Strategic Development Plan 2017-2021) • Potential synergies with PA 1 and with private ventures (e.g.: WorldFish investments) 	<ul style="list-style-type: none"> • FIA (under MAFF as leading partner, in coordination with MoE, MLMUPC for coordination with provincial level). 	<ul style="list-style-type: none"> • USD 1,3 Million • Some financial support from Gov sources, and seeking external support (grants) • FIA has some project management experience, but little exposure to international climate funds. 	<ul style="list-style-type: none"> • Project at concept note stage and needing more formulation • With a Project Preparation Grant, could enter Near Impl. phase. 	<ul style="list-style-type: none"> • Need to develop implementation arrangements with provincial level and possibly with NGOs or private actors for piloting phase execution

Forestry	Conducting capacity development, research and awareness raising on REDD+	<ul style="list-style-type: none"> • No vulnerability assessment and no identification of the target (communities or location) to be involved in the CBA activities. • No estimation of potential beneficiaries 		Explore synergies with PA 2, 17 and 21 (packageable potential?)	<ul style="list-style-type: none"> • REDD Secretariat and Institute of Forest and Wildlife Research and Development (MAFF link?) 	<ul style="list-style-type: none"> • 1,6 Million • Over-estimation of budget considering the type of investment (soft ,research and publications) and no detail on costing. 	<ul style="list-style-type: none"> • Preparation phase (at best, since link with adaptation is still to be established) 	
Fishery	Enhancing the climate resilience in fishery sector (ECRF)	<ul style="list-style-type: none"> • Fairly precise target/geographical id. • Focus on 560 fishery communities (esp. Mondulkiri, Ratanakiri, Takeo, Prey Veng, Svay Rieng facing food security issues (vulnerability proxy) • 360 community 	<ul style="list-style-type: none"> • Demonstration of adaptation approaches and (climate resilient and highly productive species selection) • Some hard investment (piloting) with ground impact and clear development cobenefits • Soft: KM, 	<ul style="list-style-type: none"> • Good alignment with INDC, CCCSP and sectoral plans (Fisheries Strategic Development Plan 2017-2021) • Mainstream in Strategic Plan of Fisheries sector from 2017-2022, but not yet implement and will be translated into 	<ul style="list-style-type: none"> • FIA and provincial department of MAFF, local authority and communities • New reforming structure of fisheries to be under provincial agriculture 	<ul style="list-style-type: none"> • USD3 Million • Gov't budget based on the priority actions of FiA such as aquaculture production and natural fish stock increasing 	<ul style="list-style-type: none"> • Near Impl. phase: the project needs further formulation and detail (particularly on budget), but could be brought to implementation phase with a project Preparation Grant 	<ul style="list-style-type: none"> • FIA strategic plan not ready yet • Several studies conducted but results required to establish baseline • Key success is the role of subnational/provincial level in protecting

		fisheries are officially registered Site TBD (Kratie, Mondul Kiri?)	inventories, vulnerability studies	annual action plan				fisheries resources, which would require completion of decentralization process
Forestry	Developing and implement regulations and mechanism on REDD+	<ul style="list-style-type: none"> • Generic target: Indigenous people and communities in forested areas • Geographical target areas in Cambodia implemented REDD+ including: 1. Keo Sima, Moundul Kiri and 2. Oudor Meanchey (Search community?) • Kulen Promtep wildlife Sanctuary is a potential areas for REDD+ 	<p>Soft: awareness raising on REDD+, coordination and capacity development (provincial, authority and community), communities' participation Services/recurrent investments:</p> <ul style="list-style-type: none"> - land use demarcation (for REDD) - tree planting - Increase number of rangers in protected areas 	<ul style="list-style-type: none"> • Alignment with Forestry Strategic Plan, CCCSP, INDC • Links to REDD+ Roadmap and Strategy 	<ul style="list-style-type: none"> • Doubts about the leading (MOE, MAFF forestry department?) • Implementing partner • Provincial authorities, under coordination from relevant ministries (Important MoE and MAFF) 	<ul style="list-style-type: none"> • USD2,25 million • CBA undertaken for flooded forests • No detail about budget breakdown (CBA, ROI: e.g.: on benefits from carbon credits), 	Project preparation phase: needs further design/clarification budget and on institutional arrangements	Gov't support and high commitment to REDD+

Livestock	Enhancing animal waste management and climate change emission mitigation							
Forestry	Promoting sustainable forest management	Geographical location has been preidentified (Preah Vihear, Mondulkiri, Kratie, Kampong Thom, Stung Treng), but • Need for vulnerability assessment to define most vulnerable groups	<ul style="list-style-type: none"> • Soft: • Law enforcement; mapping of forest cover data, promoting communities integration in planning • Dissemination • Sustainable Livelihood intervention 	Alignment with CCCSP, INDC and sectoral plans, but mostly related to mitigation agendas	<ul style="list-style-type: none"> • Unclear (Dept. Forest Management • MoE, FA, subnational level, community forestry à improvement is to strengthening quality of work and providing USD, they have capacity to develop funding • FA has good experience of project implementation 	USD2,25 Million (expectation to pilot carbon credit marketing, but no market study undertaken)	Project preparation: Concept note stage, needs project formulation: <ul style="list-style-type: none"> • No budget breakdown (e.g.: need for market products prospective work?) 	
Forestry	Promoting reforestation and afforestation to increase carbon stock	<ul style="list-style-type: none"> • No clarity about targets and connection to adaptation benefits from this action • Potentially 		Potential synergies with “Ecosystem Based Adaptation” approaches with involvement			USD 8,2 million • No CBA is reported, no analysis of potential ROI or potential marketvalue	

		linked to Community based adaptation, but not established		from communities			for this operation (potential benefit from carbon trading)	
Livestock	Promoting resilience in animal production and adaptation to climate change (technical package)	Food security taken as a proxy to vulnerability for targeting purposes (Takeo, SR) or based on assessment needs of farmers in animal raising/livestock • Group: Vulnerable group/marginalized ppl to have, farmer groups	• Combination of soft (technical guidelines, capacity building), and hard (intro. Of new breeds, forages and techno. for water management and animal health) and ground impact at long-term (expansion of integrated farming systems)	• Align with existing CCCSP, INDC and Strategic Plan for livestock extension • Already mainstreaming this action in PIP, Strategic Plan of livestock	• Technology and techniques by private sector • General Directorate of Livestock, MAFF	• USD8 Million • Some Gov't funds allocation has been done • Development of PIP underway	• Preparation phase: more studies needed; as well as budget details (no CBA)	
Water and Sanitation	Carry out risk assessment and management for the improvement of water supply	• Location identified (6 provinces, Tonle Sap Lake) • Number of	• Mostly HARD (latrines, wells, ponds) • With GROUNDIMPACT	• Clearly aligned with nat. planning docs and sectoral priorities (and	• MRD or Water? • What capacity to implement?	• Budgeted 4Mil; (current prices); • Cost per beneficiary/	• Near Impl. As long as project document is formulated • Does a	• Project formulation (if doc. Non existent)- • Could seek AF or LDCF

	and sanitation (WATSAN) in the Tonle Sap Great Lake provinces	beneficiaries identified (farmers, wells committees)	<ul style="list-style-type: none"> • Little SOFT (baseline, training) 	contribution to indicators identified)		<ul style="list-style-type: none"> • Economic return explored (but unlikely) 	<ul style="list-style-type: none"> • project document exist? • If so, ready to fish funds and implement 	<ul style="list-style-type: none"> • funds • IF direct access AF (accreditation)
Infrastructure	Repair and rehabilitate existing road infrastructure and ensure effective operation and maintenance system, taking into account climate change impact	<ul style="list-style-type: none"> • Unclear id. Of geographical areas in CCAP project fiche • Gov. informants assessment: Provinces around the Tonle Sap Lake; Provinces along the Mekong 	<ul style="list-style-type: none"> • Soft: capacity development • Hard: Road and bridges constructions • Some services: road maintenance 	<ul style="list-style-type: none"> • Link to MPWT's BSP 2017-19 • Recommendation from PM • National and sub-national 	<ul style="list-style-type: none"> • MPWT to lead • BSP of MPWT • Partially funded (but don't know how much?) • Established Social and Environment Office in the department of planning 	<ul style="list-style-type: none"> • Very large budget for project: USD170 million • Conduct CBA for all projects funded by ADB • CBA conducted to support integration the action into BSP 	<ul style="list-style-type: none"> • In the preparation stage, but some parts of project are going on implementation. • Integrated in the BSP 2017-19 	<ul style="list-style-type: none"> • Time constraint in budget preparation and allocation from the government • Negotiation on bilateral funding with potential sources. • Advisable to consider mix of domestic/external sources

Infrastructure	Development and rehabilitation of flood protection dikes (Kampong Trabek, Bateay) for agricultural/urban development	<ul style="list-style-type: none"> Geographical location clearly identified (from Kampong Cham to the border with Vietnam (PreyVeng and SvayRieng) 	<ul style="list-style-type: none"> Mostly hard investments in infrastructure and little soft (baseline study, guidelines); with impact on the ground (farmers, dwellers' settlement) 	<ul style="list-style-type: none"> Directly aligned with the PM mandate to foster response to drought/floods and aligned with sector-wide plans 	<ul style="list-style-type: none"> MOWRAM Institution with project management capacity and experience with ADB operations/investment programs 	<ul style="list-style-type: none"> USD 4 Million Domestic budget allocation to be checked for cofinance 	Tentatively at Near Impl. Phase (if domestic budget and large SPCR/PPCR investments were aligned)	
Water	Up-scaling mobile pumping stations (20) and permanent station (10) in responding to mini-droughts	Geographical locations identified (Prey Veng and SvayRieng) for up-scaling of existing technology (10 stations, pumping machines to combat minidrought)	<p>Mostly HARD (extension of pumping machinery)</p> <ul style="list-style-type: none"> Soft: capacity development 	Links with mandate to focus on droughts and floods; links to MOWRAM sectoral priorities	MOWRAM, provincial level, Dept. of Irrigated Agri.)	<ul style="list-style-type: none"> The budget estimation is unclear in the project fiche (USD20K or USD20 million?). Needs clarification and detailed budgeting The implementer expects domestic/ext. funds with PIP development 	<p>May be ready for PIP development in the short term</p> <ul style="list-style-type: none"> Requires project formulation if seeking international climate funds Near Impl.? 	<ul style="list-style-type: none"> Needs clarification of budget Would need market prospecting if PPP was to be sought.

Water and Irrigation	Climate risk management and rehabilitation of small, medium and large-scale irrigation infrastructure.	<ul style="list-style-type: none"> • Good geographical identification of target provinces (Siem Reap, Banteay/Meanchey; Pursay, Battambang, Kg Thom, Kg. Chhnang, Prey Veng) • Potentially benefiting 6-8 million people. 	<ul style="list-style-type: none"> • HARD: rehabilitation of irrigation infrastructure • SOFT: capacity development of engineers 	<ul style="list-style-type: none"> • Clear alignment with floods/droughts response mandate from the PM. 	MOWRAM	USD200 Million <ul style="list-style-type: none"> • Some of the budget (relative to maintenance of infrastructure) to be assumed by domestic budget (in long run) • Further capital investment needing external support (loans?), potentially from ADB, China, India 	<ul style="list-style-type: none"> • Near Impl phase (actually this priority action seems to have entered implementation stage already; with domestic and SPCR funds) 	Priority action would already be at implementation phase (at least partially)
Infrastructure	Promoting climate proofing and retrofitting of existing and planned schools and universities infrastructure	Only target “category” (vulnerable schools and Universities) has been decided No vulnerability assessment and no clear	<ul style="list-style-type: none"> • Soft: maps, guidelines, building codes • Hard: retrofitting of existing infrastructure (buildings) 	Alignment with CCCSP and SCCSP	MOEYS <ul style="list-style-type: none"> • No clear experience in project management • No clear experience in accessing climate funds 	<ul style="list-style-type: none"> • An estimated budget of USD1,95 Million, with no detail on budget and no cost estimations at all. 	Preparation phase	Regulatory framework development (adoption of climate-proofing building code)

		identification of target (N., site)						
Water	Promoting gender responsiveness in water management, cc impact and adaptation	150 Farmer Water User Communities (FWUCs) selected at national level, 30 staff ToTtrained and expansion to about 500 members benefiting (70% women)	Soft: development of manuals and policy guidelines, delivery of trainings, capacity development, knowledge management	Alignment with CCCSP crosscutting issues (gender mainstreaming)	MOWRAM's Department of Farmer Water User Community to lead the implementation and its provincial departments with supports from department of Gender and women affair and water supply and sanitation	USD1,5 million budget estimation, seems overbudgeted for technical assistance and soft investments (need for clarification and detail)	Near Impl. phase, but need budget revision and detailing.	Need clarification of demand (ToR for technical assistance) and revision/detail of budget
Infrastructure	Build capacity on climate proofing rural infrastructure design, construction and maintenance for civil engineers (250) at national and sub-national level		Soft investments: KM mechanisms, guidelines, vulnerability assessments and mapping, etc.	Alignment with sectoral plans	MRD (in cooperation with MOWRAM)	<ul style="list-style-type: none"> • USD400.000 for 2 y. • To be checked whether the detailed activities of this project are already included in PPCR investment project developmen 	Based on CCAP fiche, the project formulation is advanced, but the budget request needs more detail.	Implementation (as components of PPCR) may have started. This needs checking.

						t. • Gov in-kind contribution of 5-10%		
Water	Improve capacity for flood and drought forecasting and modeling for technical offices at national and sub national level (ADB) GMS	Institutional targets clearly identified (for Soft investments), but geographical location for infrastructure undefined in project fiche	Aligns with PM's mandate to respond to floods/droughts risk; as well as with CCSP strategies.	Mostly soft (training, information management systems, coordination) and some hard (reservoirs, river banks' protection)	Department of Hydrology and Department of Meteorology	USD2 million, but very little detail on budget allocation needed	Project preparation. • Seems like the institution has a clear plan but needs project formulation (eg: budget, indicators, detail of activities, etc.)	Seems like a PA very necessary for the others (related to climate data) to be implemented. • Should probably be expedited
DRR	Strengthening climate information and Early Warning System	<ul style="list-style-type: none"> • Gov institutions and indirectly society-wide • No id. Of beneficiaries (number of) • Whole Meteo network, no vulnerability analysis on those that need more inv. • No assessment 	Mostly SOFT with some Hard for retrofitting and equipment (?). It is mostly capacity building.	<ul style="list-style-type: none"> • UNDP is providing equipment to repair some stations (hydrol.), with Min of Water. • UNDP has a Study on hydro network, but they are working more on hard • It is complementary project. • Short project , equip 	<ul style="list-style-type: none"> • Min of Water Resources • 2 institutions (METEO and HYDRO) who's implementer?? • At nat. and at provincial level • The hydrology inst. Is working with UNDP/GEF in the other project management • Hydr and Meteo have focal points 	<p>Guestimate: 5,5 Mil.</p> <ul style="list-style-type: none"> • No CBA of cost effectiveness • No idea • Budget estimation came from the CCAP • Not much detail on budget 	Preparation Phase, still things to figure out before they can proceed	2 years (still relevant?)

		<p>has been done on current status of the meteo and hydro stations' network</p> <ul style="list-style-type: none"> • Coverage is too large (at national level and prov level they know the shape but not at the district level) 		<p>station • Meto investment in retrofitting atation too (one!)</p>	<p>at provincial.</p> <ul style="list-style-type: none"> • Meteo is a big investment (one station concentrates most of the country), they are getting French equipment to retrofit the station 			
Health	<p>Up-scaling of National program on acute respiratory infection, diarrhea disease and cholera in disaster prone areas, including conducting surveillance and research on water-borne and food borne diseases associated with</p>	<ul style="list-style-type: none"> • Focus on rural population • No baseline • No study on impact of climate change in the disease distribution • 5 provinces are selected, focus on Great –Sub-Mekong region • Unclear if based on a vulnerab. assessment, but it's areas 	<ul style="list-style-type: none"> • SOFT investments, capacity building, Prevention policy development • Infrastructure? (Renovation of health acilities in disaster prone areas). • HARD equipment is only office equipment 	<ul style="list-style-type: none"> • WB project focusing, only starting, focusing on Env/Soc safeguards and indigenous people • ADB project focusing on capacity building • WHO initiative about climate change (capacity building) and planning on impact 	<ul style="list-style-type: none"> • 2 IPs: malaria center, and preventive medicine dep. within the MoH • PIU in those departments 	<ul style="list-style-type: none"> • Financial support so far has been mainly technical assistance, but for the country nly capacity buiging, ToT sub-national level implementat ion. • Expect international funds... • Budget definition 	Preparation phase	

	climate variables.	that are most prone to vectorborne diseases. • No info about % or number of beneficiaries.		assessment of CC into Health • CC concept is very new, a lot of mainstreaming		unclear, and potentially overestimated for the activities described (USD8M) • Different sources are merged (WHO and CCCA grant)		
DRR	(Piloting) community based disaster reduction, preparedness and response plans	<ul style="list-style-type: none"> • Location not identified. • Type of target identified • Vulnerability assessment needs to happen • TBD • Need baseline, decision about where the piloting takes place 	<ul style="list-style-type: none"> • Soft investment • Hard investments (small) 	<ul style="list-style-type: none"> • JICA funded project synergy Cap Building DRR project ADB implemented and NCDM executed. • Province level, community level. Very few communities. (Prevang, punian, Lower Mekong) 	<ul style="list-style-type: none"> • NCDM; mostly and some other Min need to cooperate (NCDD, coordinates with the subnational level and with communities 	<ul style="list-style-type: none"> • Not funded at all yet. • USD6Mil: assessment done, expert judgment, studies exist based on the detail of actions. • Only rough budget estimations. 	<ul style="list-style-type: none"> • Advanced preparation, Near Impl, phase • NCDM executes other programs? • CCA grant only • Near to ready to go, may be a low hanging fruit 	Capitalize on ADB investment project JICA project finishing in 2017 and they could capitalize on the KM materials, trainings, guidelines, etc.)

Tourism	Promote livelihood resilience through tourism development in Community Based Tourism and Community Based Eco-Tourism	Target preidentified: 10 Communities (phase 1) and 56 (phase 2 upscaling) <ul style="list-style-type: none"> • Khmer Coast line • Indirectly benefiting 10.000 local communities • No vulnerability assessment is reported 	Soft investment (promotion of Eco-tourism schemes, CBET, ASEAN Certification?)	<ul style="list-style-type: none"> • Conservation International Ecotourim pilots. • Existing CBET in Chi-Pat (Kho Kong province) 	<ul style="list-style-type: none"> • Department of Planning and development • Unclear project implementation capacity • Unlikely experience with climate funds 	<ul style="list-style-type: none"> • Estimated USD700.000 • No clarity on how the cost was estimated (no CBA or other approach reported) • The activity could generate income to communities • Could attract Dev. Partners (develop PIP?) 	<ul style="list-style-type: none"> • At preparation phase. • Needs extensive project development • Project fiche little more than presentation of an idea 	Vulnerability and economic viability assessments will be needed at the very least
Land use	Integrate climate change respond measure to commune land use planning	<ul style="list-style-type: none"> • 120 communes in provinces along the Mekong River and the Tonle Sap • Geo area: low stream of the Mekong river basin • Specific 	SOFT investments (capacity building, mapping, dev. plans, etc.)	<p>DRR activities (E.g.: in Mekong rivers)</p> <ul style="list-style-type: none"> • Hydro dam in Vietnam, key for control flooding • Link to Drought and Floods response mandate from the PM. 	<ul style="list-style-type: none"> • Ministry of Land Use would be the implementing partner • No experience in managing climate funds. • GIZ supported the Min with land registration • Coastal Zone 	<p>Estimated total cost: 1000 USD???? MISTAKE??</p> <p>Expect funds from ADB: why? Ministry is in a funds mobilization strategy...</p>	<ul style="list-style-type: none"> • Preparation phase: needs substantial project development • Ministry trying to collect data to integrate in the land use plans • Coordination 	PM order to prioritize (30K USD /per project) fixed allocation

		<p>targets, 5 provinces TBD (great sub Mekong region)</p> <ul style="list-style-type: none"> • 120 communes are considered (only a selection will engage in this activity) 			<p>committee in plane and may be part of the CC project. (EWS in connection with CC)</p>		<p>mechanisms? Btw Nat/local: staff from national level go to provinces and btw MAFF, MoE and Min of Land Use (ad-hoc)</p>	
Housing	<p>Promote the resettlement development that adapt to natural disaster at urban and rural</p>	<p>Targets for the piloting phase un-identified.</p> <ul style="list-style-type: none"> • Needs a vulnerability assessment 	<p>SOFT (inventory, guidelines, training, prototype, policy development)</p> <ul style="list-style-type: none"> • Expected impact of pilots (500 households in 100 communities) 	<ul style="list-style-type: none"> • The SPCR component on “Mainstreaming climate resilience into Dev planning”, includes TA for risk screening tools in urban settings 	<p>MLMUPC (Gnal dept of Housing)</p> <ul style="list-style-type: none"> • Seeking partnerships with local authorities 	<ul style="list-style-type: none"> • USD 2 million • No costing, no detailed budget 	<p>Preparation Phase</p>	
Rubber	<p>Promoting, piloting and scaling-up rubber clones from IRRBD (International Rubber Research</p>	<ul style="list-style-type: none"> • Target has been clearly identified: pilot (Kampong Cham); trial replication network in 5 	<ul style="list-style-type: none"> • Mostly hard (introduction of resilient clones for rubber production): piloting, replication and 	<ul style="list-style-type: none"> • Yes, an international network exists International Rubber Research Development Board 	<p>Rubber research Institute (RRIC) • General Directorate of Rubber (GDR), MAFF • Provincial authorities</p>	<ul style="list-style-type: none"> • USD1,97 million over 5 years • Financially profitable activity: ROI estimated (USD 20,4 	<p>Near Impl. Phase</p>	<p>Coordination between MAFF and producers (Rubber Planters Association in rubber</p>

	Development Board) member country in responding to climate change.	AEZ (2 provinces, 10 sites: Kg. Thom, Koh Kong, RKR, etc.) • Training of 1750 rubber planters	up-scaling • And some soft (KM, training, guidelines)	implementing similar projects in the region		million) • Cost-estimation provides some detail • Co-financing has already been identified (IRRDB)		Estates) • Staff in place
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CAMEROON

ADAPTATION PRIORITY PROJECTS :

PROJECT TITLE	MISE EN PLACE D'UN SYSTEME D'OBSERVATION, DE GESTION DES INFORMATIONS ET D'ALERTE SUR LES RISQUES CLIMATIQUES AU CAMEROUN
SECTOR	n/a
CONTEXT	<p>Au Cameroun, les changements climatiques se manifestent entre autres par des inondations, des sècheresses de plus en plus récurrentes et catastrophiques, des vents violents, des tempêtes de sable et de la brume sèche. Ils affectent l'ensemble des secteurs du pays. Le caractère de plus en plus brutal de ces aléas est surprenant pour les communautés et les décideurs, qui se retrouvent bien souvent démunis. L'absence de prévision de ces aléas augmente la vulnérabilité du pays. Le système d'observation climatique est en nette dégradation : sur 58 stations météorologiques fonctionnelles, 3 stations seulement fonctionnaient en 2011. Le MINEPDED, avec l'appui du PNUD, a installé 20 nouvelles stations dans le cadre du programme japonais Cool Earth Partnership. La prévision météorologique à l'échelle du pays et le système d'alerte sont inexistants, ce qui contribue à amplifier les dommages parfois observés. Par ailleurs, les connaissances sur les changements climatiques ne sont pas assez structurées (d'après l'étude d'analyse des parties prenantes et évaluation des capacités d'adaptation aux CC), et mériteraient donc une meilleure organisation afin d'être mieux diffusées et utilisées par les acteurs économiques et sociaux du Cameroun. Face à ce manque structurel dans le pays, les agro-industries comme la CDC, la SOCAPALM, SODECOTON, la SEMRY, les sociétés de bananeraie du Littoral disposent de réseaux d'observation météorologiques propres qui leur fournissent un certain nombre d'informations sur certains paramètres climatiques. Une coopération publique-privée pour assurer la consolidation et la coordination de ces observations permettrait de construire un système d'alerte et ainsi faire bénéficier au plus grand nombre de meilleures capacités d'adaptation. Ainsi, l'objectif de ce projet est de tirer profit de tout le potentiel de réseau de stations existantes et de réhabiliter celles qui sont défectueuses pour mettre en place un système d'observation et d'information climatique appropriée au niveau national et au niveau de chaque zone agro écologique.</p>
OVERALL OBJECTIVES	Améliorer la collecte des données climatiques, météorologiques et hydrologiques et organiser leur diffusion et leur appropriation auprès des acteurs du pays afin qu'ils puissent s'adapter aux changements climatiques.
SPECIFIC OBJECTIVES	<ul style="list-style-type: none"> • Mettre en place un système optimal de collecte d'information climatique et hydrologique opérationnel et efficace au niveau de chaque zone agro écologique • Vulgariser les connaissances climatiques, météorologiques et hydrologiques au Cameroun à des fins d'adaptation au changement climatique
ACTIVITIES	- Réhabilitation des stations météorologiques et hydrologiques défectueuses ou installation des nouvelles stations dans le réseau de suivi hydrométéorologique national.

	<ul style="list-style-type: none"> - Réalisation d'un état des lieux des stations/postes météorologiques ou hydrologiques du réseau SODECOTON et SEMRY, etc. En particulier, une évaluation de leur fonctionnement sera réalisée et un partenariat sera négocié en vue de l'exploitation des données dans le cadre du programme. - Mise en œuvre d'un système permettant de mieux évaluer les dommages associés aux évènements extrêmes. - Mise en place d'un système de prévision météorologique et hydrologique adapté aux besoins des populations notamment, des agriculteurs, des éleveurs, des pêcheurs, des commerçants et des transporteurs. - Rendre les bases de données accessibles à toutes les parties prenantes. - Mettre en place des systèmes d'Alerte précoce des populations en cas de l'imminence des risques climatiques. Des outils comme la radio, la télévision, la presse et les réseaux d'information communautaire. - Renforcement des capacités : (a) Formation et renforcement des capacités des personnels dans le domaine de la météorologie et de la climatologie; (b) Renforcement des capacités des radios communautaires sur la diffusion et la vulgarisation des informations météorologiques et hydrologiques.
TARGET ID (TARGET AREAS; BENEFICIARIES) SYNERGIES	n/a
IMPLEMENTERS	<p>Axe stratégique 1</p> <p>Pilote de l'action : MINTRANSPORT (Mise en place d'un système d'observation), MINATD (Alerte), MINEPDED (gestion des informations)</p> <p>Partenaires : ASECNA, secteur privé (SODECOTON, SEMRY, etc.), Ministères sectoriels (MINADER, MINEPAT, MINEE, MINESUP, MINRESI, MINEPIA), Maires, Communautés urbaines, média</p>
INDICATORS	<ul style="list-style-type: none"> - Nombre de stations météorologiques et hydrologiques fonctionnelles (au moins une dans chaque département) - Nombre d'articles scientifiques et de rapports ou de communications sur les évènements climatiques futurs et sur leurs dommages associés. - Existence d'un système de prévision météorologique et hydrologique - Existence de magazine, journaux, des émissions radio ou télévision spécialisées dans la diffusion de l'information climatique (bulletins météo) - Existence des relais régionaux, départementaux, communaux et locaux (quartiers ou village) de l'alerte - Existence d'une base de données centralisée et accessible à tous - Nombre de personnel formés/recyclés disponible.
TIMELINE	Projet de 5 ans : 2016-2020

COSTS	EUR 2 millions
FINANCIAL RESOURCES	PNUD, etc. (voir étude sur les options de financement de l'adaptation)

PROJECT TITLE	ACTUALISATION DU PLAN NATIONAL DE CONTINGENCE AU CAMEROUN ET OPERATIONNALISATION DU FONDS D'URGENCE
SECTOR	n/a
CONTEXT	La fréquence de plus en plus élevée d'événements climatiques extrêmes (inondations, glissement de terrain, vents violents, sécheresses), et leurs impacts sur les hommes et les écosystèmes sont de plus en plus préoccupants. Or il a été observé qu'en cas de catastrophes, les interventions sur le terrain initiées par les bénévoles, les ONG et même par les pompiers et les forces de maintien l'ordre sont à la fois tardives et désordonnées. Il existe pourtant le plan ORSEC qui vise à organiser la réponse en cas de catastrophe naturelle. L'absence d'intégration des aspects climatiques dans le plan ORSEC augmente la vulnérabilité du pays aux changements climatiques. Par ailleurs, ces interventions sont également confrontées au manque de moyens financiers, matériels et logistiques appropriés. Lors de catastrophes climatiques, le saupoudrage des moyens et des actions limite fortement la capacité d'absorption des aléas climatiques du pays. Ainsi, l'objectif de ce projet est de renforcer le plan d'intervention autour de la Direction de la Protection civile du MINADT.
OVERALL OBJECTIVES	Améliorer la résilience aux changements climatiques du Cameroun en renforçant et en actualisant le plan National de contingence et par l'opérationnalisation du fonds d'urgence
SPECIFIC OBJECTIVES	<ul style="list-style-type: none"> • Réviser le plan National de contingence • Appui aux institutions en charge de la gestion des catastrophes à travers l'opérationnalisation du fond d'urgence.
ACTIVITIES	<ul style="list-style-type: none"> - Actualiser le Plan National de Contingence. - Renforcer les capacités des Comités Mixte de Crise régionaux et départementaux. - Élaboration pour tous les Départements de Plans d'Organisation des Secours (ORSEC). - Opérationnalisation du fonds d'urgence. - Contribution au financement du Fond de soutien par les partenaires nationaux et internationaux.
TARGET ID (TARGET AREAS; BENEFICIARIES)	n/a

SYNERGIES	Axe stratégique 4 (ce projet permet d'intégrer les changements climatiques au plan ORSEC)
IMPLEMENTERS	Pilote de l'action : Direction de la Protection civile du MINADT en collaboration avec le MINEPDED et le MINFI. Partenaires : Ministères sectoriels, services du gouverneur, comités régionaux et départementaux, mairies, communautés urbaines, chefs traditionnels, OSC, parlementaires, les religieux.
INDICATORS	<ul style="list-style-type: none"> - Existence d'un plan de contingence national opérationnel mis à jour, de plans ORSEC et d'urgence pour chaque Département - Capacités des Comités Mixte de Crise régionaux et départementaux améliorées - Temps de réaction en cas de crise amélioré - Fonds d'urgence opérationnel - Disponibilité des fonds
TIMELINE	Projet de 4 ans : 2016-2019
COSTS	EUR 2 millions
FINANCIAL RESOURCES	Voir étude sur les options de financement de l'adaptation

PROJECT TITLE	PRISE EN COMPTE DES RISQUES CLIMATIQUES DANS L'ACTUALISATION DU PLAN D'AFECTATION DES TERRES
SECTOR	n/a
CONTEXT	Les risques climatiques obligent les populations rurales à rechercher les points d'eau pour les cultures de subsistance ou pour la nourriture du bétail. Parfois elles n'hésitent pas à envahir les aires protégées, ce qui est à l'origine de multiples conflits agro-sylvo-pastoraux. Cette situation est aggravée par l'accaparement des terres par certaines élites qui pourtant ne les mettent pas en valeur, multipliant ainsi les situations de paysans sans terre. Il est urgent de réactualiser les plans d'affectation des terres en vue d'une meilleure gestion de ces espaces.
OVERALL OBJECTIVES	Améliorer la résilience des populations aux effets du changement climatique en les intégrant dans les Plans d'Affectation des Terres

SPECIFIC OBJECTIVES	<ul style="list-style-type: none"> • Élaborer un plan d'affectation des terres au niveau national
ACTIVITIES	<ul style="list-style-type: none"> - Réalisation de la cartographie de l'occupation des sols au Cameroun et régional. - Évaluation des besoins en terre actuels et futurs suivant les principales utilisations de l'espace. - Établissement d'un schéma directeur d'aménagement global du Cameroun et régional avec prise en compte de la composante changement climatique. - Établissement d'un plan de zonage national décliné de façon détaillé au niveau des zones agro écologiques, des régions et des communes. - Mise en place d'un système d'information, de gestion de l'affectation des terres.
TARGET ID (TARGET AREAS; BENEFICIARIES)	n/a
SYNERGIES	Axe stratégique 4
IMPLEMENTERS	<p>Pilote de l'action : MINCAF, MINEPAT</p> <p>Partenaires : MINEPDED, MINFOF, MINIMIDT, MINEPIA, MINADER, collectivités locales décentralisées, les agro-industries et organisme de développement (la SODECOTON, la SEMRY, la MEADEN, le MIDIMA, UNDVP, SOCAPALM, CDC)</p>
INDICATORS	<ul style="list-style-type: none"> - Nombre et qualité des cartes d'occupations des sols à diverses échelles - Existence d'une évaluation des besoins futurs en terres suivant les grandes utilisations - Diffusion par au moins deux canaux du schéma directeur d'aménagement national et des zones - Nombre de plans de zonage au niveau national (aires protégées, forêts communautaires, terrains de parcours, etc.), des zones agro écologiques, des régions et des communes
TIMELINE	Projet de 5 ans : 2016-2020
COSTS	EUR 3 millions
FINANCIAL RESOURCES	Voir étude sur les options de financement de l'adaptation

PROJECT TITLE	SENSIBILISATION DE LA POPULATION, DES PROFESSIONNELS, DES ADMINISTRATIONS ET DES DECIDEURS SUR LES EFFETS DES CHANGEMENTS CLIMATIQUES ET SUR LES MESURES A PRENDRE
SECTOR	n/a
CONTEXT	Les enquêtes terrain et les consultations menées pendant le processus PNACC ont montré que la grande majorité des populations et des décideurs sont encore ignorante des questions de changements climatiques. Cette faiblesse ne permet pas de minimiser les impacts lors des événements climatiques extrêmes ni de savoir ce qu'il faut faire en cas de risques climatiques. La situation semble plus préoccupante dans le monde rural en raison de la limitation de l'accès à l'information. La sensibilisation sur les changements climatiques s'impose donc comme une action prioritaire du PNACC.
OVERALL OBJECTIVES	Sensibiliser les acteurs (autorités locales et nationales) et les populations camerounaises en vue d'améliorer leur résilience aux effets du changement climatique
SPECIFIC OBJECTIVES	<ul style="list-style-type: none"> • Mettre à jour la stratégie de communication sur le changement climatique pour informer le grand public • Diffuser les bonnes pratiques d'adaptation à mettre en œuvre • Sensibiliser les élus aux changements climatiques et à la prise de décision pour améliorer la résilience de leurs territoires
ACTIVITIES	<ul style="list-style-type: none"> - Élaboration et diffusion des supports de communication et de vulgarisation sur les changements climatiques (dépliants, documentaires, spots, communiqués, sites Web). - Vulgarisation des notions de changements climatiques et des notions associées à travers les masses média, les rencontres par les relais locaux, dignitaires religieux et leaders d'associations, SMS, et internet. - Vulgarisation des bonnes pratiques en matière d'adaptation aux changements climatiques à travers les masses média les rencontres par les relais locaux, dignitaires religieux et leaders d'associations, SMS, et internet. - Large diffusion des communications sur les changements climatiques auprès du grand public. - Formation des élus aux changements climatiques et aux mesures d'adaptation à prendre.
TARGET ID (TARGET AREAS; BENEFICIARIES)	n/a
SYNERGIES	Axe stratégique 2
IMPLEMENTERS	Pilote de l'action : MINEPDED Partenaires : Ministères sectoriels et trans-sectoriels (MINESUP, MINCOM, MINESEC, MINADER, MINEPAT, MINATD, MINIMIDT, MINTRANSPORT, MINRESI), Mairies, Communautés urbaines, médias publics et privés de toute nature
INDICATORS	<ul style="list-style-type: none"> - Nombre de supports produits pour la sensibilisation aux changements climatiques (dépliants, documentaires, spots, communiqués, sites Web)

	<ul style="list-style-type: none"> - Nombre de personnes sensibilisées - Nombre de séminaires de sensibilisation organisés - Nombre d'organes de liaison spécialisés sur le Changements climatiques (bulletins d'information, magazine, journaux) à bonne fréquence - Nombre des émissions radio ou télévision spécialisées dans la diffusion de l'information climatique - Nombre de personnes ayant consulté le site sur les changements climatiques - Nombre de relais régionaux, départementaux, communaux et locaux (quartiers ou village).
TIMELINE	Projet de 4 ans : 2016-2019
COSTS	EUR 2 millions
FINANCIAL RESOURCES	Voir étude sur les options de financement de l'adaptation

PROJECT TITLE	PROTECTION DU LITTORAL CONTRE LES EFFETS DES CHANGEMENTS CLIMATIQUES
SECTOR	n/a
CONTEXT	La variabilité climatique soumet les côtes camerounaises à des phénomènes d'érosion côtière, engendrant la destruction des habitations et des infrastructures. Les taux de recul de la ligne de côte observés varient selon les situations et les processus en jeu. Par ailleurs, la hausse constatée du niveau de la mer et la variation des débits des cours d'eau pourraient aussi entraîner des intrusions salines dans les rivières, les nappes phréatiques et les sols. Ces processus pourraient également engendrer la dégradation des restes de mangroves ayant échappé à la pression humaine (urbanisation, recherche de bois de chauffe, agriculture). Dès lors, il devient nécessaire de réduire les causes humaines et de prévenir certaines conséquences des causes naturelles par la mise en œuvre d'un programme de protection du littoral.
OVERALL OBJECTIVES	Prendre en compte de l'élévation du niveau de la mer dans l'aménagement du littoral
SPECIFIC OBJECTIVES	<ul style="list-style-type: none"> • Promouvoir des techniques adaptées à la protection du trait de côte • Sensibiliser les populations côtières à la protection du rivage

	<ul style="list-style-type: none"> • Veiller à l'application de la réglementation en vigueur relative à l'occupation de la zone côtière • Renforcer les capacités en matière de protection et de restauration des mangroves.
ACTIVITIES	Promotion des techniques de protection du trait de côte à moindre coût. / Application de la réglementation en vigueur (études d'impact, loi foncière, loi sur l'eau). / Restauration et protection de la mangrove. / Vulgarisation de la protection du rivage. / Vulgarisation et utilisation des fumoirs améliorées.
TARGET ID (TARGET AREAS; BENEFICIARIES)	n/a
SYNERGIES	Axe stratégique 3
IMPLEMENTERS	Pilote de l'action : Comité de coordination MINEPDED, MINDEF, MINEPIA, MINEPAT et MINDCAF Partenaires : Ministères sectoriels (MINEPDED, MINDCAF, MINTP, MINEE, MINRESI, MINTOUL), Mission de Développement de l'Océan, société civile, CTD, Autorités portuaires
INDICATORS	Longueur du trait de côte protégé contre l'érosion, Proportion de la zone côtière réglementée au plan de l'occupation et de l'utilisation des sols Nombre de permis de bâtir octroyé dans la zone côtière Superficie de mangroves restaurées Nombre de personnes sensibilisées
TIMELINE	Projet de 4 ans : 2016-2020
COSTS	EUR 10 millions
FINANCIAL RESOURCES	Voir étude sur les options de financement de l'adaptation

PROJECT TITLE	ADAPTATION DES REFERENTIELS TECHNIQUES DE CONSTRUCTION DES INFRASTRUCTURES AUX EFFETS DES CHANGEMENTS CLIMATIQUES
SECTOR	Infrastructures

CONTEXT	<p>Le changement climatique aura un impact sur les infrastructures dans tout le pays en raison de la large gamme et répartition des risques, y compris l'élévation du niveau de la mer, l'augmentation de la fréquence et la gravité des ondes de tempête, l'augmentation des inondations associées à des événements de fortes précipitations et des vents violents ; l'aggravation de la sécheresse. En outre, si les impacts du changement climatique vont provoquer la réduction du PIB national comme prévu, cela peut provoquer la diminution des financements disponibles à la construction et la rénovation des infrastructures. Dans le sous secteur routier, les orientations stratégiques à moyen et long termes du Gouvernement à l'horizon de la stratégie sont cohérentes avec le scénario ambitieux du Plan Directeur Routier et la stratégie sectorielle élaborés. Les opérations d'entretien routier vont permettre, à l'horizon de la stratégie, d'améliorer nettement le niveau de service (55% du réseau en bon état), grâce à la mise en place d'une stratégie pertinente d'intervention. Les priorités d'intervention concerneront l'accompagnement des grands projets industriels et agro-pastoraux, les corridors régionaux (transafricaine, corridors nord-sud, réseau CEMAC), le réseau des routes nationales, ainsi que les grands projets d'infrastructure d'accompagnement au secteur privé (second pont sur le Wouri, boucle autoroutière Yaoundé-Douala-Bafoussam-Yaoundé). Une approche multimodale sera systématiquement privilégiée, afin de bâtir à moindre coût un réseau de transport intégré, performant, quadrillant tout l'espace national et résolument ouvert vers les pays voisins. Le Gouvernement mettra l'accent sur l'aménagement de nouvelles infrastructures portuaires et ferroviaires qui accompagneront les projets prioritaires porteurs de croissance.</p>
OVERALL OBJECTIVES	<p>Adapter les référentiels techniques de construction et d'entretien des infrastructures aux effets possibles des changements climatiques</p>
SPECIFIC OBJECTIVES	<ul style="list-style-type: none"> • Élaborer une méthodologie harmonisée pour réaliser les diagnostics de vulnérabilité des infrastructures aux changements climatiques • Modifier les référentiels techniques et l'ingénierie de construction en les adaptant au contexte de changement climatique • Renforcer les capacités de l'ANOR dans le contrôle de la qualité des matériaux de construction, qu'ils soient importés ou produits localement • Renforcer les dispositifs de contrôle et de suivi de l'exécution des travaux de construction
ACTIVITIES	<ul style="list-style-type: none"> - Élaboration d'une méthodologie harmonisée pour diagnostiquer la vulnérabilité des infrastructures aux changements climatiques des infrastructures. - Adaptation et vulgarisation des référentiels techniques de construction et d'entretien des infrastructures aux effets possibles des changements climatiques. - Renforcement des capacités institutionnelles, organisationnelles, humaines et logistiques de l'ANOR dans le contrôle de la qualité des matériaux de construction. - Renforcement des capacités d'intervention des missions de contrôle de l'exécution des travaux de construction.
TARGET ID (TARGET AREAS; BENEFICIARIES)	<p>n/a</p>

SYNERGIES	Axe stratégique 3 et 4
IMPLEMENTERS	Pilote de l'action : MINTP, MINEPAT, MINMAP et ONACC Partenaires : MINTRANSPORT, MINRESI, MINESUP, MINEPDED, MINCOMMERCE, MINADER, MINEE, MINEPIA, MINPMEESA, ARMP, CONSUPE, MINDEF, Missions de développement et d'aménagement régional, Entreprises de routes, bâtiments BTP, CTD, Ordre National des Ingénieurs de Génie Civil, ADC, Office National des Ports du Cameroun (ONPC)
INDICATORS	<ul style="list-style-type: none"> - Méthodologie harmonisée disponible sur la réalisation des diagnostics de vulnérabilités des infrastructures - Nombre de référentiels techniques actualisés - Plan de communication mis en œuvre - Capacités de l'ANOR renforcées - Capacités des missions de contrôle de l'exécution des infrastructures renforcées - Qualité des infrastructures routières et ferroviaires
TIMELINE	Projet de 3 ans, 2016-2019
COSTS	EUR 2 millions
FINANCIAL RESOURCES	MINTP, MINEPAT, MINMAP, MINDEF et coopération multilatérale

PROJECT TITLE	REDUCTION DE LA VULNERABILITE DES POPULATIONS URBAINES AUX EFFETS DES CHANGEMENTS CLIMATIQUES
SECTOR	Urban areas
CONTEXT	L'activité des villes est aujourd'hui identifiée comme l'un des moteurs du développement économique national. La ville participe en effet à hauteur de 55% au PNB et abrite plus de 50% de la population (3eme RGPH, 2005). Le Cameroun connaît une urbanisation rapide, avec plus de 54% de la population vivant en milieu urbain en 2010. Toutefois, la question des logements et de la fourniture des infrastructures essentielles se posent avec acuité tant en zone urbaine compte tenu de la pauvreté des populations. Il faut y ajouter la précarité des logements. Le changement climatique aura un impact économique sur les logements dans tout le pays en raison de la large gamme et répartition des risques, y compris l'élévation du niveau de la mer, l'augmentation

de la fréquence et la gravité des ondes de tempête, l'augmentation des inondations associées à des événements de fortes précipitations et des vents violents ; l'aggravation de la sécheresse. En outre, si les impacts du changement climatique vont provoquer la réduction du PIB national comme prévu, cela peut provoquer la diminution des financements disponibles à la construction et la rénovation de logements. Dès lors, il s'agit non seulement de maîtriser le développement des villes (taux d'urbanisation de 57,3% en 2020) et d'en faire des centres de production et de consommation nécessaires à l'essor du secteur industriel, mais également de promouvoir l'émergence des agglomérations périphériques, le développement des villes moyennes ou secondaires capables de structurer les activités économiques dans l'espace urbain et de concourir au développement des zones rurales environnantes. Il est nécessaire de réduire la vulnérabilité des populations urbaines aux effets des changements climatiques par la mise en œuvre d'outils réglementaires et opérationnels appropriés.

OVERALL OBJECTIVES

Améliorer la résilience des populations urbaines aux effets des changements climatiques

SPECIFIC OBJECTIVES

- Actualiser les documents de planification urbaine (PDU, PSU, POS) en tenant compte des effets des changements climatiques
- Élaborer des plans d'action d'adaptation aux changements climatiques pour les zones urbaines, en particulier celles plus exposées aux risques climatiques (Douala, Yaoundé, Maroua, Bafoussam, Bamenda) et les intégrer aux plans de développement locaux (PDL)
- Actualiser les normes techniques de construction d'habitat en tenant compte des effets des changements climatiques
- Sensibiliser et former les populations urbaines sur la nécessité du respect des prescriptions et normes de construction en milieu urbain
- Promouvoir les logements sociaux et les matériaux locaux adaptés
- Mettre en place un système d'information rapide en cas de catastrophes en milieu urbain
- Aider les collectivités à réduire la vulnérabilité grâce à une planification participative de l'utilisation des terres et des logements

ACTIVITIES

- Actualisation des SDAU et des documents de planification urbaine en tenant compte les effets du changement climatique.
- Actualisation des référentiels techniques de construction de l'habitat en tenant compte des effets des changements climatiques.
- Sensibilisation des populations aux respects des normes et prescriptions de construction.
- Promotion des logements sociaux et des matériaux locaux adaptés.
- La promotion de l'accès au crédit foncier/ crédit d'habitat.
- Mise en place des systèmes d'intervention rapide en cas de
- Élaboration des plans d'action d'adaptation aux changements climatiques pour les zones urbaines, en particulier celles plus exposées aux risques climatiques (Douala, Yaoundé, Maroua, Bafoussam, Bamenda) et les intégrer aux plans de développement locaux (PDL).
- Aide aux collectivités dans la réduction de la vulnérabilité grâce à une planification participative de l'utilisation des terres et des logements.

	- Renforcer les agglomérations rurales afin de réduire l'exode rural massif vers les villes.
TARGET ID (TARGET AREAS; BENEFICIARIES)	n/a
SYNERGIES	Axe stratégique 3 et 4
IMPLEMENTERS	Pilote de l'action :MINHDU Partenaires :MINEPDED, MINDCAF, MINTP, MINEPAT, MINATD, MINEE, MINDEF, MINRESI, MINESUP, OSC, ONG, Maître d'Ouvrage, CTD, MAETUR, Ordre National des Urbanistes et des Architectes, MIPROMALO
INDICATORS	<ul style="list-style-type: none"> - Nombre de documents de planification urbaine tenant compte des changements climatiques élaborés - Nombre de référentiels techniques révisés ou élaborés - Pourcentage de constructions adaptées au CC - Taux d'accès au crédit foncier/ crédit habitat - Nombre de villes disposant des systèmes d'intervention rapide en cas de catastrophes
TIMELINE	Projet de 5ans, 2015-2020
COSTS	EUR 2 millions
FINANCIAL RESOURCES	MINFI, MINDHU, Crédit foncier, Banques commerciales, Les communes, PNDP, FEICOM, ONU-Habitat, Don Japonais, Partenaires au développement

PROJECT TITLE	AMELIORATION DE LA GOUVERNANCE FONCIERE LOCALE EN REPONSE AUX CHANGEMENTS CLIMATIQUES
SECTOR	Gouvernance foncière

CONTEXT	<p>Le foncier est au cœur de l'adaptation aux changements climatiques dans la mesure où la terre est le support de développement des activités de production et de certaines mesures d'adaptation (plantations d'arbres, protection des périmètres de captage des eaux). L'insécurité foncière liée tant à la forte pression démographique, à la dégradation des terres arables dans certaines régions du pays, qu'aux inégalités dans l'accès à la terre exacerbe la vulnérabilité de certaines catégories sociales aux effets néfastes des changements climatiques, amplifiant des risques de conflits sociaux. La désertification et la dégradation progressive des terres, consécutives aux changements climatiques privent les communautés d'un important facteur de production. La baisse de la productivité des terres accentue les risques d'insécurité alimentaire et les rivalités entre groupes sociaux dans l'utilisation de l'espace. En l'absence d'un plan de zonage précisant les formes d'occupation et d'utilisation des sols, il manque de lisibilité et d'équité sociale dans la gouvernance foncière au Cameroun. La mise en œuvre des initiatives communautaires de gestion durable des ressources est plombée par l'absence de réserves foncières. Dans un tel contexte, il paraît urgent d'améliorer la gouvernance foncière locale en vue de rationaliser l'utilisation de l'espace.</p>
OVERALL OBJECTIVES	<p>Améliorer la gouvernance foncière locale pour une gestion durable, participative et équitable des terres dans un contexte de changement climatique</p>
SPECIFIC OBJECTIVES	<ul style="list-style-type: none"> • Améliorer l'implication des leaders et élus locaux dans la gouvernance foncière • Assurer la participation des communautés locales, des peuples autochtones, des femmes rurales et des jeunes dans la gestion des terres • Procéder à un zonage multi scalaire précisant les formes d'occupation et d'utilisation des sols par la cartographie participative • Renforcer les mécanismes locaux de sécurisation des droits d'usage et d'accès à la propriété foncière des principaux acteurs, notamment pour les peuples autochtones et les femmes rurales • Renforcer l'application des textes législatifs et réglementaires existantes en matière de gestion foncière • Reconstituer des réserves de terres communautaires et communales par la cartographie participative • Promouvoir l'utilisation de la cartographie participative comme outil de négociation et de planification des terres
ACTIVITIES	<ul style="list-style-type: none"> - Révision des dispositions règlementaires en vue d'améliorer l'implication des différents acteurs dans la gouvernance foncière. - Zonage participatif et multi scalaire précisant les formes d'occupation et d'utilisation des sols. - Renforcement et développement des mécanismes locaux de sécurisation des droits d'usage et d'accès à la propriété foncière des différents groupes d'acteurs y compris les groupes vulnérables et les minorités (peuples autochtones et femmes rurales notamment). - Renforcement des capacités de tous les groupes d'acteurs dans la cartographie participative
TARGET ID (TARGET AREAS; BENEFICIARIES)	<p>n/a</p>
SYNERGIES	<p>Axe stratégique 2 et 4</p>

IMPLEMENTERS	Pilote de l'action :MINDCAF, MINATD, MINEPAT Partenaires :MINEPDED, MINFOF, MINADER, MINEPIA, MINIMIDT, MINEE, MINAS, MINPROFF, CTD, OSC, Partenaires au développement
INDICATORS	<ul style="list-style-type: none"> - Signature du décret d'application de la loi sur l'aménagement du territoire - Signature du décret d'application sur l'accès à l'information environnementale - Signature du décret d'application du code pastoral - La finalisation de la réforme foncière et forestière en cours / Nombre de personnes par groupe d'acteurs ayant pris part dans les différents processus d'acquisition et d'attribution des terres - Documents de Plan de zonage élaborés et approuvés - Cartographies participatives élaborées au niveau Communautaire - Nombre d'accords conclu et mis en œuvre pour sécuriser les droits d'usage de différents groupes d'acteurs - Document officiel sur les mécanismes d'accès à la propriété foncière pour les PA et les femmes rurales élaboré
TIMELINE	Projet de 5 ans, 2015-2020
COSTS	EUR 2 millions
FINANCIAL RESOURCES	MINDCAF, MINATD, MINEPAT, MINAS, MINEPDED et coopération bilatérale

PROJECT TITLE	CHANGEMENTS CLIMATIQUES ET GESTION INTEGREE DE DECHETS
SECTOR	Gestion de déchets
CONTEXT	En déstabilisant les modes de production traditionnelle, les changements climatiques ont induit entre autres un exode rural massif. Ainsi les villes camerounaises accueillent 50% de la population (estimation 2010) et compteront environ 58% en 2020. Il en résulte que la quantité de déchets produits n'en sera que plus importante d'autant que cet accroissement démographique ne s'est pas accompagné d'un accroissement des moyens de ramassage et de traitement des déchets. De même, les populations ne savent pas faire le tri des ordures et d'énormes quantités de déchets ménagers bio dégradables ou non continuent à échapper à la maîtrise des autorités. Il est à noter que malgré les efforts effectués sur le plan de traitement des déchets, tous les déchets ne

ont pas recyclables. En conséquence, limiter les émissions de Gaz à Effet de Serre, c'est orienter les déchets vers le traitement qui est approprié compte tenu de leur nature. Le Compostage peut être une bonne solution pour la valorisation des déchets organiques. En effet, le compost produit peut être valorisé comme amendement organique, engrais organique ou support de culture (terreau), en agriculture au sens large. De même, la méthanisation produit du biogaz contenant du méthane qui peut être récupéré presque totalement et valorisé sous forme de chaleur, d'électricité ou même de carburant. C'est dire que la gestion des déchets ouvre la voie à un traitement mécano-biologique (ou MBT, pour Mechanical and Biological Treatment en anglais) qui couvre plusieurs combinaisons de procédés de traitement des déchets ménagers et assimilés résiduels ayant en commun deux grandes étapes : une préparation mécanique permettant de séparer les déchets organiques des non-organiques ; un traitement par compostage ou méthanisation des déchets organiques séparés. Les déchets non organiques pouvant être valorisés sous forme de matières premières secondaires ou énergétiquement. Le MBT permet en effet de préparer des combustibles solides de récupération (CSR ou RDF « Refuse Derived Fuel »).

OVERALL OBJECTIVES	Améliorer la gestion durable et participative des déchets pour réduire les impacts négatifs liés aux changements climatiques
SPECIFIC OBJECTIVES	<ul style="list-style-type: none"> • Mettre en place un système législatif et réglementaire contraignant en matière de traitement, de recyclage ou d'évacuation/élimination des déchets • Renforcer les capacités techniques, financières et organisationnelles des collectivités locales décentralisées et des populations dans le traitement et la gestion des déchets • Développer les techniques de gestion des déchets au niveau communautaire : compostage, recyclage, etc. • Développer les techniques de gestion des déchets industriels et hospitaliers
ACTIVITIES	Vulgarisation et renforcement des capacités de tous les acteurs pour une application effective des textes sur la gestion des déchets et l'adoption des bonnes pratiques. / Renforcement des capacités techniques, financières et organisationnelles des collectivités locales décentralisées dans le traitement et la gestion des déchets. / Renforcement des capacités techniques, financières, opérationnelles et institutionnelles des populations dans le domaine de la gestion des déchets. / Développement des techniques de gestion des déchets au niveau communautaire : compostage, recyclage, etc. / Développement des techniques de gestion des déchets industriels et hospitaliers. / Renforcement du nombre de bacs de collecte des ordures organiques et inorganiques
TARGET ID (TARGET AREAS; BENEFICIARIES)	n/a
SYNERGIES	Axe stratégique 2, 3 et 4

IMPLEMENTERS	Pilote de l'action :MINEPDED Partenaires : MINEE, MINHDU, MINSANTE, MINIMIDT, MINTRANSPORT, MINRESI, MINATD, HYSACAM,SONARA, SNH, ALUCAM, OSC, partenaires de développement
INDICATORS	Nombre de programmes/projets exécutés sur le renforcement des capacités techniques et opérationnelles des différents groupes d'acteurs Supports de vulgarisation, d'information et de sensibilisation des textes produits Nombre d'initiatives technologiques développées en matière de gestion des déchets Nombre de bacs de collecte des ordures organiques et inorganiques Nombre d'entreprises disposant d'un permis environnemental de gestion des déchets Volume des déchets recyclés et/ou compostés au niveau communautaire Absence de tas d'immondices dans les villes et d'amas de plastique dans les cours d'eau
TIMELINE	Projet de 5 ans, 2015-2020
COSTS	EUR 10 millions
FINANCIAL RESOURCES	MINHDU, MINEPDED, MINRESI, MINEE, MINEPAT, MINSANTE, HYSACAM, partenaires au développement

PROJECT TITLE	DIVERSIFICATION DE L'OFFRE ENERGETIQUE DANS UN CONTEXTE DE CHANGEMENT CLIMATIQUE
SECTOR	Énergie
CONTEXT	Au Cameroun, la consommation énergétique est dominée à plus de 60 % par l'énergie traditionnelle, principalement le bois de chauffe. L'électricité représente environ 14 % de la consommation énergétique totale. L'approvisionnement en électricité est essentiellement d'origine hydraulique et est fourni par les trois principales centrales hydroélectriques que sont Edéa, Song Loulou et Lagdo. La production actuelle de ces centrales hydroélectriques, qui ne représente que 3 % du potentiel hydroélectrique économiquement «équitable», reste en deçà des besoins énergétiques du pays. Or la fourniture de cette énergie est largement déficitaire et justifie de nombreux délestages et le rationnement fréquemment observés. Ce déficit est justifié par de fréquents étages liés aux sécheresses. Par ailleurs, la demande urbaine et rurale en bois de feu et en charbon de bois est un facteur

important du déboisement du territoire, ce qui aurait des rétroactions négatives sur les systèmes climatiques. Pourtant, les résidus de récoltes et autres déchets ruraux et urbains, animaux ou végétaux, ménagers ou industriels, sont de bonnes sources d'énergie non valorisées dans la plupart des communautés. Partout où les déchets sont disponibles, leur méthanisation par des techniques simples permettrait aux masses populaires de disposer de biogaz, source d'appoint utilisable pour couvrir de nombreux besoins énergétiques. Pour résorber le déficit énergétique et évoluer vers l'atteinte des objectifs de croissance escompté, le gouvernement, dans le cadre de la mise en œuvre du DSCE, entend investir dans la réalisation et l'entretien des infrastructures de production (barrages hydro-électriques, centrales thermiques et à gaz), la finalité étant de porter la capacité de production nationale à 3 000 MW à l'horizon 2020. Dans ce cadre, très peu d'actions sont envisagées dans le secteur du bois énergie, des énergies nouvelles et renouvelables (solaire, éolien, biogaz). Pourtant ces sources constituent actuellement des palliatifs et des alternatives dans le renforcement et la sécurisation de l'offre énergétique aux bénéficiaires des diverses composantes sociales, surtout avec la loi sur la libéralisation du secteur de l'électricité. Enfin, le service public de distribution de l'énergie électrique a été concédé à ENEO mais il reste à préciser les modalités de cette distribution, ainsi que celles de la gestion des infrastructures de production ou de retenue pendant les crises d'origine climatique.

OVERALL OBJECTIVES	Diversifier et gérer durablement l'énergie au Cameroun dans un contexte de changement climatique.
SPECIFIC OBJECTIVES	<ul style="list-style-type: none"> • Renforcer l'offre d'énergie électrique par la création de microbarrages (de retenue et de production) et la réhabilitation des anciens ouvrages • Diversifier les sources d'énergie électrique par la promotion des énergies alternatives (solaire, éolienne, biogaz etc.) / • Promouvoir l'utilisation des technologies d'économie d'énergie (foyers améliorés, fumoirs améliorés, utilisation des ampoules à faible consommation énergétique etc.) • Sécuriser l'offre en bois-énergie par le reboisement d'espèces à haut rendement énergétique • Favoriser la prise en compte des effets des changements climatique dans le contrat de concession des entreprises de production, distribution et transport d'énergie électrique.
ACTIVITIES	<ul style="list-style-type: none"> - Valorisation du potentiel hydroélectrique national. - Promotion et vulgarisation des énergies renouvelables et des technologies d'économie d'énergie. - Reboisement d'espèces à haut rendement énergétique (Acacia, Neemier, etc.). - Prendre en compte les effets des changements climatiques dans les contrats de concession du service public de distribution d'énergie électrique
TARGET ID (TARGET AREAS; BENEFICIARIES)	n/a
SYNERGIES	Axe stratégique 3 et 4

IMPLEMENTERS	Pilote de l'action :MINEE Partenaires : Les partenaires techniques (EDC, ARSEL, ENEO, ONG, Comités de suivi BIP, CTD, Secteur privé, IRGM, MIPROMALO,MINIMIDT, MINFOF, ANAFOR, AER, MINRESI, Médias),MINEPDED.
INDICATORS	<ul style="list-style-type: none"> - Nombre de MW d'énergie hydroélectrique produits par des microcentrales - Nombre de MW d'énergie électrique produits par les sources énergies renouvelables - Nombre de contrats de concession prenant en compte les changements climatiques - Nombre de foyers améliorés fabriqués et distribués - Nombre de personne utilisant des technologies de réduction de la consommation de l'énergie électrique
TIMELINE	Projet de 5 ans, 2015-2020
COSTS	EUR 20 millions
FINANCIAL RESOURCES	MINEE, MINEPDED, ENEO, EDC, AER, ARSEL, Partenaires au développement

PROJECT TITLE	RENFORCEMENT ET SECURISATION DE L'ACCES AUX RESSOURCES EN EAU ET AUX SERVICES D'ASSAINISSEMENT DANS UN CONTEXTE DE CHANGEMENT CLIMATIQUE
SECTOR	Ressources en eau et assainissement
CONTEXT	<p>Le Cameroun dispose d'importantes potentialités en eau (aussi bien de surface : 267,88 km³ que souterraine : 55,98 km³) qui sont en nette fluctuation depuis les années 1970 du fait de la succession des périodes sèches et humides, engendrant des crises de l'eau. Ces crises se traduisent par l'assèchement des points de captage d'eau (puits, sources, forages, mares). Elles sont amplifiées dans les régions sahéliennes et les hautes terres densément peuplées et engendrent des conflits entre divers groupes d'utilisateurs. Quand elle est surabondante, elle est à l'origine des inondations, dans les plaines, dans les zones côtières et dans les bas-fonds anarchiquement occupés des centres urbains. L'approvisionnement en eau est encore largement tributaire des ressources de surface dont la qualité est sans cesse dégradée par diverses sources de pollution (pesticides agricoles, du rejet sans traitement préalable des eaux usées dans la nature ou des intrusions saline d'origine marine). Les eaux souterraines, pourtant relativement abondantes, stables et moins polluées ne font pas encore l'objet d'une exploitation rationnelle à grande échelle. Le gouvernement, à travers le DSCE fait de la fourniture en eau potable une priorité. L'objectif dans le sous-secteur est de porter le</p>

taux d'accès à l'eau potable de 50,7% actuellement (Source : 3ème RGPH de 2005) à 75% en 2020, conformément aux OMD. Aucun objectif spécifique en matière d'assainissement n'est clairement exprimé. Par ailleurs, le Sommet Mondial sur le Développement Durable de Johannesburg 2002 a recommandé à l'endroit des États parties l'élaboration de plans d'Action Nationaux de Gestion Intégrée des Ressources en Eau et d'utilisation efficace de l'eau comme repère important pour la réalisation des OMD. C'est dans ce cadre que le Cameroun a élaboré son PANGIRE depuis 2009. Le pays fait aussi partie des organisations sous-régionales, telles que l'ABN, la CBLT, l'Autorité de Gestion Intégrée de l'Eau en Afrique Centrale ou l'AMCOW dont l'objectif est la gestion concertée de l'eau partagée en s'appuyant sur l'harmonisation et la coordination des politiques nationales de mise en valeur des ressources en eau. Dans un contexte de changement climatique, l'amélioration de l'accès à l'eau passe par la prise en compte des usages multiples dont cette ressource fait l'objet, la valorisation des eaux souterraines, la protection des sources de captage et la multiplication des infrastructures de retenue pour réduire les pertes et optimiser l'utilisation des ressources disponibles.

OVERALL OBJECTIVES

Augmenter la résilience économique et sociale aux changements climatiques par la sécurisation et la gestion rationnelle des ressources en eau

SPECIFIC OBJECTIVES

- Améliorer l'accès en eau potable et aux systèmes d'assainissement, y compris pendant les périodes sèches, conformément aux OMD
- Améliorer l'efficacité de l'usage de l'eau dans tous les secteurs
- Évaluer et cartographier régulièrement les ressources en eau disponible
- Protéger les eaux contre les pollutions
- Promouvoir les techniques de potabilisation de l'eau / • Lutter contre l'ensablement et l'envasement des cours d'eau
- Favoriser les recharges des nappes par la mise en place des ouvrages de rétention
- Renforcer les systèmes de collecte et de traitement des déchets liquides
- Promouvoir la prise en compte du Genre dans tous les programmes d'eau et d'assainissement

ACTIVITIES

- Amélioration des stocks d'eau pour assurer un approvisionnement minimal en cas de sécheresse.
- Intégration du changement climatique dans le PANGIRE.
- Promotion des systèmes de collecte des eaux pluviales.
- Préparation des acteurs aux événements extrêmes (inondations et sécheresse) qui vont s'intensifier à l'aide d'un système d'alerte et du Plan National de Contingence.
- Amélioration de l'accès à l'eau potable et aux services d'assainissement.
- Promotion de l'hygiène, de l'assainissement de l'habitat et de l'environnement.
- Intensification des campagnes de sensibilisation et d'information des populations sur des maladies liées à la variabilité et au changement climatique.
- Réhabilitations et Construction des ouvrages de rétention d'eau (biefs, mares et retenues) pour favoriser la recharge des nappes souterraines.

	<ul style="list-style-type: none"> - Renforcement des systèmes d'information sur les migrations vectorielles (paludisme, typhoïde, méningite, etc). - Surveillances épidémiologiques. - Définition d'une norme sur la qualité de l'eau qui prenne en compte les paramètres physico-chimiques et bactériologiques propres à chaque localité. - Mobilisation de financements pour l'accès à une eau de qualité et en grande quantité
TARGET ID (TARGET AREAS; BENEFICIARIES)	n/a
SYNERGIES	Axe stratégique 2 et 3
IMPLEMENTERS	<p>Pilote de l'action : MINEE</p> <p>Partenaires : MINEE, MINEPDED, MINRESI, MINADER, MINEPIA, MINAS, MINH DU MINPROFF, MINSANTE, MINTP MINEDUB MINMITD MINESUP, MINESEC, MINATD CDE, CAMWATER, ONG, Confessions religieuses, Comités suivi BIP, PNDP, CTD, Privés, Génie militaire, HYSACAM, Médias : Radios communautaires, organes de presse.</p>
INDICATORS	<ul style="list-style-type: none"> - Taux d'accès équitable à l'eau potable - Rapports périodiques sur l'évaluation et la cartographie des ressources en eau - Le nombre de périmètres de protection et de dispositifs anti-pollution réalisés autour des points de captage des eaux - Superficie des bassins versants et longueur des berges aménagés - Nombre d'ouvrages de rétention construits - Nombre de projets de conservation des eaux qui augmentent les volumes retenus et améliorent les débits des cours d'eau - Taux de couverture en infrastructures sociocommunautaires d'assainissement et d'eau
TIMELINE	Projet de 5 ans, 2015-2020
COSTS	EUR 8 millions
FINANCIAL RESOURCES	MINEPAT, MINEE, MINEPDED, MINIMIDT, MINRESI, MINH DU, partenaires au développement

PROJECT TITLE	RENFORCEMENT DES CAPACITES D'ADAPTATION DU SYSTEME DE SANTE NATIONALE FACE AUX CHANGEMENTS CLIMATIQUES
SECTOR	Santé
CONTEXT	La recrudescence des maladies épidémiques/endémiques vectorielles ou liées à l'eau du fait des changements climatiques est désormais établie : épidémie récurrente de choléra dans le Septentrion, paludisme sur les Hautes Terres où cette maladie était rare du fait de la fraîcheur du climat, maladies liées à l'eau dans les grandes villes et dans les zones rurales, etc. Face à une offre sanitaire insuffisante, les populations font recours à l'automédication et à la pharmacopée traditionnelle ; et cela, malgré la mise en œuvre des programmes prioritaires de santé tels que la lutte contre les maladies: programme national de lutte contre la tuberculose, programme national de lutte contre le paludisme, programme national de lutte contre l'onchocercose, etc., déployée par le gouvernement. Compte tenu de l'accroissement démographique du pays évalué à 2,8% au cours de la période 1987-2005 (3ème RGPH), la population n'accédant pas aux soins médicaux de qualité ne fera s'accroître au fil des ans. D'où l'urgence de renforcer l'offre sanitaire, en prenant en compte les facteurs de l'incidence saisonnière des maladies.
OVERALL OBJECTIVES	Renforcer les capacités du système de santé nationale pour améliorer sa résilience aux changements climatiques
SPECIFIC OBJECTIVES	<ul style="list-style-type: none"> • Améliorer la couverture sanitaire • Renforcer la performance de la surveillance épidémiologique • Valoriser la pharmacopée • Prise en charge médicale des populations déplacées
ACTIVITIES	<ul style="list-style-type: none"> - Révision de la carte sanitaire prenant en compte les particularités des zones à hauts risques climatiques. - Création de nouvelles formations sanitaires. - Entretien et réhabilitation des infrastructures sanitaires existantes. - Renforcement de la participation communautaire à la gestion de leur problème de santé. - Actualisation de la stratégie sectorielle de la santé. - Amélioration du plateau technique (équipements techniques et immobiliers) des formations sanitaires à tous les niveaux. - Renforcement des capacités du personnel. - Amélioration du ratio personnel sanitaire/population. - Amélioration du ratio personnel sanitaire/population. - Formation du personnel de santé et déploiement équitable sur le terrain. - Renforcement du Système d'Alerte au niveau des postes sentinelles. - Renforcement des capacités des centres de santé dans la prévention des maladies à potentiel épidémiologique. - Création de pools de santé pour des interventions d'urgence.

	<ul style="list-style-type: none"> - Sensibilisation et éducation des populations sur les risques et les moyens de lutte contre les maladies vectorielles, les maladies liées à l'eau et les maladies liées à la pollution atmosphérique. - Actualisation du répertoire des tradipraticiens agréés. - Homologation des produits de la pharmacopée traditionnelle. - Accompagnement et contrôle de la production des médicaments de la pharmacopée en qualité et en quantité. - Réglementation de la distribution des produits de la pharmacopée. / Appui à la recherche en matière de la pharmacopée.
TARGET ID (TARGET AREAS; BENEFICIARIES)	n/a
SYNERGIES	Axe stratégique 3 et 4
IMPLEMENTERS	<p>Pilote de l'action : MINSANTE</p> <p>Partenaires : MINRESI, MINCOMERCE, MINEPDED/ONACC, MINDEF, MINATD, Relais communautaires, Confessions religieuses, UNICEF, OMS, UNFPA, GLOBAL FUND, BANQUE MONDIALE, ONG Mission/PLAN, Associations, OSC locales, Syndicats</p>
INDICATORS	<ul style="list-style-type: none"> - Nombre de formations sanitaires créées ou réhabilitées - Nombre de personnels formés/recyclés - Nombre de personnels qualifiés recrutés - Nombre de centres d'analyses créés et opérationnels - Nombre de relais communautaires ravitaillés en kits de prise en charge des victimes des catastrophes et des maladies émergentes liées aux changements climatiques - Répertoire des meilleures expériences de la pharmacopée disponible - Budget suffisant alloué à la recherche / Pourcentage de l'offre sanitaire - Nombre de laboratoires d'analyse médicales créés et renforcés - Nombre de formations sanitaires qui répondent aux normes
TIMELINE	Projet de 4 ans, 2016-2020
COSTS	EUR 5 millions
FINANCIAL RESOURCES	MINSANTE, MINEPDED, MINATD, MINAS, MINPROFF, OCEAC, Partenaires au développement

PROJECT TITLE	PRISE DES CHANGEMENTS CLIMATIQUES DANS LE DEVELOPPEMENT DES ACTIVITES TOURISTIQUES ET ARTISANALES
SECTOR	Tourisme
CONTEXT	<p>Les impacts directs de la variabilité accrue du climat seront la complication des conditions d'exercice de l'activité touristique : la modification des conditions de confort, de santé et de sécurité, etc. L'artisanat pourrait être directement touché quand de fortes pluies et des inondations rendent inaccessibles certains sites ou quand l'excès d'humidité fait pourrir la matière première et prolonge le temps de travail. Les impacts indirects se manifesteront à travers la réduction de la disponibilité des ressources qui font l'attractivité du pays (paysages, forêts, biodiversité, littoral). La question de l'eau et notamment de l'accès à l'eau potable est également prédominante. La hausse prévue du niveau de la mer, associée à d'autres phénomènes naturels ou d'origine anthropique, menace aussi nombre de ressources touristiques côtières ainsi que les infrastructures des plages. Il faudra d'ailleurs s'attendre à beaucoup d'autres problèmes dès lors que le tourisme reste dépendant de nombreux autres secteurs. Comme l'objectif visé par le DSCE dans ce domaine est de doubler l'effectif annuel de touristes extérieurs à l'horizon de la stratégie en renforçant le dispositif institutionnel de promotion du tourisme et en identifiant/retenant un nombre restreint de sites touristiques à fort potentiel de développement, il faudrait dès à présent mobiliser les énergies en faveur d'un réaménagement conséquent de ces sites et plus généralement des infrastructures touristiques. En ce qui concerne l'artisanat, le DSCE préconise de rendre le secteur plus attractif à travers le renforcement des capacités des artisans et leur meilleure intégration dans le circuit économique. Il est nécessaire de mieux structurer le secteur, de diversifier et d'accroître l'offre en matière première par un meilleur contrôle des ressources ce qui permettra d'améliorer la qualité de l'offre ainsi que la conservation des produits.</p>
OVERALL OBJECTIVES	Améliorer la résilience des activités touristiques et artisanales aux effets du changement climatique
SPECIFIC OBJECTIVES	<ul style="list-style-type: none"> • Créer et réaménager les infrastructures touristiques • Structurer le secteur de l'artisanat à travers un inventaire des activités et métiers qui la composent • Diversifier et accroître l'offre en matières premières du secteur de l'artisanat • Encourager la production artisanale (organisation des concours du meilleur artisan, des foires expositions, etc.) • Améliorer la conservation des produits artisanaux pour limiter leur détérioration et les pertes. • Développer des voies d'accès aux centres artisanaux et sites touristiques
ACTIVITIES	<ul style="list-style-type: none"> - Inventaire des activités et métiers de l'artisanat. - Recensement des artisans suivant les métiers ou ordres préalablement retenus. - Élaboration et mise en œuvre d'une réglementation du secteur de l'artisanat adaptée au contexte des changements climatiques.

	<ul style="list-style-type: none"> - Soutien à la construction des unités de productions artisanales à l’abri des intempéries et des risques climatiques. - Construction des villages de l’artisanat et des centres de formation professionnelle des jeunes. - Promotion de la diversification de l’offre en matière première pour les unités de production artisanales. - Construction des structures de stockage et de distribution des produits artisanaux. - Promotion des techniques de conservation des produits artisanaux suivant les secteurs, aléas ou risques climatiques en présence. / Viabilisation des sites touristiques existants. - Identification et aménagement de nouveaux sites touristiques. - Diversification des activités touristiques par la valorisation des associations culturelles. - Reboisement des sites touristiques dont le couvert végétal est menacé de disparition. - Sensibilisation de tous les acteurs du secteur touristique et artisanal sur les effets du changement climatique dans leurs domaines d’activités. - Renforcer les capacités des acteurs du secteur touristique et artisanal sur la prise en compte du changement climatique dans leurs activités. / Création des voies d’accès permanentes. - Coopération avec les CTD pour l’entretien des sites touristiques et des Villages de l’Artisanat.
TARGET ID (TARGET AREAS; BENEFICIARIES)	n/a
SYNERGIES	Axe stratégique 3 et 4
IMPLEMENTERS	<p>Pilote de l’action :MINPMEESA et MINTOUL</p> <p>Partenaires : MINRESI, CTD, MINCULTURE, MINCOMMERCE, MINFOF, CNPS, Partenaires sociaux et acteurs du développement, FNE,OAPI, syndicats des droits d’auteurs, Syndicats des artisans camerounais</p>
INDICATORS	<ul style="list-style-type: none"> - Existence du fichier national des activités et des métiers de l’artisanat - Existence du fichier national des artisans suivant les métiers ou ordres préalablement - Nombre de nouveaux textes et réglementation du secteur de l’artisanat adaptée au contexte des changements climatiques - Nombre de nouvelles unités de production artisanales construites pour mettre les artisans à l’abri des intempéries et des risques climatiques - Nombre de villages de l’artisanat construits - Nombre d’actions de promotion de la diversification de l’offre en matière première pour les unités de production artisanale - Nombre d’opérations de développement de nouvelles sources de matières premières pour l’artisanat - Nombre de structures de stockage et de distribution des produits artisanaux mises en place - Nombre de campagnes ou d’opérations de promotion des techniques de conservation des produits artisanaux suivant les secteurs, aléas ou risques climatiques en presence

	<ul style="list-style-type: none">- Nombre de kilomètres de routes pour l'accès aux sites touristiques réhabilités- Nombre d'anciens et nouveaux sites touristiques réhabilités- Nombre de sites éco touristiques identifiés et aménagés
TIMELINE	Projet de 5 ans, 2015-2020
COSTS	EUR 5 millions
FINANCIAL RESOURCES	MINTOUL, MINFOF, MINEPDED, MINADER, Contribution du Syndicat des artisans du Cameroun, Fonds des budgets des Collectivités Territoriales Décentralisées

CENTRAL AFRICAN REPUBLIC

ADAPTATION PRIORITY PROJECTS :

PROJECT TITLE	ATTENUATION DES CONSEQUENCES POST-CONFLIT DES VULNERABILITES ET RISQUES CLIMATIQUES SUR LA PRODUCTION AGRICOLE ET LA SECURITE
SECTOR	Agriculture
OBJECTIVE	Renforcer les capacités techniques et institutionnelles des acteurs du monde agricole en matière d'adaptation au changement climatique, afin d'améliorer la résilience de ce secteur.
ACTIVITIES	<ol style="list-style-type: none">1.1. Renforcer les capacités institutionnelles, politiques et financières pour planifier et gérer les risques climatiques dans le secteur agricole ;1.2. Améliorer l'encadrement technique des producteurs agricoles afin de conduire les travaux de cultures vivrières et de rentes dans de bonnes conditions et d'améliorer les conditions et les outils d'exploitation agricole en RCA ;1.3. Améliorer la performance des exploitations (encadrements techniques, crédits agricoles) en intégrant l'élevage à l'agriculture ;1.4. Réhabiliter et rendre opérationnels les centres de multiplication des semences ;1.5. Encourager la recherche dans le domaine de la simulation des rendements agricoles futurs en fonction des changements climatiques ;1.6. Introduire les semences de variétés à cycle court, adaptées aux conditions climatiques de l'heure ;1.7. Mettre en place un système national d'alerte et de vulgarisation en matière de prévisions saisonnières à l'échelle communautaire en temps réel, afin de réduire la vulnérabilité causée par les faux départs de saison culturale et la sécheresse agricole ;1.8. Améliorer les conditions et les outils d'exploitation agricole en République centrafricaine ;1.9. Résoudre le problème de débouchés, en créant la possibilité d'exporter les produits agricoles (vivriers et autres) vers les pays voisins et ailleurs, désenclaver certaines localités du pays afin de faciliter l'écoulement de leurs produits agricoles.
SYNERGIES	RCPCA pilier 2; ODD 1, 2, 13 et 16
IMPLEMENTERS	Ministre de l'agriculture et du développement rural
TIMELINE	D'ici à 5 ans

COSTS & SOURCE OF FINANCE	À déterminer
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PROJECT TITLE	RENFORCEMENT DE LA RÉSILIENCE CLIMATIQUE DU SECTEUR DE L'ÉLEVAGE ET RÉDUCTION DES RISQUES DE CONFLITS
SECTOR	Agriculture
OBJECTIVE	Favoriser une gestion durable des systèmes pastoraux et contribuer à la réduction des risques de conflits entre éleveurs et agriculteurs, à travers l'intégration de l'adaptation au changement climatique dans les politiques et opérations du secteur élevage
ACTIVITIES	<p>2.1 Renforcer les capacités institutionnelles, politiques et financières pour planifier et gérer les risques climatiques dans le secteur de l'élevage ;</p> <p>2.2 Mettre en place un mécanisme de gestion durable de couloir de transhumance ;</p> <p>2.3 Mettre en place un mécanisme de prévention et de gestion des conflits agriculteurs-éleveurs ;</p> <p>2.4. Réhabiliter et rendre opérationnelles les pharmacies vétérinaires ;</p> <p>2.5. Définir des options d'adaptation pour le secteur agro-pastoral dans des sites vulnérables clés ;</p> <p>2.6. Gérer durablement des systèmes agro-sylvo-pastoraux au nord-est et sud-est de la RCA</p>
SYNERGIES	RCPCA pilier 3 et ODD 1, 2, 13, 15 et 16
IMPLEMENTERS	Ministre de L'élevage et de la santé animale
TIMELINE	D'ici à 4 ans
COSTS & SOURCE OF FINANCE	À déterminer

PROJECT TITLE	INTÉGRATION DE L'ADAPTATION AU CHANGEMENT CLIMATIQUE DANS LA GESTION NATIONALE ET RÉGIONALE DES RESSOURCES EN EAU
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SECTOR	Ressources en eau et assainissement
OBJECTIVE	Améliorer la gestion des ressources en eau au niveau national et régional pour faire face aux inondations plus intenses et autres impacts du changement climatique
ACTIVITIES	1.1 Développer un système de suivi des ressources en eau souterraine et de surface ; 1.2 Renforcer les capacités des structures gouvernementales en vue d'améliorer la prestation des services d'eau et d'assainissement ; 1.3 Revoir et élaborer les documents politiques et les outils de la gestion du secteur eau et assainissement, y compris le schéma directeur d'aménagement et de gestion des eaux; le schéma directeur d'assainissement des eaux usées et excréta; le système national de l'information sur l'eau, en tenant compte des changements climatiques ; 1.4 Gérer les collectes des eaux de surface en zone soudano sahélienne et soudanienne en République centrafricaine ; 1.5 Établir un système de surveillance de la qualité de l'eau (SQE).
SYNERGIES	RCPCA pilier 2, ODD 6, 13
IMPLEMENTERS	Ministre du développement de l'énergie et des ressources hydrauliques
TIMELINE	D'ici à 5 ans
COSTS & SOURCE OF FINANCE	À déterminer

PROJECT TITLE	RENFORCEMENT DE LA RÉSILIENCE DES ZONES RURALES ET URBAINES AU CHANGEMENT CLIMATIQUE À TRAVERS UNE MEILLEURE GESTION DES RESSOURCES EN EAU DES COMMUNAUTÉS
SECTOR	Ressources en eau et assainissement
OBJECTIVE	Contribuer à l'amélioration de la résilience des zones rurales et urbaines au changement climatique en intégrant l'adaptation dans la gestion des ressources en eau des communautés
ACTIVITIES	2.1. Améliorer l'accès à l'eau potable des populations rurales et urbaines (Bangui et centres secondaires) face aux menaces climatiques, à travers la création de châteaux d'eau dans les grandes villes et de forages à pompe manuelle dans les villages ;

	2.2. Mettre en œuvre une stratégie de communication sociale et communautaire pour changer les normes et comportements, sensibiliser au changement climatique et soutenir la durabilité des interventions WASH.
SYNERGIES	RCPCA pilier 3 ; ODD 6, 11 et 13
IMPLEMENTERS	Ministre du développement de l'énergie et des ressources hydrauliques
TIMELINE	D'ici à 3 ans
COSTS & SOURCE OF FINANCE	À déterminer

CHAD

SECTOR	OBJECTIVES	ACTIVITIES	COSTS
Agriculture and livestock	n/a	<ul style="list-style-type: none"> • Delimitation and planning of pastoral areas • Forage crop development • Regulation of pastoral mobility • Management and creation of pastoral water points • Diversification of water and soil conservation techniques • Improvement of the adapted animal breed • Water management for irrigated crops • Development of a commodity chain approach in the agropastoral and organic agriculture sectors • Agroforestry development • Promotion of improved crop varieties 	n/a
Environment and forestry	n/a	<ul style="list-style-type: none"> • Bush and forest fire management • Promotion of deferred grazing • Protection and conservation of biodiversity and protected areas • Establishment and/or effective management of community forests • Showcasing of aboriginal skills and knowledge • Promotion and development of non-timber forest products 	n/a
Water and sanitation	n/a	<ul style="list-style-type: none"> • Rainwater collection and treatment systems • Promotion of basic sanitation measures (e.g. community-led total sanitation project and ecological sanitation) • Improvement of knowledge on surface and groundwater resources • Management of ponds and adaptive dams • Construction of modern wells and boreholes 	n/a
Renewable Energy	n/a	<ul style="list-style-type: none"> • Development of biogas • Promotion of wind energy • Popularization of butane gas • Promotion of solar energy • Popularization of improved stoves 	n/a

<p>Risk management, infrastructure and land use planning</p>	<p>n/a</p>	<ul style="list-style-type: none"> • Development of climate insurance • Development of alerts and early warning systems • Promotion of instruments such as zoning, building codes and redevelopment • Implementation of risk-sensitive and participatory land-use planning • Management of new climate-related natural disasters based on risk zone maps • Implementation of risk management and climate disaster plans at the national and local levels • Community awareness on climate risk prevention and management 	<p>n/a</p>
<p>Fishery Resources</p>	<p>n/a</p>	<ul style="list-style-type: none"> • Promotion of spirulina aquaculture • Promotion of fish farming • Stocking of dams and retention basins • Use of appropriate fishing gear and equipment • Increased fish supply 	<p>n/a</p>

CHILE

ADAPTATION PRIORITY PROJECTS :

PROJECT TITLE	FORTALECER LA PLANIFICACIÓN Y GESTIÓN DE RECURSOS HÍDRICOS A NIVEL NACIONAL PARA OPTIMIZAR EL USO DEL AGUA EN LA AGRICULTURA.
SECTOR	Silvoagropecuario
OBJECTIVE	Contribuir a la planificación de los recursos hídricos a nivel nacional a través del desarrollo de políticas, estudios, programas y/ acciones que permitan mejorar el uso del agua, asegurar el incremento y mejoramiento de la superficie regada así como al mejoramiento de la competitividad de los agricultores/as y las Organizaciones de Regantes.
ACTIVITIES	<ul style="list-style-type: none"> • Desarrollar estudios destinados a definir la viabilidad de proyectos de infraestructura de riego, incluyendo obras de acumulación, conducción y trasvases, entre otros, de modo de mejorar la seguridad de riego y/o de incorporar nuevas áreas al regadío. • Desarrollar programas tendientes al fortalecimiento técnico y legal de las Organizaciones de Usuarios de Aguas, para asegurar su constitución formal y la regularización de los derechos de aprovechamiento de agua. • Estudios para el desarrollo de instrumentos enfocados a mejorar la calidad del agua para riego.
OUTCOMES	n/a
IMPLEMENTERS	CNR
TIMELINE	Permanente
COSTS & SOURCE OF FINANCE	2 mil 983 Millones de pesos (presupuesto 2013).

PROJECT TITLE	ESTABLECER UN PROGRAMA NACIONAL PARA FOMENTAR LA GESTIÓN EFICIENTE Y SUSTENTABLE DEL AGUA EN LA AGRICULTURA DE RIEGO
SECTOR	Silvoagropecuario
OBJECTIVE	Optimizar el uso del agua de riego a nivel predial a través de una intensiva acción de mejoramiento tecnológico y procedimientos de gestión del recurso.

ACTIVITIES	<ul style="list-style-type: none"> • Gestionar, administrar y focalizar recursos orientados a la inversión en obras de riego y drenaje. • Fomento de la inversión privada en obras de riego y drenaje a través de la bonificación de una parte de la inversión de proyectos de tecnificación de riego intrapredial y/o mejoras en los sistemas de conducción de las aguas. • Mejorar la infraestructura de distribución del agua de riego. Esto implica mejoras en los canales primarios, secundarios y terciarios (revestimientos, acueductos, entubados, sistemas de compuertas, etc.).
OUTCOMES	8 mil ha anuales de nuevo riego y 14 mil ha anuales de riego tecnificado (metas CNR)
IMPLEMENTERS	CNR con colaboración de INDAP y FIA
TIMELINE	2010-2030
COSTS & SOURCE OF FINANCE	5 mil millones de pesos anuales hasta 2030

PROJECT TITLE	REFORZAR EL PROGRAMA DE RIEGO CAMPESINO
SECTOR	Silvoagropecuario
OBJECTIVE	Incrementar la productividad y competitividad de la Agricultura Familiar campesina a través de la incorporación de nuevas áreas al riego y del desarrollo de capacidades en la gestión y utilización del agua de riego
ACTIVITIES	<ul style="list-style-type: none"> • Estimular la participación campesina en los concursos de la Ley N°18.450 de Fomento al Riego y Drenaje, que la Comisión Nacional de Riego convoque, a través de proyectos individuales y asociativos. • Incrementar la seguridad de riego, a través de obras de reparación, mejoramiento o ampliación de los sistemas de riego extraprediales. • Aumentar la eficiencia de riego a través de inversiones en sistemas de riego tecnificado. • Incorporar nuevas áreas al riego, mediante la construcción de obras tales como embalses, pozos profundos, norias. • Dar seguridad jurídica a las aguas utilizadas en el riego campesino y fortalecer las organizaciones de regantes. Los instrumentos específicos utilizados, según el tipo de proyectos para los cuales están dirigidos son: <ul style="list-style-type: none"> • Programa de Obras Menores de riego o drenaje, individuales y asociativas. • Programa de Riego Asociativo, de obras de riego o drenaje, extraprediales. • Programa de Riego o Drenaje Intrapredial.

	<ul style="list-style-type: none"> • Bono Legal de Aguas, para resolver problemas relacionados con los derechos de agua, las organizaciones de usuarios de aguas, y la gestión del agua. • Programa de Estudios de Riego y Drenaje. Formulación de proyectos que serán presentados a concursos de la Ley N°18.450 de Fomento al Riego administrada por la Comisión Nacional de Riego. • Fondo Rotatorio: Recursos para otorgar créditos de pre financiamiento para la construcción de obras de riego o drenaje bonificadas por la CNR.
OUTCOMES	n/a
IMPLEMENTERS	INDAP
TIMELINE	Permanente
COSTS & SOURCE OF FINANCE	10.916 millones de pesos (presupuesto 2010)

PROJECT TITLE	OPTIMIZAR EL SISTEMA NACIONAL PARA LA GESTIÓN DE RIESGOS AGROCLIMÁTICOS, GRA.
SECTOR	Silvoagropecuario
OBJECTIVE	Diseñar y desarrollar un Sistema Nacional de Gestión de Riesgos frente a eventos climáticos y emergencias agrícolas.
ACTIVITIES	<ul style="list-style-type: none"> • Diseño de una estrategia nacional y puesta en marcha de instancias de coordinación a nivel nacional y regional para la gestión del riesgo agroclimático (Decreto 81/08, Res. 95/08, Ord.85/09, apoyo a la agricultura de secano, agricultura moderna con incorporación de otros enfoques/sistemas: manejo holístico, sistema Keyline; etc.). • Desarrollo de un Sistema de Información para la gestión de riesgos agroclimáticos (Observatorio para la Gestión de Riesgos Agroclimáticos, Portal www.minagri.gob.cl/agroclimatico , Red Agroclimática Nacional RAN, envíos masivos de información, integración a redes sociales, entrevistas radiales, distribución de material impreso, charlas divulgativas, etc.). • Establecimiento de redes regionales público privadas (ampliación de bases de datos para difusión de información agroclimática, talleres de capacitación, identificación de amenazas y vulnerabilidades, planes de trabajo, etc.). • Desarrollo del modelo de gestión de riesgos (planes de trabajo para la gestión preventiva, planes para enfrentar riesgos estacionales frente a eventos climáticos y planes de contingencia frente a emergencias agrícolas, etc.).

	<ul style="list-style-type: none"> Fortalecimiento de capacidades (actividades de capacitación y difusión, seminarios nacionales e internacionales, unidades demostrativas, etc.)
OUTCOMES	<ul style="list-style-type: none"> Número de Comisiones regionales y redes regionales de GRA operativas. Número de agricultores y profesionales del agro capacitados e informados en gestión de riesgos, prácticas de manejo predial.
IMPLEMENTERS	Unidad Nacional de Emergencias Agrícolas y Gestión del Riesgo Agroclimático UNEA, Subsecretaría de Agricultura.
TIMELINE	n/a
COSTS & SOURCE OF FINANCE	<ul style="list-style-type: none"> Recursos invertidos (2009-2011): 727,5 millones Recursos necesarios a 2012: 410 millones

PROJECT TITLE	ADECUAR EL INSTRUMENTO SEGURO AGRÍCOLA PARA ENFRENTAR EL CAMBIO CLIMÁTICO
SECTOR	Silvoagropecuario
OBJECTIVE	Reducir los riesgos frente a eventos climáticos extremos con el fin de asegurar que la agricultura, especialmente de pequeños y medianos productores, sea viable.
ACTIVITIES	<ul style="list-style-type: none"> Implementar la contratación del seguro en un mayor número de productores. Actualmente sólo el 10 %de la población potencial tiene cobertura. Ampliar la cobertura del seguro agrícola, diversificando los rubros considerados y aumentando los montos asegurados.
OUTCOMES	20% explotaciones al 2030
IMPLEMENTERS	INDAP, Corporación de Fomento a la Producción (CORFO) y las compañías de seguros.
TIMELINE	2010-2030
COSTS & SOURCE OF FINANCE	4 mil 304 Millones de pesos en 2010

PROJECT TITLE	ADOPTAR SISTEMAS DE ALERTA Y CONTROL INTEGRADO DE PLAGAS Y ENFERMEDADES.
SECTOR	Silvoagropecuario
OBJECTIVE	Reducir la susceptibilidad de los sistemas agrícolas ante el posible incremento de los problemas fitosanitarios debido al cambio climático, a través de sistemas adecuados de prevención y del manejo integrado de plagas y enfermedades agrícolas y forestales.
ACTIVITIES	<ul style="list-style-type: none"> • Establecer un sistema de manejo integrado de plagas y enfermedades, que reemplace los métodos de control químicos tradicionales, cuyas debilidades se pueden ver potenciadas por el cambio climático. Contribuir a la reducción del uso de pesticidas y plaguicidas, contribuyendo a la sustentabilidad de la producción agrícola, reemplazándolos por un sistema de manejo integrado de plagas y enfermedades. La implementación de esta estrategia exige: • Conocimiento de la biología y comportamiento de las plagas y sus enemigos naturales • Conocimiento y uso de técnicas de monitoreo tanto de plagas como de enemigos naturales • Monitoreo de condiciones ambientales • Establecimiento de umbrales de daño económico a partir de los cuales se requiere controlar • Conocimiento de métodos de control cultural y biológico • Realización de aplicaciones de plaguicidas y pesticidas en forma dirigida y localizada, con productos de baja toxicidad • Reemplazo de productos de amplio espectro de acción por productos selectivos y menos disruptivos para el medio ambiente. • Conservación y protección de los agentes de control biológico.
OUTCOMES	Permanente
IMPLEMENTERS	SAG, INIA, CIREN
TIMELINE	2010-2030
COSTS & SOURCE OF FINANCE	En estudio
PROJECT TITLE	APOYAR LA INVERSIÓN PRODUCTIVA A TRAVÉS DE LA AMPLIACIÓN Y MEJORAS AL SISTEMA CREDITICIO DEL SECTOR SILVOAGROPECUARIO, A FIN DE INCENTIVAR LA ADAPTACIÓN A LOS EFECTOS DEL CAMBIO CLIMÁTICO.
SECTOR	Silvoagropecuario

OBJECTIVE	Aumentar los montos otorgados y el número de usuarios, de manera de servir como soporte a la producción y apoyo a la incorporación de nuevas inversiones prediales para la adaptación a los efectos del cambio climático.
ACTIVITIES	Se espera que las modificaciones en los sistemas productivos a raíz del cambio climático sean de diversa índole y magnitud. Los cambios en los regímenes climáticos van a afectar a toda la configuración del sector (localización de los cultivos, fechas de siembra y cosecha, cambios de variedades, etc.) y demandarán de esfuerzos adicionales en incorporación de tecnologías y técnicas que permita aprovechar las oportunidades y enfrentar los desafíos esperados. Gran parte de estas acciones de adaptación deberán ser absorbidas financieramente por los productores agrícolas, de distintos tamaños a lo largo de todo el país, para hacer que esta actividad siga siendo económicamente viable se va a requerir mayor apoyo crediticio hacia los productores.
OUTCOMES	40 mil productores
IMPLEMENTERS	El Estado disponibilizaría los recursos a través de instituciones financieras y créditos directos asignados por una entidad pública (INDAP por ejemplo), pero para efectos de la contabilización la entidad inversora son los pequeños agricultores, que finalmente devuelven los recursos prestados. El Estado tiene el rol de dar acceso a tales créditos y por tanto de generar las condiciones y eventualmente hacer los aportes para que los fondos estén disponibles.
TIMELINE	Anual permanente al 2030
COSTS & SOURCE OF FINANCE	Disposición adicional de 50 mil millones de pesos anuales en créditos, con incremento hasta 75 mil millones de pesos anuales al año 2030.

PROJECT TITLE	IMPULSAR EL CAMBIO EN LOS CALENDARIOS DE SIEMBRA PARA MINIMIZAR RIESGOS CLIMÁTICOS.
SECTOR	Silvoagropecuario
OBJECTIVE	Establecer nuevos calendarios de siembra acorde con las nuevas condiciones climáticas imperantes para las distintas especies y promover su adopción de parte de los agricultores.
ACTIVITIES	<ul style="list-style-type: none"> • Modificar los calendarios de siembra según las nuevas condiciones climáticas. Los cambios esperados en las variables climáticas tendrán impacto sobre los procesos fenológicos de los cultivos, lo que hace necesario adaptar sus fechas de siembra y cosecha, de modo de maximizar el rendimiento en los cultivos sin afectar la calidad de los productos. • Desarrollar una campaña de difusión y capacitación para asegurar la adopción de este nuevo calendario por los productores. Este proceso requiere de capacitación de transferencias.

OUTCOMES	<ul style="list-style-type: none"> • mil transferencistas • 100 mil productores
IMPLEMENTERS	Ministerio de Agricultura: FUCOA, INDAP.
TIMELINE	2010 - 2030
COSTS & SOURCE OF FINANCE	Campaña de comunicación 560 millones de pesos Talleres de capacitación transferencistas 40 millones de pesos anuales

PROJECT TITLE	FOMENTAR EL USO DE SISTEMAS DE CULTIVO PARA LA REDUCCIÓN DEL ESTRÉS TÉRMICO.
SECTOR	Silvoagropecuario
OBJECTIVE	Facilitar el uso de técnicas eficaces para la reducción del estrés térmico en situaciones donde las altas temperaturas amenacen los rendimientos o la calidad de la producción.
ACTIVITIES	<ul style="list-style-type: none"> • Fomentar el uso de mallas reductoras de la radiación, considerando los umbrales luminosos de cada cultivo, o bien, la inclusión de especies arbóreas de poca densidad de copa en las áreas cultivadas, lo que permite viabilizar el cultivo de especies arbustivas o herbáceas más intolerantes a las elevadas cargas térmicas y radiativas. • Fomentar el uso de mulch, asociado con la implementación o gestión de riego tecnificado. Para la implementación de estos sistemas se requiere: <ul style="list-style-type: none"> • Desarrollar alternativas tecnológicas, basadas en el conocimiento científico, que permitan mejorar el rendimiento y viabilidad de los cultivos bajo condiciones de estrés térmico. • Zonificar el territorio en función de las variaciones en los niveles de estrés como consecuencia de los cambios climáticos. • Evaluar la factibilidad técnico-económica de las opciones de producción bajo ambientes de estrés.
OUTCOMES	Superficie por cultivo con la medida
IMPLEMENTERS	INIA, INDAP, CIREN
TIMELINE	Permanente

COSTS & SOURCE OF FINANCE	En estudio.
PROJECT TITLE	APOYO A LA INVESTIGACIÓN Y FOMENTO A LA INNOVACIÓN EN GESTIÓN DE RECURSOS HÍDRICOS EN EL SECTOR SILVOAGROPECUARIO.
SECTOR	Silvoagropecuario
OBJECTIVE	Mejorar la gestión y eficiencia en el uso de los recursos hídricos en el sector silvoagropecuario mediante investigación aplicada, con uso de herramientas analíticas y de información para la toma de decisiones.
ACTIVITIES	<ul style="list-style-type: none"> • Fomentar la investigación aplicada en torno a los recursos hídricos, orientados al uso eficiente y gestión sustentable de éstos a nivel predial, extrapredial y/o cuenca hidrográfica que permita mantener y/o mejorar la competitividad de los productores agropecuarios del país. • Desarrollar un sistema preciso de estimación de demandas hídricas de cultivos, frutales y especies forestales, considerando la modelación y/o evaluación de desempeños a nivel fisiológico, productivo y de calidad bajo una gama de escenarios climáticos posibles. • Desarrollar y mejorar los sistemas de información que permitan la toma de decisiones informada y oportuna, con soporte técnico para reducir la vulnerabilidad frente a variabilidad y cambio climático en agricultura de riego. • Implementación del uso de herramientas para la gestión hídrica con el fin de mejorar la competitividad de los productores.
OUTCOMES	<ul style="list-style-type: none"> • Mejorar el rendimiento productivo en función de agua de riego utilizada • Mejorar la información para la toma de decisiones en torno a la gestión sostenible de los recursos hídricos.
IMPLEMENTERS	CNR, FIA, INIA, CIREN, INFOR, INDAP
TIMELINE	Permanente
COSTS & SOURCE OF FINANCE	Fondos Concursables.

PROJECT TITLE	RED NACIONAL DE MONITOREO DE LA BIODIVERSIDAD
SECTOR	Biodiversidad
OBJECTIVE	Desarrollar una red nacional de monitoreo de la biodiversidad y un sistema de alerta temprana sobre las condiciones de los ecosistemas y especies incluyendo los posibles cambios climáticos futuros. Esta red debe incluir las áreas protegidas y otras áreas de gestión de la biodiversidad.
ACTIVITIES	<p>Diseño conceptual, construcción, institucionalización y operativización de la red, incluyendo, entre otros:</p> <ul style="list-style-type: none"> • Identificación de los ecosistemas y especies para monitorear. • Identificación de las variables (bióticas y del clima) y de los indicadores de alerta para el monitoreo, tomando en cuenta las orientaciones internacionales (OCDE, CDB) y nacionales. • Desarrollo de estándares metodológicos para el monitoreo. • Protocolos para el intercambio de la información generada. • Identificación de futuros escenarios climáticos. • Desarrollo de una base de datos y su respectivo entorno SIG para el manejo de la información. • Identificación de los arreglos institucionales necesarios y el presupuesto correspondiente para la implementación de la red. • Puesta en funcionamiento la Red a escala reducida (proyectos piloto en localidades selectas, p.e. humedales alto andinos, especies sensibles o indicadoras tales como anfibios y aves migratorias). • Evaluación del funcionamiento de la red a escala reducida (proyectos piloto) e introducción de eventuales ajustes. • Implementación de una red mareográfica. • Ampliación paulatina de la Red a nivel nacional.
IMPLEMENTERS	MMA, Armada y otras por confirmar
TIMELINE	Nacional 2014 (en adelante)
COSTS & SOURCE OF FINANCE	CTCN (Climate Change Technology Network de Naciones Unidas) para la etapa de diseño de la red
PROJECT TITLE	HUMEDALES COMO INDICADORES DE LA SALUD DE CUENCAS HIDROGRÁFICAS

SECTOR	Biodiversidad
OBJECTIVE	Identificar los humedales indicadores a nivel de cuencas, micro cuencas o sub cuencas, como indicadores de la salud ambiental de los ecosistemas acuáticos continentales.
ACTIVITIES	<ul style="list-style-type: none"> • Identificadas al menos una cuenca prioritaria por macro región y sus humedales indicadores. • Diagnosticadas las condiciones ambientales de los ecosistemas acuáticos en las cuencas prioritarias. • Reporte de datos cuantitativos asociados a las variables monitoreadas y descripción de tendencias.
IMPLEMENTERS	MMA, Armada y otras por confirmar
TIMELINE	2014-2017
COSTS & SOURCE OF FINANCE	Sectorial público, Cooperación internacional

PROJECT TITLE	PROGRAMA DE CAPACITACIÓN AMBIENTAL EN BIODIVERSIDAD Y CAMBIO CLIMÁTICO PARA EL EJERCITO (SUBSECRETARÍA DE FUERZAS ARMADAS)
SECTOR	Biodiversidad
OBJECTIVE	Efectuar una alianza entre Ejército y MMA para capacitar personal del Ejército en materias de biodiversidad y cambio climático.
ACTIVITIES	<ul style="list-style-type: none"> • Establecidos los arreglos institucionales MMA-Ejército e identificados forma, contenido, duración y gastos de la capacitación. • Preparados (cursos, charlas, eventos, materiales) componentes de la capacitación. • Ejecutadas las actividades de capacitación.
IMPLEMENTERS	MDN, EJERCITO (Fuerzas Armadas), División de Educación Ambiental MMA
TIMELINE	2014 (en adelante)
COSTS & SOURCE OF FINANCE	Por definir

PROJECT TITLE	INTEGRACIÓN DE LOS CONTENIDOS SOBRE CAMBIO CLIMÁTICO Y BIODIVERSIDAD EN EL CURRÍCULUM DE EDUCACIÓN PARVULARIA, BÁSICA Y MEDIA
SECTOR	Biodiversidad
OBJECTIVE	Comunidad educativa informada y sensibilizada respecto de las consecuencias del cambio climático en la biodiversidad, a través del tratamiento de los contenidos de cambio climático y biodiversidad en los programas de estudios de Educación Parvularia, Básica y Media.
ACTIVITIES	<ul style="list-style-type: none"> • Implementación del Acuerdo entre el Ministerio del Medio Ambiente y el Ministerio de Educación: “Sistema Nacional de Certificación Ambiental para Establecimientos Educativos” (SNCAE). • 1000 Establecimientos educativos certificados.
IMPLEMENTERS	MINEDUC
TIMELINE	2012-2018
COSTS & SOURCE OF FINANCE	Publico sectorial

PROJECT TITLE	DESARROLLO DE INICIATIVAS DE CONSERVACIÓN DE LA BIODIVERSIDAD Y ADAPTACIÓN AL CAMBIO CLIMÁTICO EN LA RED CAMPUS SUSTENTABLE
SECTOR	Biodiversidad
OBJECTIVE	Sensibilizar a la Comunidad Universitaria respecto de las consecuencias del cambio climático en la biodiversidad y fomentar la promoción de buenas prácticas de conservación de la biodiversidad y adaptación al cambio climático en los campus universitarios y espacios de influencia de las casas de estudio.
ACTIVITIES	<ul style="list-style-type: none"> • Identificadas, priorizadas y en implementación buenas prácticas e iniciativas de conservación de la biodiversidad y adaptación al cambio climático en los campus universitarios. • Difundidos y valorizados las iniciativas y sus resultados a través de distintas actividades.
IMPLEMENTERS	MMA - (División de Educación Ambiental, Red Campus Sustentable)

TIMELINE	2014-2020
COSTS & SOURCE OF FINANCE	Público sectorial, otros por definir

PROJECT TITLE	DESARROLLO DE MATERIAL EDUCATIVO SOBRE BIODIVERSIDAD Y CAMBIO CLIMÁTICO
SECTOR	Biodiversidad
OBJECTIVE	Contar con material audiovisual sobre los efectos que tendrá el cambio climático en la biodiversidad a nivel nacional, con el fin de sensibilizar, educar y preparar a la población.
ACTIVITIES	4000 videos, distribuidos en igual número de colegios y bibliotecas públicas
IMPLEMENTERS	MMA (División de Educación Ambiental, División de Recursos Naturales y Biodiversidad).
TIMELINE	2014-2016
COSTS & SOURCE OF FINANCE	Público sectorial

PROJECT TITLE	APOYO A LAS POLÍTICAS PÚBLICAS DE LUCHA CONTRA LA DESERTIFICACIÓN* (VER PUNTO 9)
SECTOR	Biodiversidad
OBJECTIVE	Apoyar las políticas públicas sobre desertificación.
ACTIVITIES	<ul style="list-style-type: none"> • Incorporada la temática de la desertificación en gobiernos regionales y gobiernos locales a partir de estrategias y planes de lucha contra la desertificación.

	<ul style="list-style-type: none"> • Creada una instancia Técnica de análisis y debate con la capacidad de orientar la elaboración de políticas públicas. • Conocimiento generado sobre la base de experiencias exitosas de lucha contra la desertificación y difundidos para alimentar el debate sobre políticas públicas de lucha contra la desertificación. • Los gobiernos y la sociedad civil de países de América del Sur conocen las experiencias y metodologías del programa de lucha contra la desertificación PNUD-UE y consideran la ejecución de proyectos con este enfoque.
IMPLEMENTERS	En el marco del Proyecto PNUD-Chile : “Apoyo a las Políticas Públicas de lucha contra la Desertificación, aplicado en Comunidades y Municipios Rurales de Zonas Ecológicas Áridas a Sub-Húmedas Secas en América del Sur”
TIMELINE	2011-2016
COSTS & SOURCE OF FINANCE	El proyecto cuenta con el financiamiento de la Unión Europea y de GEF/PNUD

PROJECT TITLE	FONDO DE PROTECCIÓN AMBIENTAL (FPA)
SECTOR	Biodiversidad
OBJECTIVE	Cofinanciar iniciativas ciudadanas ambientales orientadas a la protección o reparación del medio ambiente, el desarrollo sustentable, la preservación de la naturaleza o la conservación del patrimonio ambiental.
ACTIVITIES	Se habrán comprometido recursos para la ejecución de iniciativas ciudadanas que desarrollen educación ambiental, orientadas a la protección o reparación del medio ambiente, el desarrollo sustentable, la preservación de la naturaleza o la conservación del patrimonio ambiental.
IMPLEMENTERS	MMA, División de Educación Ambiental, Departamento del Fondo de Protección Ambiental
TIMELINE	Desde 2014
COSTS & SOURCE OF FINANCE	FPA

PROJECT TITLE	INCLUSIÓN DE LA ADAPTACIÓN AL CAMBIO CLIMÁTICO EN LAS ESTRATEGIAS REGIONALES Y NACIONAL DE BIODIVERSIDAD
SECTOR	Biodiversidad
OBJECTIVE	Explicitar el eje de adaptación al cambio climático en las Estrategias Nacional y Regionales de Biodiversidad.
ACTIVITIES	Metas que en su conjunto cumplen el objetivo estratégico de aumentar la capacidad de adaptación de la biodiversidad al cambio climático, diseñadas con sus respectivos planes de acción, responsables, plazos, indicadores y medios de verificación, a nivel nacional y en cada una de las 15 regiones administrativas del país.
IMPLEMENTERS	MMA, SEREMIS del Medio Ambiente de todas las regiones
TIMELINE	Periodo de desarrollo de la actualización de las Estrategias Regionales de Biodiversidad
COSTS & SOURCE OF FINANCE	Sectorial público y privado
PROJECT TITLE	ESTUDIOS OCEANOGRÁFICOS Y METEOROLÓGICOS DE BIODIVERSIDAD MARINA
SECTOR	Biodiversidad
OBJECTIVE	Incrementar el conocimiento de aspectos oceanográficos y meteorológicos de biodiversidad marina y de morfología submarina a través de un estudio multidisciplinario en zonas geográficas remotas (fiordos e Islas de Pascua y Juan Fernandez), a través de Cruceros Oceanográficos CIMAR y del proyecto MEDUSA.
ACTIVITIES	<ul style="list-style-type: none"> • Planificación de las metas y actividades científicas de los Cruceros. • Ejecución de los cruceros. • Análisis y publicación de los datos y resultados de los cruceros
IMPLEMENTERS	MDN, ARMADA (SHOA-CONA)
TIMELINE	Por definir

COSTS & SOURCE OF FINANCE	Por definir
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FISHERIES AND AQUACULTURE PRIORITIES

PROJECT TITLE	APOYAR LA IMPLEMENTACIÓN DE PLANES DE MANEJO EN PESQUERÍAS LOCALES, NACIONALES Y REGIONALES.
SECTOR	Pesca y Acuicultura
OBJECTIVE	Mejorar la sustentabilidad de los recursos pesqueros objetivos y la conservación de la biodiversidad asociada
ACTIVITIES	<ul style="list-style-type: none"> • Identificar los recursos objetivos y su fauna asociada. • Desarrollar un estándar de plan de manejo, que considere la problemática del cambio climático.
IMPLEMENTERS	SUBPESCA
TIMELINE	2016 en adelante
COSTS & SOURCE OF FINANCE	SUBPESCA

PROJECT TITLE	FORTALECER EL PROGRAMA DE OBSERVADORES CIENTÍFICOS A BORDO DE LA FLOTA PESQUERA NACIONAL
SECTOR	Pesca y Acuicultura
OBJECTIVE	Mejorar la información respecto de los impactos de la pesca en la biodiversidad y el ambiente asociado, ampliando la cobertura del programa de observadores científicos.

ACTIVITIES	<ul style="list-style-type: none"> • Obtención de información sobre cuantificación y determinación de las causas del descarte y la pesca incidental. • Diseñar e implementar medidas para mitigar el impacto de la pesca en la biodiversidad. • Disminuir los impactos en la biodiversidad. • Relacionar información del programa de observadores con variables ambientales.
IMPLEMENTERS	SUBPESCA
TIMELINE	2016 en adelante
COSTS & SOURCE OF FINANCE	SUBPESCA

PROJECT TITLE	FORTALECER EL PROGRAMA DE REDUCCIÓN DEL DESCARTE Y LA PESCA INCIDENTAL EN LAS PESQUERÍAS NACIONALES
SECTOR	Pesca y Acuicultura
OBJECTIVE	Mitigar la mortalidad por descarte de ejemplares de especies objetivo y de fauna acompañante así como la mortalidad de especies incidentales por captura.
ACTIVITIES	<ul style="list-style-type: none"> • Identificación de medidas normativas, tecnológicas, operacionales, de mercado o culturales que podrían reducir los descartes y la pesca incidental. • Elaboración de un código de buenas prácticas pesqueras. • Elaboración de un programa de capacitación y difusión. • Elaboración de un programa de monitoreo, seguimiento y evaluación del Plan de Reducción.
IMPLEMENTERS	SUBPESCA
TIMELINE	2016 en adelante
COSTS & SOURCE OF FINANCE	SUBPESCA

PROJECT TITLE	PROMOVER EL DESARROLLO DE LA PLANIFICACIÓN ESPACIAL MARINA (MSP, POR SUS SIGLAS EN INGLÉS) COMO UNA HERRAMIENTA DE GESTIÓN PARA EL USO DE LOS RECURSOS Y ECOSISTEMAS MARINOS.
SECTOR	Pesca y Acuicultura
OBJECTIVE	Permitir el desarrollo sustentable de las diferentes actividades económicas en zonas marinas y costeras en un contexto ecosistémico.
ACTIVITIES	<ul style="list-style-type: none"> • Generación de capacidades en el desarrollo de instrumentos de Planificación Espacial Marina (MSP, por sus siglas en inglés). • Definir las áreas en las cuales aplicar el instrumento de MSP. • Incluir la Planificación Espacial Marina en los instrumentos actuales y/o futuros de planificación del uso de los recursos y espacios marino.
IMPLEMENTERS	SUBPESCA, DIRECTEMAR, MMA
TIMELINE	2016 en adelante
COSTS & SOURCE OF FINANCE	SUBPESCA, FNDR, Acuerdos y Memorándum de Cooperación

PROJECT TITLE	GUÍA PARA LA CERTIFICACIÓN DE PESQUERÍAS.
SECTOR	Pesca y Acuicultura
OBJECTIVE	Disponer de un instrumento para la orientación de pescadores en el proceso de certificación de pesquerías con objeto de lograr la sustentabilidad en la explotación de los respectivos recursos marinos.
ACTIVITIES	<ul style="list-style-type: none"> • Revisión y análisis de las certificaciones actuales. • Guía para la certificación de pesquerías. • Actividades de difusión y capacitación para la aplicación de la guía. • Incrementar el número de pesquerías certificadas a nivel de país.
IMPLEMENTERS	SUBPESCA

TIMELINE	2016 en adelante
COSTS & SOURCE OF FINANCE	SUBPESCA y sector pesquero privado

PROJECT TITLE	RED NACIONAL DE MONITOREO Y ANÁLISIS DE BIODIVERSIDAD MARINA Y DE AGUAS CONTINENTALES.
SECTOR	Pesca y Acuicultura
OBJECTIVE	Desarrollar una red nacional de monitoreo de la Biodiversidad y un sistema de alerta temprana sobre las condiciones de los ecosistemas y especies incluyendo los posibles cambios climáticos futuros. Esta red debe incluir las áreas acuáticas protegidas y otras áreas promulgadas para la gestión de su biodiversidad.
ACTIVITIES	<p>Diseño conceptual, construcción, institucionalización y operativización del Módulo Marino de la red, incluyendo, entre otros:</p> <ul style="list-style-type: none"> • Identificación de los ecosistemas y especies para monitorear. • Identificación de las variables (bióticas y del clima) y de los indicadores de alerta para el monitoreo (según OCDE, CBD). • Desarrollo de estándares metodológicos para el monitoreo. • Protocolos para el intercambio de la información generada. • Identificación de futuros escenarios climáticos. • Desarrollo de una base de datos y su respectivo entorno SIG para el manejo de la información. • Identificación de los arreglos institucionales necesarios y el presupuesto correspondiente para la implementación de la Red. • Puesta en funcionamiento de la Red (Proyectos Pilotos en localidades selectas (p.e. áreas marinas protegidas, especies sensibles o indicadoras tales como peces, corales, tortugas, mamíferos, aves marinas, entre otros). • Evaluación del funcionamiento de la Red (Proyectos Pilotos) e introducción de eventuales ajustes. • Ampliación paulatina de la Red a nivel nacional.
IMPLEMENTERS	MMA, MDN, y otras por confirmar
TIMELINE	2016 en adelante
COSTS & SOURCE OF FINANCE	Por definir. Se está explorando financiamiento con CTCN (Climate Change Technology Mechanism de Naciones Unidas) para la etapa de diseño de la red.

PROJECT TITLE	MODELOS DE PRONÓSTICOS DE PESQUERÍAS PELÁGICAS CHILENAS FRENTE A DIVERSOS ESCENARIOS DEL CAMBIO CLIMÁTICO.
SECTOR	Pesca y Acuicultura
OBJECTIVE	Desarrollar modelos pronósticos para explorar cómo el cambio climático va a afectar la abundancia futura de los recursos pesqueros a nivel nacional y regional.
ACTIVITIES	<ul style="list-style-type: none"> • Bases de datos pesqueras y ambientales consolidadas y actualizadas hasta el año 2010. • Modelo regional de circulación oceánica validado; Pronósticos ambientales y procesos oceanográficos locales forzados por distintos escenarios del cambio climático planteados por IPCC. • Modelos actualizados y nuevos modelos ambiente-recurso para el PSO basados en redes neuronales artificiales (RNA), máquina soporte vectorial (MSV) y modelos híbridos. • Pronósticos de desembarque de los recursos pesqueros en diferentes escenarios del cambio climático. • Concepto de un sistema informático de predicción de volúmenes en diferentes escenarios del cambio climático.
IMPLEMENTERS	SUBPESCA
TIMELINE	2016 en adelante
COSTS & SOURCE OF FINANCE	FONDEF

PROJECT TITLE	ESTUDIOS OCEANOGRÁFICOS Y DE MORFOLOGÍA SUBMARINA ASOCIADOS A LA BIODIVERSIDAD MARINA.
SECTOR	Pesca y Acuicultura
OBJECTIVE	Analizar la información científica existente e incrementar el conocimiento de aspectos oceanográficos y de morfología submarina asociada a la biodiversidad marina, en zonas geográficas cubiertas por cruceros oceanográficos de investigación.
ACTIVITIES	<ul style="list-style-type: none"> • Desarrollar modelos de predicción de cambios en la biodiversidad marina a través del análisis de la información científica de variables oceanográficas y de morfología submarina.

	<ul style="list-style-type: none"> • Incorporar la problemática del cambio climático en la planificación de las metas y actividades científicas de los cruceros. • Ejecución de los cruceros. • Análisis y publicación de los datos y resultados de los cruceros.
IMPLEMENTERS	MDN, ARMADA (SHOA-CONA), SUBPESCA
TIMELINE	2016 en adelante
COSTS & SOURCE OF FINANCE	CORFO, CONICYT, FONDEF, Fondos Internacionales (GEF)

PROJECT TITLE	PROGRAMA DE PREVENCIÓN, CONTROL Y/O ERRADICACIÓN DE ESPECIES EXÓTICAS INVASORAS (EEI).
SECTOR	Pesca y Acuicultura
OBJECTIVE	Minimizar el ingreso de EEI a las aguas marinas y continentales nacionales y predecir y minimizar los riesgos de dispersión de especies exóticas invasoras.
ACTIVITIES	<ul style="list-style-type: none"> • Desarrollo de un modelo de dispersión de especies EEI frente al cambio climático. • Estudio sobre la posible dispersión de las principales especies EEI en respuesta a escenarios de cambio climático. • Formulación de programas de prevención, control y/o erradicación de especies EEI calificadas como relevantes, e implementación de acciones, considerando los factores de cambio climático que podrían modelar su diseminación.
IMPLEMENTERS	MMA, SUBPESCA
TIMELINE	2015-2020
COSTS & SOURCE OF FINANCE	Por definir

PROJECT TITLE	DETERMINACIÓN DE LAS ÁREAS APTAS PARA ACUICULTURA (AAA) DE ACUERDO CON LOS POSIBLES FUTUROS ESCENARIOS CLIMÁTICOS-OCEANOGRÁFICO.
SECTOR	Pesca y Acuicultura
OBJECTIVE	Identificar nuevas AAA y/o readecuar las AAA actualmente en operación, tales que permitan su adaptación en el corto plazo a los cambios proyectados en el medioambiente, manteniendo la producción y resguardando de las actividades y servicios asociados a la acuicultura.
ACTIVITIES	<ul style="list-style-type: none"> • Cartografía detallando clasificación de zonas afectadas de acuerdo al análisis y predicciones realizadas. • Generación de nuevas áreas posibles para la relocalización, determinando su viabilidad productiva y social. • Planes de largo plazo asociados a la migración y adaptación de las actividades productivas de acuerdo a su sensibilidad y capacidad de adaptación frente al cambio climático.
IMPLEMENTERS	MINECON, SUBPESCA
TIMELINE	2016 y adelante
COSTS & SOURCE OF FINANCE	MINECON, FNDR, otros

COLOMBIA

SECTOR	OBJECTIVES	ACTIVITIES	COSTS
Biodiversity and its ecosystem services	Develop actions aimed at reducing processes of transformation and loss of ecosystems especially influenced by climate change	Include ecosystem services into the value chains of economic activities at local, regional and national level	n/a
Water resources and marine, coastal, island and oceanic areas	n/a	Conservation and preservation of marine-coastal ecosystems; Protection and restoration of degraded coral reefs	n/a
Basic and sectoral infrastructures (transport and house settlements)	n/a	Correct risk conditions in the face of hydrometeorological events in the existing infrastructure in order to avoid losses, damages and interruptions in its operation; Design new infrastructure works such as roads, bridges, ports and infrastructure design with characteristics that give it resilience against climate change; Grant financial protection/risk transfer/insurance to all infrastructure works; Improve the integration of transport planning with the generation of urban planning and land use planning policies	n/a

Basic and sectoral infrastructures (mining)	n/a	Reduce the high dependence of the country's electricity generation on the hydroelectric component; Improvement and expansion of the electricity supply with renewable sources and distributed generation; Substitution of fossil fuels; Capacity building and promoting the use of new innovative technologies; Public awareness, education and cultural change; public and private entities and civil society; Energy basket diversification; Protection of water supply sources; Increased availability of electricity generated with clean sources; Improving resilience of ecosystems that protect surface and groundwater sources through participation of users and local actors; Consolidation of early warning system for climate-related threats to the sector.	n/a
Food security and agricultural production	Reduce the vulnerability of agricultural production to climate threats, in order to minimize their impact on the competitiveness of the sector and the sufficient and stable availability of food by managing the risk associated with climate variability and change	Identification and implementation of support areas to guarantee the provision of food at the regional level in preparation and response to an extreme weather event; Improve production efficiency with sustainability criteria; Improve the adaptation capacity of agricultural producers to the impacts of climate change; Train on and disseminate to small and large producers, new cultivation and irrigation technologies with tolerance to changes associated with climate change; Recover productive systems of traditional knowledge that tend to maintain and / or increase resilience in the face of climate change	n/a
Human habitat (health)	n/a	Implement local and regional early warning systems for vector-borne diseases; Strengthen capacities in epidemiology to know and act on the links between the climate and health risk events; Identify the links between determinants of health and climate change.	n/a

Human habitat (city systems)	n/a	The planning of mega, large and medium-sized cities should consider the implications of their development in terms of water supply, food and nutritional security, energy supply and risk in the face of extreme climate events; City planning should consider the provision of ecosystem services of water regulation, soil regulation, local climate regulation and moderation of impacts of extreme events; Technologies should be applied to reformulate location and construction of homes, transport and public services, to make them less vulnerable to climate change	n/a
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COSTA RICA

SECTOR	OBJECTIVES	ACTIVITIES	SPECIFIC OUTCOMES	IMPLEMENTERS	TIMELINE	SOURCE OF FINANCE
Biodiversity and water resources	Gestión de la biodiversidad, ecosistemas, cuencas hidrográficas y espacios marino-costeros para la adaptación y el bienestar de las comunidades locales.	Fomento de la adaptación basada en ecosistemas y comunidades fuera del patrimonio natural del estado	Al menos mantener una cantidad de 300.000 hectáreas anuales bajo el Programa de Pago por Servicios Ambientales, en total en todas las regiones socioeconómicas del país, que protegen los recursos ecosistémicos y fomentan la gestión sostenible y adaptada del territorio.	FONAFIFO - MINAE; Academia, ONGs, Asociaciones, Colectivos y Comunidades	2022-2026	Financiamiento institucional
			7.500 hectáreas de tierra dentro de paisajes rurales seleccionados por el programa han implementado medidas de AbE costo efectivas por hombres y mujeres usuarios de la tierra.	SINAC-MINAE, DCC-MINAE; Academia, ONGs, Asociaciones, Colectivos y Comunidades	2022-2025	Condicionado a disponibilidad de fondos externos
			10.000 hectáreas anuales de bosque están bajo contrato de pago por conservación de biodiversidad a través del PCB (Programa para la Conservación de la Biodiversidad).	FUNBAM	2022-2026	Financiamiento institucional
			1.000 hectáreas anuales reciben pago a través del Programa de Financiamiento Forestal, mediante la operación de fondos	FONAFIFO - MINAE; Academia, ONGs, Asociaciones,	2022-2025	Financiamiento institucional

			del Sistema de Banca para el Desarrollo	Colectivos y Comunidades		
			401.250 hectáreas cubiertas reciben pago bajo el programa de "Contrato para Reducción de Emisiones Forestales (CREF)" (75% de avance)	FONAFIFO - MINAE; Academia, ONGs, Asociaciones, Colectivos y Comunidades	2022-2025	Financiamiento institucional
			200 hectáreas recuperadas o restauradas en los corredores biológicos interurbanos en la región Central.	SINAC-MINAE, DCC-MINAE; Academia, ONGs, Asociaciones, Colectivos y Comunidades	2026	Financiamiento institucional
			Se mantienen al menos 3.997 contratos bajo el Programa de Pago por Servicios Ambientales, de los cuales 791 son formalizados con mujeres dueñas o co-propietarias de fincas y 53 son formalizados en territorios indígenas.	FONAFIFO - MINAE; Municipalidades, Academia, ONGs, Asociaciones, Colectivos y Comunidades	2022-2026	Financiamiento institucional
			10 municipalidades en la región Central implementan soluciones basadas en la naturaleza para fortalecimiento de la integridad de los servicios ecosistémicos en áreas urbanas y periurbanas, a	SINAC-MINAE, DCC-MINAE; Academia, ONGs, Asociaciones, Colectivos y Comunidades	2022-2026	Financiamiento institucional

			través de alianzas público - privadas.			
			3 Parques Naturales Urbanos (PANU) establecidos en la región Central para el fortalecimiento de la integridad de los servicios ecosistémicos y la generación de espacios para la recreación y el turismo resiliente.	SINAC-MINAE, DCC-MINAE; Academia, ONGs, Asociaciones, Colectivos y Comunidades	2024	Financiamiento institucional
			Al menos 3 nuevos proyectos de adaptación basada en ecosistemas con enfoque de ciudad implementados en el país.	Fundecooperación para el Desarrollo Sostenible; Municipalidades, Academia, ONGs, Asociaciones, Colectivos y Comunidades	2023	Condicionado a disponibilidad de fondos externos
			3 iniciativas nacionales o subnacionales (ej. NAPs, LAPs, NAMAs) incluyen enfoques de AbE y abordan la equidad de género.	SINAC-MINAE, DCC-MINAE; Academia, ONGs, Asociaciones, Colectivos y Comunidades	2022-2025	Condicionado a disponibilidad de fondos externos
			Al menos 10 proyectos de restauración y reforestación en tierras degradadas, tomando	SINAC-MINAE, FONAFIFOMINAE	2026	Condicionado a disponibilidad de fondos externos

			en cuenta el mapa ELSA Adaptación.			
			10 paisajes rurales restaurados en suelos degradados con potencial de manejo de bosque secundario, mediante la implementación de planes de manejo silviculturas y tomando en cuenta el mapa ELSA Adaptación, que permitan el desarrollo de procesos de producción forestal sostenible, dirigidos a mejorar la resiliencia y bienestar de las comunidades y los medios de vida de sus habitantes.	SINAC-MINAE	2023-2026	Condicionado a disponibilidad de fondos externos
			1 programa de gestión de riesgos y adaptación al cambio climático diseñado para ecosistemas de humedal, considerando la generación de resiliencia para las poblaciones vinculadas, mediante el análisis del grado de vulnerabilidad de estos ecosistemas y sus poblaciones asociadas.	SINAC-MINAE	2023	Financiamiento institucional
			Al menos 4 convenios de cooperación con Municipalidades del Gran Área Metropolitana para la incorporación de iniciativas de	SINAC-MINAE	2024	Condicionado a disponibilidad de fondos externos

			adaptación basada en ecosistemas en la gestión de Corredores Biológicos Interurbanos.			
		Resguardo de refugios climáticos estratégicos, tanto terrestres como marinos, en áreas bajo dominio público del Sistema Nacional.	1 protocolo para el monitoreo de la integridad de la funcionalidad de la fauna y flora en corredores biológicos y refugios climáticos a partir de indicadores proxy sobre el estado, articulados con indicadores de presión, respuesta y amenaza.	SINAC-MINAE; Comités de Corredores Biológicos, Academia, ONGs, Asociaciones, Colectivos y Comunidades	2023	Condicionado a disponibilidad de fondos externos
			1 estudio actualizado de las características y tipología de los refugios climáticos (validaciones de campo, uso actual, titulares de derecho, grado de vulnerabilidad de las especies de flora y fauna, etc.) dentro y fuera de ASP, incluyendo una guía de "buenas prácticas o acciones tempranas para la gestión de sitios identificados como potenciales Refugios Climáticos".	SINAC-MINAE; Comités de Corredores Biológicos, Academia, ONGs, Asociaciones, Colectivos y Comunidades	2026	Condicionado a disponibilidad de fondos externos

			6 Corredores Biológicos gestionan refugios climáticos definidos por el SINAC, aplicando la "Guía de acciones tempranas para la gestión de sitios identificados como potenciales Refugios Climáticos".	SINAC-MINAE; Comités de Corredores Biológicos, Academia, ONGs, Asociaciones, Colectivos y Comunidades	2026	Condicionado a disponibilidad de fondos externos
			100% de las áreas de conservación con ecosistemas marinos - costeros implementan eficazmente las estrategias de adaptación al cambio climático y atienden sus efectos.	SINAC-MINAE; MAG, INCOPECA, Sector Municipal, Sector Académico y ONGs	2025	Condicionado a disponibilidad de fondos externos
		Fomento de la seguridad y sostenibilidad hídrica ante el cambio climático, considerando tanto aguas superficiales como subterráneas	1 protocolo interinstitucional de identificación de fuentes intermitentes por variabilidad y cambio climático y gestión de vertidos	Dirección de Agua - MINAE; AyA, Ministerio de Salud, Academia, ONGs, Asociaciones, Colectivos y Comunidades	2022	Mixto

			1 norma técnica para la adaptación de caudales en concesiones de agua ante situaciones de variabilidad y cambio climático	Dirección de Agua - MINAE; AyA, Ministerio de Salud, Academia, ONGs, Asociaciones, Colectivos y Comunidades	2023	Financiamiento institucional
			1 balance hídrico nacional por cuencas actualizado.	Dirección de Agua - MINAE; Academia, ONGs, Asociaciones, Colectivos y Comunidades	2022	Financiamiento institucional
			1 metodología existente para formular los Planes de Seguridad del Agua (PSA) de los sistemas de abastecimiento del AyA se actualiza para integrar criterios de adaptación al cambio climático.	AyA; Academia, ONGs	2022-2026	Condicionado a disponibilidad de fondos externos

			<p>20.580 previstas operativas construidas dentro del Área Metropolitana de San José de aguas residuales para el fomento de la seguridad hídrica ante el cambio climático.</p>	<p>AYA; MIDEPLAN, Ministerio de Hacienda, Secretaría Técnica Autoridad Presupuestaria, Banco Nacional (aprobación del Estudio de Factibilidad del Proyecto de Mejoramiento Ambiental del Área Metropolitana de San José y su financiamiento)</p>	<p>2022-2026</p>	<p>Condicionado a disponibilidad de fondos externos</p>
			<p>Foro de Gobernanza Mixto del Agua enfoca la ronda anual de foros regionales y nacionales en adaptación al cambio climático y Gestión Integral del Recurso Hídrico (GIRH) en 2023 y la adaptación se mantiene como eje temático del Foro hasta el 2026.</p>	<p>Dirección de Agua - MINAE; ASADAS, Municipalidades, Empresas prestatarias de servicios públicos asociados al recurso hídrico</p>	<p>2023-2026</p>	<p>Mixto</p>

			Disminución del 17% en las pérdidas de agua potable en los sistemas de abastecimiento correspondientes a la GAM, Limón, Guácimo, San Isidro de Pérez Zeledón, El Pasito de Alajuela, San Ramón de Alajuela, Puntarenas y Liberia para el fomento de la sostenibilidad hídrica ante el cambio climático	AyA; Academia, ONGs, Asociaciones, Colectivos, Comunidades y Sectores productivos	2026	Financiamiento institucional
Protection of services and infrastructures	Servicios públicos adaptados e infraestructura resiliente.	Fortalecimiento de normas y lineamientos para la inversión pública con criterios de adaptación.	1 metodología para DCC-MINAE proyectos de inversión pública incorporando criterios para la evaluación del riesgo asociado al clima y la identificación de medidas de adaptación.	MIDEPLAN; DCC-MINAE	2022-2023	Condicionado a disponibilidad de fondos externos
			1 instancia de coordinación establecida responsable de elaborar y ejecutar un plan de acción para el fortalecimiento de capacidades institucionales en evaluación del riesgo para proyectos de infraestructura pública. (Decreto Ejecutivo N°42465 – MOPT – MINAE – MIVAH)	CNE; MOPT, MINAE, MIVAH	2023	Financiamiento institucional
			1 norma que incorpora criterios de adaptación al cambio climático aprobada, referente al otorgamiento de	CNE; Municipalidades	2023	Financiamiento institucional

			permisos de construcción en cantones sin plan regulador			
			1 "Norma Técnica para Diseño y construcción de sistemas de abastecimiento de agua potable, de saneamiento y pluvial" ajustada para que incorpore criterios de adaptación al cambio climático.	AyA; MINAE, Municipalidades, ASADAS, Empresas prestatarias de servicios públicos asociados al recurso hídrico	2026	Condicionado a disponibilidad de fondos externos
			1 metodología de evaluación del riesgo asociado al clima para infraestructura socializada	CFIA; AyA, ICE, CONAVI, CGR, Academia, Centros de Investigación	2022-2026	Condicionado a disponibilidad de fondos externos
			1 modelo de 2025 valoración oficial de vulnerabilidad ante el riesgo de desastres, aplicable a amenazas de origen natural, incluidas amenazas asociadas al clima, que se utilizará para la evaluación de riesgo de desastres en la infraestructura del país (Decreto N°36721-MP-PLAN)	CNE; Academia	2025	Financiamiento institucional
		Gestión de activos públicos que asegure la robustez de obras de infraestructura y la redundancia entre	55.000 hectáreas evaluadas para el manejo y control de las inundaciones y con propuesta de	SENARA; INDER, Asociaciones de productores, ASADAS, Municipalidades,	2022-2023	Mixto

		línea vitales (vialidad, energía, agua)	obras y presupuestos para gestión (Parte baja de la Cuenca del río Coto Colorado).	Academia, Comunidades, ONGs, Asociaciones y Colectivos		
			75% de los proyectos de infraestructura en territorios indígenas diseñados y construidos a partir de la evaluación del riesgo, incluidas amenazas asociadas al clima	CONAI; Academia, Comunidades, ONGs, Asociaciones y Colectivos Indígenas	2022-2025	Financiamiento institucional
			75% de los proyectos de infraestructura comunal aprobados con fondos del año 2024, diseñados y construidos a partir de la evaluación del riesgo, incluidas amenazas asociadas al clima (región Brunca, región Pacífico Central, región Huetar Caribe)	DINADECO y Asociaciones de Desarrollo; Academia, Comunidades, ONGs, Asociaciones, y Colectivos	2023-2026	Financiamiento institucional
			1 evaluación ante impactos asociados al clima en la infraestructura de alcantarillado sanitario de las regiones Huetar Caribe y Pacífico Central, utilizando información de clima actual y escenarios climáticos futuros, incluidos aumento	AyA; Municipalidades, Academia, Comunidades, ONGs	2024	Condicionado a disponibilidad de fondos externos

			en el nivel del mar y erosión costera			
			1 evaluación de impactos asociados al clima en proyectos de riego ejecutados.	SENARA; Academia, Comunidades, ONGs, Asociaciones y Colectivos	2024	Condicionado a disponibilidad de fondos externos
		Continuidad de los servicios públicos vitales (salud, educación, agua y saneamiento, energía, transporte)	1 estudio de pre-factibilidad o identificación ampliada para el almacenamiento de energía (turbo bombeo) utilizando el embalse del Arenal para asegurar la continuidad y acceso del servicio energético.	ICE; Academia	2024	Financiamiento institucional
			100% de las instituciones o empresas prestatarias de servicios públicos vitales con políticas de continuidad de negocios, con obligación de evaluar el riesgo en la operación y mantenimiento de la infraestructura y los servicios	ARESEP; MOPT, AyA, ICE, ASADAS, ESPH, Instituciones o empresas prestatarias de servicios públicos vitales	2022-2025	Financiamiento institucional
			10 proyectos de estrategias en el quinquenio para la protección de los aprovechamientos del AyA a través de la tarifa para la protección del recurso hídrico	AyA; Entidades privadas proveedoras de servicios de públicos, SINAC-MINAE, FONAFIFO-MINAE, ASADAS,	2022-2026	Condicionado a disponibilidad de fondos externos

				MAG, SENARA, INDER, DCC-MINAE, Dirección de Agua-MINAE, MINSA, Academia, Comunidades y ONGs		
			25 MW de energía solar incorporados a la matriz eléctrica en la Región Chorotega para aumentar resiliencia a través de la diversificación de la matriz energética.	ICE; Academia, Comunidades, ONGs, Sector privado	2026	Financiamiento institucional
		Fortalecimiento del monitoreo y respuesta de los servicios de vigilancia sanitaria tanto en salud pública como sanidad agropecuaria.	100% de los estudios de reinversión en proyectos de infraestructura de la CCSS incorporan el análisis de riesgos asociados al cambio climático	CCSS; DCC-MINAE, CNE	2022-2026	Condicionado a disponibilidad de fondos externos
			1 piloto del sistema de vigilancia de Plagas y Enfermedades Agropecuarias Atribuibles a los Efectos del Cambio Climático (PEAAECC) y su incidencia en cultivos	SFE; IMN, MINAE, SENASA, IGN, INTA, Municipalidades, Academia, Comunidades, ONGs, Asociaciones y Colectivos de productores	2023-2024	Condicionado a disponibilidad de fondos externos

			1 sistema predictivo de vigilancia de Plagas y Enfermedades Agropecuarias Atribuibles a los Efectos del Cambio Climático (PEAAECC) en cultivos a nivel nacional.	SFE; MAG, INDER, Agropecuario IMN, MINAE, SENASA, IGN, INTA, Municipalidades, Academia, Comunidades, ONGs, Asociaciones y Colectivos de productores	2024-2026	Condicionado a disponibilidad de fondos externos
Adapted production systems	Sistemas productivos adaptados y eco-competitivos.	Normas y lineamientos técnicos para la resiliencia de los sectores productivos basados en principios de responsabilidad extendida del productor y consumo responsable	1 estrategia para la aplicación de tecnologías de cosecha de agua de lluvia y de riego en sistemas productivos agropecuarios.	MAG; INTA, SENARA	2022	Condicionado a disponibilidad de fondos externos
			1 catálogo de incentivos climáticos para el sector privado que incorpora la adaptación al cambio climático.	DCC-MINAE; Sector privado, ONGs, Academia	2022-2023	Condicionado a disponibilidad de fondos externos
			1 mesa de situación del Sector Agropecuario consolidada para el desarrollo de capacidades en reducción del riesgo (incluidos los asociados al clima), preparación, respuesta y la recuperación	MAG; SFE, SENASA, INTA, ONS, CONAC, SEPSA, SENARA, INDER, INCOPECA, PIMA, CNP, Sector privado, Academia,	2023	Financiamiento institucional

				ONGs, Comunidades y Asociaciones		
			1 documento con Turismo orientaciones para la adaptación del sector turismo al cambio climático disponible, que facilite el cumplimiento de los criterios del CST relacionados.	DCC-MINAE; ICT; ONGs, Asociaciones y Colectivos, Cámaras y Asociaciones Turísticas, Comunidades	2024	Condicionado a disponibilidad de fondos externos
			1 sistema de reconocimiento que integra criterios de adaptación categoría empresarial disponible bajo el marco del Programa País de Liderazgo Climático de MINAE.	DCC-MINAE; Sector privado, ONGs, Asociaciones y Colectivos, Comunidades	2024	Condicionado a disponibilidad de fondos externos
		Generación de las condiciones necesarias para promover la innovación, inversión, eco-competitividad y resiliencia de la economía ante el cambio climático.	3 Procesos de Vigilancia Estratégica desarrollados de forma articulada que identifiquen oportunidades de negocio asociadas a la adaptación y resiliencia al cambio climático, así como necesidades de capacitación en asistencia técnica, módulos, programas en Gestión Ambiental, que sean necesarios aplicar en los	INA; Municipalidades, MEIC, DCC-MINAE, MAG, Asociaciones de Desarrollo Comunal, Academia	2022-2026	Presupuesto institucional

			negocios para la adaptación al cambio climático y fortalecer la resiliencia (1 en región Huetar Norte, 1 en región Pacífico Central y 1 región Central).			
			1 programa de acompañamiento empresarial diseñado y disponible en 2 regiones (8 emprendimientos participando en la región Huetar Norte y 25 emprendimientos participando en la región Central) para emprendimientos de oportunidad con soluciones para la adaptación al cambio climático y la resiliencia.	INA; Municipalidades, MEIC, DCC-MINAE, MAG, Asociaciones de Desarrollo Comunal, Academia	2022-2024	Presupuesto institucional
			1 programa de acompañamiento técnico en funcionamiento para la promoción de variedades de cultivo resilientes al clima.	INTA; ONS, MAG, INDER, ONG, Academia, INA, Comités Sectoriales Regionales Agropecuarios	2023-2026	Condicionado a disponibilidad de fondos externos

			1 programa formulado para la implementación de tecnologías de cosecha de agua de lluvia y de riego en sistemas productivos agropecuarios.	MAG; SENARA, Municipalidades, MINAE, Asociaciones de Desarrollo Comunal, ASADAS, INDER, ONGs	2024	Condicionado a disponibilidad de fondos externos
			1 programa en la región Brunca de formación y con mecanismos y recursos financieros disponibles con enfoque de género e inclusivo, para el emprendimiento agrícola y de agronegocios resilientes al clima.	MAG; INDER, SENARA, Municipalidades, MINAE, Asociaciones de Desarrollo Comunal, ASADAS, ONGs	2026	Condicionado a disponibilidad de fondos externos
		Propiciar la conformación de alianzas público-privadas para mejorar y escalar prácticas productivas adaptadas a reducir pérdidas, daños y asegurar la continuidad de	1 proyecto piloto desarrollado para la generación de planes de gestión de riesgo (incluyendo riesgo asociado al clima) en una cadena de valor que incluye una empresa ancla y cuatro PYMES.	DCC-MINAE; Academia, Asociaciones, Cooperativas y Cámaras, ONGs, Sector privado	2022-2023	Condicionado a disponibilidad de fondos externos

		negocios y servicios (energía, agua)	1 evento anual de 2022-2026 DCC-MINAE articulación empresarial que permitan el intercambio de experiencias referentes a la adaptación al cambio climático.	DCC-MINAE; MEIC; Academia, Asociaciones, Cooperativas y Cámaras, ONGs, Sector privado	2022-2026	Condicionado a disponibilidad de fondos externos
			1 sistematización bianual de experiencias del sector privado y público referentes a la adaptación al cambio climático	DCC-MINAE; MEIC; Academia, Asociaciones, Cooperativas y Cámaras, ONGs, Sector privado	2022, 2024, 2026	Condicionado a disponibilidad de fondos externos
			1 instancia de coordinación (comité asesor técnico o comité sectorial) de alianzas público-privadas para la continuidad ante situaciones de desastre	CNE; MEIC, Academia, Asociaciones, Cooperativas y Cámaras, ONGs, Sector privado	2023	Financiamiento institucional

DRC

AGRICULTURE PRIORITY

PROJECT TITLE	ADAPTATION PROGRAMME FOR THE AGRICULTURAL SECTOR AND SUSTAINABLE RURAL DEVELOPMENT IN THE DRC
SECTOR	Agriculture
CONTEXT	Climate change affects seasonal cycles and other agro-climate parameters, and directly threatens the production of basic foodstuffs for rural communities. This has, by extension, serious potential implications for the already precarious food security of the entire Congolese population. Congolese agriculture, which is the source of income for 90 percent of the country's population, continues to be exclusively rainfed and/or transhumant. With the change in rainfall, especially through shortened rainy seasons, pronounced variability during rainy seasons, or with increasing average soil temperature (thus affecting crop growth), crops are threatened, as well as the populations who depend almost exclusively on rainfed agriculture, are rendered vulnerable, both in cities and in the countryside. This growing uncertainty, combined with the weak capacity to manage climate risks and the limited number of adaptation mechanisms available, could be a further obstacle to achieving food security and social development among the poor populations, particularly in the poorest rural communities.
OBJECTIVE	n/a
ACTIVITIES	<ul style="list-style-type: none"> - Support programme for resilient economic growth in the agricultural sector and sustainable rural development in the DRC. - Promote in a sustainable manner the agricultural value chain, above all, the food crop chains. - Develop agribusiness in order to increase rural farmers' income and those of other operators in the sector. - Develop and disseminate research products among users. - The Adaptation Programme of the NPIA of the DRC. - Institutional and regulatory strengthening of the agricultural sector. - Sustainable and integrated natural resources development: biodiversity, sustainable land management, and integrated water resources management (IWRM). - Rehabilitation and strengthening of basic rural infrastructures and opening up of rural areas. - Dissemination of quality seeds and brood stock, and adapted crop techniques. - Promotion of by-products (animal feed and compost). - Programme for organizing rural populations and basic development in the provinces of Bandundu, Katanga, Kinshasa, Équateur and Orientale.

- Organization of rural communities and improvement of agricultural governance.
- Promotion of the gender approach mainstreaming.
- Capacity building in management and technical support to community organizations.
- Strengthening of the capacities of rural organizations: set-up, management and planning.
- Support programme for integrating climate change resilience into development strategies and climate risk planning.
- Support for the adaptation of the agricultural, agro-pastoral and agroforestry sector within the institutional and regulatory framework.
- Support technology transfer and management and organizational know-how at the decentralized level.
- Support in preparing the national land use scheme through the development of a GIS on land use.
- Support for small and medium-sized enterprises (SMEs) or other local bodies for agricultural production, processing and packaging of agricultural products.
- Promotion of means of transportation in rural areas.
- Support for crops techniques and rationalization of agricultural mechanization in rural areas.
- Establishment of financing and micro-financing mechanisms.
- Programme for the promoting agricultural research and building innovative capacity as part of the DRC's resilience to climate change.
- Strengthening of the human and material capacities of research, extension and of technical support institutions and centres.
- Development and promotion of technologies likely to increase agricultural, agro-pastoral and agroforestry productivity.
- Promotion of appropriate technologies for processing and packaging agricultural products.
- Support for scientific research into climate data management and climate change monitoring.
- Support to agricultural research/ action.
- Strategic coordination of programmes, plans and initiatives in adaptation and knowledge management.
- Strategic coordination of programmes, plans and initiatives in adaptation.
- Design and implementation of a knowledge management database.
- Project for designing, equipping and implementing an integrated early warning climate system for agriculture.

IMPLEMENTERS	Potential Accredited Entity: FAO
TIMELINE	n/a
COSTS & SOURCE OF FINANCE	USD 900 million

ENERGY PRIORITY

PROJECT TITLE	ADAPTATION PROGRAMME FOR THE ENERGY AND TRANSPORTATION SECTOR AND IMPROVEMENT OF THE QUALITY OF LIFE IN THE DRC
SECTOR	Energy
CONTEXT	<p>The energy sector in the DRC is divided into two categories: electric power and domestic energy. The first is marked by a very poor access of the populations to electric power (electrification rate of 11 percent in 2015), and its relationship with climate change is insufficiently mentioned in the documents related to energy management in the country. Domestic energy is characterized by a high use of wood energy by 99 percent of the rural population of the DRC, both for cooking and for making charcoal. In addition, many people derive direct and indirect benefits from the production and marketing of fuelwood, which constitutes a true value chain. Indeed, beyond removing the forest cover for the production of this type of wood, the spaces freed up are used for subsistence agricultural activities. This dynamic of production use and marketing of wood energy is important for the socio-economic development of the rural populations who depend on it. Like the electric power sector, the wood energy sector does not benefit from any specific policy, except indirectly from the forest management policy from which the necessary resources to feed this sector are drawn. However, unlike the electric power sector, which relies on the country's hydrological potential, domestic energy, which relies on forest resources, is vulnerable to climate change and the resulting political dynamics both nationally and internationally. On the one hand, climate change affects forests and calls for measures to be taken to protect them. On the other hand, the heavy dependence on the forest resource, which is becoming increasingly scarce, affects the lifestyles of rural populations. The risks of inadequate adaptation must therefore be considered.</p>
OBJECTIVE	n/a
ACTIVITIES	<ul style="list-style-type: none"> - An adaptation programme supporting the energy and transportation sector and improving the quality of life. - Improved access to drinking water. - Improving access to wastewater treatment and sustainable waste management. - Improving access to communication (roads and ICT) and opening up areas that are vulnerable to climate change. - Improved access to health services by poor populations that are vulnerable to climate change. - Strengthening governmental and non-governmental institutional capacities.
IMPLEMENTERS	Potential Accredited Entity: World Bank
TIMELINE	n/a

COSTS & SOURCE OF FINANCE	USD 3.4 billion
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FORESTRY AND BIODIVERSITY PRIORITY

PROJECT TITLE	PROGRAMME FOR THE CONSERVATION OF FOREST BIODIVERSITY AND STRENGTHENING THE VALUE CHAIN OF NON-WOOD FOREST PRODUCTS IN THE DRC
SECTOR	Forestry and biodiversity
CONTEXT	<p>The DRC is one of the 16 countries in the world qualified as having mega biodiversity (high rate of endemism). This situation is also related to both to the vastness of its territory (234.5 million ha) and variety of physical and climatic conditions that influences biological wealth. With a forest cover of over 128 million ha, the DRC is home to about 10 percent of the world's forests and over 47 percent of Africa's forests. Its significant biodiversity consists of an impressive plant complex of varied features, ranging from dense forest type to more or less wooded savannas and open forests; habitats of an equally diverse fauna, made up of endemic, rare or unique species in the world. The inland water bodies occupy 3.5 percent of the national territory. and its potential represents more than 50 percent of the continent's fresh water. In addition to being an immense source of drinking water, it shelters a rich and varied ichthyological fauna and represents, in some of its non-navigable reaches, a potential source of hydroelectric power. Out of more than 50,000 known plant species in Africa, the DRC has the greatest number of local floral species. The national flora, with remarkable originality, counts around 10,531 species, all major groups combined including algae: 249 species; fungi (basidiomycetes): 582 species; bryophytes: 154 species; pteridophytes: 383 species; and spermatophytes: 9,142 species with 275 exotic species. The specific endemism rate of this flora, which is very high, shows more than 952 endemic phanerogams, 10 pteridophytes, 28 bryophytes, 1 lichen, 386 endemic fungi, i.e. 1,377 endemic species for the entire flora. The fauna is also abundant and above all, highly varied given the variability of the habitat.</p>
OBJECTIVE	n/a
ACTIVITIES	<ul style="list-style-type: none"> - Programme on the conservation of biological diversity and strengthening the value chains of non-wood forest products in the DRC. - Conservation of biological diversity of forest ecosystems: regulatory and institutional framework. - Assessing the potential of non-wood forest products and determination of its economic value. - Encouraging the communication initiatives of strengthening the value chains of the NWFPs.

IMPLEMENTERS	Potential Accredited Entity: UNEP
TIMELINE	n/a
COSTS & SOURCE OF FINANCE	USD 100 million

COSTAL ZONES PRIORITY

PROJECT TITLE	PROGRAMME FOR ADAPTING THE BANANA-NSIAMFUMU COASTAL ZONE (26 KM) TO THE RISING SEA LEVEL
SECTOR	Coastal zones
CONTEXT	<p>At the coastline with low topography located between Moanda-ville and Banana, the sea has, over 26 years, encroached on nearly 27 m of the mainland, i.e. an erosion rate of around 1.03 m/year. The damage caused by this withdrawal of the shoreline is spectacular: the Maray-Maray Hotel, has already been destroyed and carried into the depths of the ocean. The Mangrove hotel is now only about 30 m from the sea and may disappear in less than 15 years if nothing is done to stop this erosion. At the point of the coastline where its topography is uneven (Moanda cliff), the situation is much more worrying because over the 40 years, constantly agitated oceanic waters (relatively more intense wave and tidal regime) at this level have encroached the line by around 80 m. Hence, the estimated erosion rate is 2 m/year, which seriously threatens Nsiamfumu, a city of fishers, as well as the city of Vista, where a row of residential houses has already been ripped down and engulfed in the ocean (MECN-EF, 2001; Musibono, 2006). The causes of coastal erosion are both natural and manmade. Natural causes:</p> <ul style="list-style-type: none"> • the very low coastal topography of the portion of the coastline between the town of Moanda and Banana, i.e. 10 km (nearly 27 percent of the DRC coastline); • soil and rock in place that are very vulnerable to hydrodynamic actions at the level of the portion of the coastal line constituting the cliff; or 27 km (nearly 73 percent of the coastline); • a regime of relatively intense waves and tides (during certain high tides, the ocean water level reaches 2 m or even 3 m); • flooding caused by high tides. All adjacent lands of the portion of the coastline with low topography are generally flooded during high tides. Ocean waters flood the Moanda– Banana road, and invade the mangroves as well as the inhabited lands, with the following consequences: an increase in the salinity of the water and the soil of the mangroves, as well as numerous material and agricultural

losses, etc. This situation is particularly critical for the extreme point of Banana. High tides, like the historic ones of 1915 that raised the sea level by 2 m for a period of 3 months, flooded Camp Quadrature and the Régie des Voies Maritimes / Banana facilities located at an altitude of only 0.96 m;

- the low coastal topography of the portion of the coastline between the town of Muanda and Banana, over 10 kilometres (nearly 27% of the DRC coastline), which makes this area vulnerable to flooding;
- a type of soil and rock that is very vulnerable to hydrodynamic actions at the level of the coastline constituting the cliff; i.e. 27 km (nearly 73% of the coastline), which makes the coast vulnerable to erosion;
- flooding due to river inundation and precipitation. In the coastal region, many areas are located very slightly above the river level, hence, are inundated during the flood period. Among these areas, it should be noted that all of the low islands of the maritime channel, some of which (such as the island of Mateba) are of undeniable socio-economic importance

OBJECTIVE	n/a
ACTIVITIES	<ul style="list-style-type: none"> - Coastal adaptation measures (Banana-Nsiamfumu vulnerable area, 26 km) to climate change. - Coastal erosion control: coastal rehabilitation and development. - Support for income-generating activities. - Strengthening of the early warning system for coastal zones and capacity building. - Studies, technical assistance, and coastal erosion control works in the Banana-Nsiamfumu zone (26 km). - Coastal erosion control works in the Banana-Nsiamfumu zone (26 km). - Early warning system for sea level rise in the zone. - Environmental and social assessment and implementation of the Plan de Gestion Environnementale et Social (PGES, Environmental and Social Management Plan). - Project management
IMPLEMENTERS	Potential Accredited Entity: UNDP
TIMELINE	n/a
COSTS & SOURCE OF FINANCE	USD 236 million

ETHIOPIA

SECTOR	OBJECTIVES	ACTIVITIES	COSTS
Agriculture	Enhancing food security through improving agricultural productivity in a climate smart manner	Selecting resistant and tolerant varieties through switching and/or diversification; Increase use of organic fertilizers and appropriate mechanization; Strengthen crop diseases and pests monitoring; Use of appropriate technologies for both crops and livestock; Enhance soil and water conservation methods	USD 5 billion between 2016-2030
Agriculture	Strengthening drought, livestock and crop insurance mechanisms	Promote preparedness related to risk reduction; Create insurance schemes for anticipated climate risks, including drought and flood leading to crop failure	USD 5 billion between 2016-2030
Agriculture	Developing efficient value chain and marketing systems	Improve resilience of value chains for livestock, crops and forest products to facilitate production and marketing	USD 5 billion between 2016-2030
Water	Improving access to potable water	Enhance access to improved water, sanitation and health systems; Promote efficient use of water; Develop water supply and sanitation maps; Use small-scale wind and solar pump to increase water availability	USD 5 billion between 2016-2030
Water	Improving soil water harvesting and water retention mechanisms	Improve systems for soil moisture retention in arid environments; Develop water infrastructure for vulnerable people; Improve water allocation and transfer governance; Implement diversified water harvesting technologies	USD 5 billion between 2016-2030
Health	Improving human health systems through the implementation of changes based on an integrated health and environmental surveillance protocol	Increase disease surveillance to promote evidence-based policy decisions; Strengthen health systems; Emphasize climate sensitive disease prevention and management; Improve emergency medical service; Balance high population growth with economic growth; Manage indoor air pollution	USD 5 billion between 2016-2030
Transport	Building sustainable transport system	Emphasize protecting and improving the lifespan of transport infrastructure; Review transport design and safety standards; Adopt and implement an adaptation-oriented asset management; Use transport systems to facilitate movement of aid and support to climate change-affected communities	USD 5 billion between 2016-2030

Energy	Enhancing alternative and renewable power generation and management	Ensure power generation capacity withstands climate change impacts; Ensure diverse energy mix; Improve energy efficiency; Accelerate access to off-grid energy	USD 5 billion between 2016-2030
Industry	Developing adaptive industry systems	Enhance climate smart production systems and products through proper positioning of industrial parks; Improve waste management for e-wastes, liquid waste, solid wastes; Enhance efficient logistics to haul raw materials; Strengthen formal finance institutions at all administrative and management levels	USD 5 billion between 2016-2030
Forestry	Improving ecosystem resilience through conserving biodiversity	Use agro-forestry and ecosystem services as an overall adaptation strategy; Implement diverse ecosystem conservation for mountains, watersheds, dry forests, tropical forests and rangelands; Implement agro-diversity conservation and management	USD 5 billion between 2016-2030
Forestry	Enhancing sustainable forest management	Promote value added commercialization of timber and non-timber forest products along with payment for ecosystem services; Promote afforestation and reforestation practices; Implement forest health activities; Implement participatory forest management and community-based rehabilitation of degraded forests	USD 5 billion between 2016-2030
Urban settlements	Increasing resilience of urban systems	Increase the provision of housing; Improve housing conditions; Enhance urban greenery; Improve urban infrastructure; Promote efficient household/urban waste management system	USD 5 billion between 2016-2030
Ecosystem services	Strengthening sustainable natural resources management through safeguarding landscapes and watersheds	Safeguard hydropower dams; Improve ground water recharge; Minimize downstream flood risks; Rehabilitate degraded lands	USD 5 billion between 2016-2030
Vulnerable groups	Building social protection and livelihood options for vulnerable people	Put in place safety net schemes; Support asset creation; Improve access to credit; Promote livelihood diversification; Arrange voluntary resettlement/migration.	USD 5 billion between 2016-2030
Vulnerable groups	Mainstreaming endogenous adaptation practices	Emphasize recognition of traditional ecological knowledge (TEK) systems; Scale-up and incorporate TEK systems into the implementation of adaptation action and programmes	USD 5 billion between 2016-2030

DRR	Improving early warning systems	Enhance planning for disaster and climate risk management; Reinforce early warning systems related to both quick and onset disasters; Install knowledge management systems, climate information exchange systems; Enhance networking capabilities	USD 5 billion between 2016-2030
Technology and innovation	Developing and using adaptation technologies	Pursue diverse technologies that enhance CCA related to: flood control, infrastructural design, agricultural productivity, resource conservation, efficient management techniques and information management systems	USD 5 billion between 2016-2030
R&D	Reinforcing adaptation research and development	Compile and analyze meteorological data; Carry out multidisciplinary research on climate change vulnerability and impacts; Devise and arrange decision support systems; Promote environmental education system; Enhance public awareness schemes	USD 5 billion between 2016-2030

FIJI

SECTOR	OBJECTIVES	ACTIVITIES	COSTS
Food and nutrition security (crops)	n/a	Undertake regular climate change assessments and crop modelling in partnership with diverse and inclusive group of stakeholders; Strengthen Fiji's disaster preparedness efforts in the agriculture sector by encouraging agronomy practices, climate-based crop planning, and the protection, breeding, and cultivation of traditional and improved seed varieties; Increase adoption of sustainable soil and land management techniques to address soil erosion, desertification, increased soil salination	n/a
Food and nutrition security (fisheries)	n/a	Promote sustainable fisheries management and the replenishment of fish stocks through management tools such as establishment and better management of inshore and deep water marine protected and locally managed areas; Upgrade existing database to capture data on the status of inshore/coastal and offshore marine resources; Support the restoration, enhancement and conservation of coastal ecosystems such as mangroves, seagrasses and coral reefs	n/a
Health	n/a	Improve case detection and coordinated response to reduce communicable disease morbidity and mortality; Retrofit the existing and installing innovative structures, energy and water supplies; medicines and equipment efficiency; Repair and reconstruct through the 'build back better' concept of health infrastructure affected by disasters particularly TC Winston and the 2017 landslides in Qamea and St Giles Hospital; Enhance the resilience of the National Health System by developing the capacity of health workers including environmental health officers, laboratory technicians, doctors, nurses, pharmacists and other practitioners on health and climate change adaptation and disaster risk reduction; and promoting training capacities in the field of disaster medicine.	n/a

Human settlements	n/a	Scale up efforts to strengthen coastal boundaries of urban centres and rural communities through hybrid or nature-based solutions; Integrate environmental and climate risks into the new development of residential lots; Scale up efforts to upgrade existing informal settlements; Develop and support the construction of cost-effective and context-relevant disaster resilient model homesteads for both rural and urban communities.	n/a
Infrastructure (water and sanitation)	n/a	Conduct a comprehensive assessment of all of Fiji's water and sanitation infrastructure; Upgrade, repair, relocate and build new water and sanitation infrastructure; Support the use of alternative sustainable water sources (including but not limited to rainwater harvesting and desalination)	n/a
Infrastructure (energy)	n/a	Increase investments in rural mini-grids and solar home systems; Review operation of hydropower and other renewable energy facilities; Diversify renewable energy generation	n/a
Infrastructure (transport)	n/a	Strengthen and upgrade existing ports so that they are climate and disaster-resilient; Review the renewal and upgrading of water crossings on road infrastructure to ensure they can withstand current and future environmental and climate risks; Renew, upgrade, and strengthen road infrastructure including bridges	n/a
Infrastructure (hazard management)	n/a	Integrate ecosystem-based adaptation measures into considerations regarding the construction of seawalls and river banks; Create flood risk and management action plans for all human settlements which operate at the catchment scale; Improve and maintain drainage networks in urban and rural areas	n/a
Biodiversity and the Natural Environment	n/a	Prioritize and delineate critical areas for protection and sustainable management based on ecosystem services, cultural importance, biodiversity, food security and water security; Implement mangrove rehabilitation projects; Expand 'Tree-Planting Campaign' to encourage voluntary tree and/or mangrove planting activities; Identify and map 'climate-vulnerable' species of flora and fauna and their habitat	n/a

GRENADA

ADAPTATION PRIORITY PROJECTS

PROJECT TITLE	N/A
SECTOR	Water availability
CONTEXT	<p>Climate change poses a severe threat to Grenada’s water supply, given that it relies on surface water sources and rainwater catchment. Although there are watershed areas in Carriacou and Petite Martinique, catchment and storage capacity are much less. Hence rainwater harvesting and desalination activities are implemented to supply water needs. Although 54,600 cubic metres of water are available on mainland Grenada during the rainy season, yields drop to 31,800 cubic metres during the dry season. Whereas, demand is 45,500 cubic metres during rainy season and 54,600 cubic metres during dry season. Along with the increase in average temperature due to climate change, this deficit causes a serious current and potential threat as annual rainfall is projected to decrease by up to 21%, which will lead increasingly to droughts. Saltwater intrusion into coastal groundwater aquifers, due to sea level rise will further limit the availability of water in the future. In addition, the projected increased frequency of heavy rainfall events will aggravate the problem of more frequent water supply outages due to high turbidity in the raw water supply. Additionally, infrastructural damage from extreme weather events (hurricanes, storms and flooding) may interrupt reliable water distribution during and after a weather event. Apart from climate change, environmental degradation presents a number of challenges. Population growth and tourism expansion have contributed to reductions in stream and river flow volumes, increased siltation of dams and reduced groundwater recharge rates. Agricultural activities have also contributed to ground water pollution and increased demand for irrigation. These factors therefore affect the quality, quantity and availability of surface and groundwater supplies. Based on this, the water sector has been identified in a number of national policies and strategies as a key sector affected by climate change.</p>
OVERALL OBJECTIVES	A climate-responsive water governance structure is established
SPECIFIC OBJECTIVES	n/a
ACTIVITIES	<ul style="list-style-type: none"> - Integrate climate variability, land use change and the impact of increased urbanization and population on available water resources in the new water resource report or master plan. - Update data on all existing water resources (surface and ground) for Grenada, CPM, including the exact location of rain gauges in each watershed. - Develop a policy for data collection and training for staff on the importance of data.

	<ul style="list-style-type: none"> - Undertake an analysis of the amount of water needed for each housing area monthly. Update the present data base and allocate allowances for population increases over at least a ten-year period. - Calculate monthly water-budgets for each basin along with a final yearly water budget. - Conduct continuous analysis of the water budget using the rainfall, evaporation and storage data to enable the effective management of water availability and projection into short, medium- and long-term time periods. - Assess the current drainage system; identify where new drains are needed and which existing drains need widening, re-grading etc. Prioritize flood prone communities and thereafter, the major townships. - Develop alternative modalities for water resources (solar-powered desalination plant, community-based rainwater harvesting). - Develop and start the implementation of a reforestation programme to improve water catchment. - Develop public education and media campaigns on the impact of climate change on the water resources. - Promote water reclamation and re-use technologies, specifically in tourism and industry sector.
INDICATORS	55% of institutional mechanisms taken to improve planning, management and efficient use of water resources. by 2021
TIMELINE	n/a
COSTS	USD 50.2 million
STATUS	A draft Green Climate Fund (GCF) proposal was developed for the water sector entitled “Climate Resilient Water Sector in Grenada (CREWS)”. Some actions listed in this PoA have also been included in the proposal.

PROJECT TITLE	N/A
SECTOR	Food security
CONTEXT	Grenada’s mountainous topography means that it’s steep to moderately steep sloping lands are vulnerable to storms, heavy rainfall and sometimes landslides. This also means that only an estimated 3% of agricultural lands could be lost, which could incur annual costs of US\$4 million in 2050 due to 1m sea level rise. This means that the direct impacts of sea-level rise on mountainous agricultural lands would be reduced. However, widespread damage to agricultural systems is expected from salt water intrusion into coastal aquifers. Changes in rainfall and temperature raise serious concerns; lack of water available to the agricultural sector and an

increasing need for irrigation; heavy rains which erode agricultural soils, damage crops and lead to increased fertilizer runoff all of which are a threat to the integrity of the marine environment including marine protected areas. In November 2009 to June 2011, Grenada experienced the driest drought period (DSD, 2011). Long dry spells can lead to temporary food scarcity and reduced productivity of grazing pastures. Lower animal yields are expected especially in Carriacou due to reduced grass yields.

OVERALL OBJECTIVES

The foundation is laid for food availability, stability, access, and safety amidst increasing climate change risks.

SPECIFIC OBJECTIVES

- Improve availability of sector-specific climate vulnerability data;
- Improve policy, legal, regulatory and institutional framework to support climate-smart practices in agriculture and fisheries;
- Build capacity and provide technology options which ensure food security;
- Enhance social protection for farming and fishing communities;
- Improve understanding of and knowledge about climate impacts, vulnerabilities, risks and resilience options
- Mobilize funding for further resilience-building measures to ensure food security.

ACTIVITIES

- Undertake technical vulnerability analyses to improve understanding of survival and productivity of current crop varieties and consideration of alternatives;
- Conduct a vulnerability assessment of the agri-food sector, including Grenada's dependence on imported food and the associated vulnerability;
- Create incentives for the implementation of climate-smart agriculture practices;
- Introduce a construction code for hurricane resistant poultry units;
- Approve and implement (draft) National Drought Management Plan;
- Train more agricultural technicians in climate-smart agriculture techniques and in monitoring the application of the new techniques. In particular, promote the use of more drought resistant crops by famers;
- Implement rainwater harvesting (RWH) and water storage and distribution projects that adopt water management practices and technologies, including the development of RWH ponds in such a way that one pond can be used by a number of farmers, thus minimalizing the loss of land area;
- Establish a farmer field school programme to create a platform of exchange for farmers to learn from other farmers who are currently implementing climate-smart agricultural practices;
- Investigate agriculture/fishing insurance options and new risk transfer instruments and develop respective policies and incentives;
- Provide hands-on systematic climate change information to farmers and educate farmers about adaptation measures;
- Develop educational campaigns for farmers/extension officers on soil conservation practices, water conservation measures and soil water management systems and practices. Educate fisher folk on use of sustainable fishing practices e.g. appropriate fishing equipment;
- Adapt traditional pest management techniques and increase farmers' knowledge of these techniques;

	<ul style="list-style-type: none"> - Develop and mobilize resources to implement a programme of capacity-building for food insecure and vulnerable households to mitigate against livelihood losses from a variable and changing climate; - Diversify away from low yield/low return agricultural production by developing an Agricultural Export Development Training grant to support the relevant government agencies in marketing and promotions, product development and quality; - Develop at least one larger project proposal to support food security in times of climate change induced stress on the food production sector.
INDICATORS	60% of agriculture officers advising farmers to implement climate-smart agriculture (CSA) practices.
TIMELINE	n/a
COSTS	USD 46 million
STATUS	An index-based insurance product is available for farmers. The Livelihood Protection Policy (LPP) is being offered in Grenada through Trans-Nemwil Insurance Limited in collaboration with Grenada Co-Operative Bank Limited and Grenville Co-Operative Credit Union. The LPP aims to protect low-income earners, including small-holder farmers as well as day labourers in other sectors, with the intention to cover losses to people's livelihoods caused by heavy rainfall and high winds.

PROJECT TITLE	N/A
SECTOR	Ecosystem Resilience
CONTEXT	Climate change related variations in temperature, seasonal precipitation and extreme weather events, will exacerbate the effects of existing human stressors on forest ecosystems, the building and construction industry and agriculture. Decreased rainfall and increased average daily temperatures could result in a loss of rainforest zones and their possible migration to higher elevations. The structure and dynamics of tropical dry forests are driven by periods of water stress, making them vulnerable to climate change. There are increased fire risks and soil erosion and decreased water availability and pollination rates. Forest fires result from human interaction with the forest coupled with extreme dryness from droughts, leading to destruction of vegetation. Mangrove habitats are exposed to direct storm impacts and are cut down for coastal development. They are also vulnerable to projected climate change impacts such as; alterations to coastal habitats from storm surges, increased tidal action and flood durations. Sea-level rise could lead

to increased salinity within coastal habitats. There are also non-climate stressors such as; charcoal production, construction, cattle grazing and crabbing. Hurricanes can also cause serious damage to forest and forest infrastructure. Sea level rise, beach erosion, and flooding caused by heavy rains threaten the coastal areas. The damage caused by these events is made worse by destructive practices such as sand mining. Sand mining, sedimentation and careless recreational activities reduce the aesthetics and integrity of these natural resources. These threats reduce the quantity and quality of goods and services that these eco-systems provide and decrease their resilience to climate change impacts. Coral reefs play an important role as a marine ecosystem. They act as a natural barrier to storm surges and are a major tourism draw for the Caribbean. However, they have collapsed in many places, mostly due to overfishing and climate change. Warmer water can result in coral bleaching and disease outbreak. Additionally, increase in carbon dioxide that dissolves into the ocean causes ocean acidification which damages and destroy corals. Storm surges and hurricanes have degraded the coral reef further. Floating trash can also block sunlight, which adversely affects coral reef growth, often damaging marine life, such as fish and turtles. Other human stressors are; coral mining for construction and souvenirs, tourist resorts dumping sewage directly into the water, and boaters, divers, and snorkelers damaging the reefs through carelessness. Goals — Improve management and conservation of protected areas and other key ecosystems areas. Approximate Budget — USD 26.6 million Indicators — Protecting and sustainably managing 20% of Grenada’s marine, coastal and terrestrial ecosystems by 2021. Programme of Action 5: Ecosystem Resilience In Carriacou, the Sandy Island/Oyster Bed Marine Protected Area is 787 hectares consisting of Sandy Island, Mabouya Island and the surrounding seas. It is within close proximity to the capital of Carriacou (Hillsborough). The priority resources for conservation being the coral reefs, mangroves, sea turtles, beaches, offshore islands, reef fish, and sea grass beds. On mainland Grenada, the Moliniere-Beausejour Marine Protected Area (MPA) stretches from Moliniere point up to Brizan, including Dragon, Flamingo and Beausejour bays. Key hydrological features of this MPA are the rivers (Beausejour and Moliniere), that drain into it. The threats to the MPA are from low abundance of grazers on the coral reef, high nutrient concentrations resulting from run-off from neighbour communities, storm surges and hurricanes.

OVERALL OBJECTIVES	Improve management and conservation of protected areas and other key ecosystems areas.
SPECIFIC OBJECTIVES	<ul style="list-style-type: none"> - Improve policy, legal, regulatory and institutional framework to increase the resilience of important ecosystems; - Improve availability of ecosystem data and strengthen monitoring of critical ecosystems, with a particular focus on Protected Areas; - Strengthen ecosystem resilience whilst providing livelihood options; - Increase awareness about ecosystem-based adaptation and its benefits for sustainable development and coastal protection;
ACTIVITIES	<ul style="list-style-type: none"> - Develop and update existing legislation to include co-management, control the use of mangroves and to allow for contractual agreements between owners, users and government. This will support mechanisms for management of mangroves and marine protected areas by community led organizations; - Collect and analyse information on the Molinière-Beauséjour MPA, Woburn MPA and Sandy Island MPA and produce a MPA-specific database that can be accessed freely and searched by all concerned stakeholders - including water quality testing for all

	<p>MPAs on a monthly basis and identify data-sharing arrangements within Government (for example: Health, Land Use, NAWASA etc);</p> <ul style="list-style-type: none"> - Continue coral reef monitoring programme in correlation with diving pressure to define the limit of acceptable change in relation to diving frequency or maximum number of divers in one location at one time; - Update mangrove map on a regular basis and include key coastal woodland areas and identify ownership of mapped areas to strategically (re)plant littoral and mangrove forests; - Expand the MPA network by establishing five new MPAs in order to meet the goal of the Caribbean Challenge Initiative goal. This is to include Grand Anse (other areas for consideration are Gouyave, Levera, south-east coast and White Island); - Establish new and expand existing coral nursery and artificial reefs in conjunction with local coastal communities for coastal protection and research and use – where environmentally appropriate - for dive marketing; - Provide infrastructure support for the management and enforcement at new and existing MPA sites through implementation of mooring buoys, patrol boats, field offices for rangers etc; - Develop and implement a re-afforestation plan and programme to replant degraded forests in a climate-sensitive manner and identify and implement livelihood actions that support forest protection and management; - Identify sustainable practices for harvesting mangroves and implement programmes to promote sustainable use and protection of mangroves, including community co-management and alternative livelihoods; - Research options to deal with influx of sargassum and develop a plan of action to harvest and exploit the usefulness of the sargassum seaweed by networking with other OECS states, French Caribbean islands and UWI to learn and share experiences; - Conduct public awareness, educational and interpretation activities and provide information sessions for local communities, concerned authorities and stakeholders to; i) raise public awareness; ii) highlight the values, potential benefits and vulnerability of the MPA resources; iii) increase awareness of the value and vulnerability of coral reefs; iv) bring attention to the negative impact of inappropriate practices such as sand mining or non-selective fishing.
INDICATORS	Protecting and sustainably managing 20% of Grenada’s marine, coastal and terrestrial ecosystems by 2021.
TIMELINE	n/a
COSTS	USD 26.6 million
STATUS	Marine Protected Areas have been established under the Fisheries Act. Various mangrove rehabilitation efforts are taking place in the south, along the east coast and in the north of Grenada, including educational information displays (private, schools, project-funded).

PROJECT TITLE	N/A
SECTOR	Coastal zones
CONTEXT	<p>Coastal resources and infrastructure are threatened by intense weather and tropical storms which cause high winds, storm surge events and coastal flooding. Gradual and slow onset events (increases in sea surface temperatures and changes to other ocean parameters e.g. acidity, currents) will have negative impacts over time on coral reef and seagrass bed ecosystems, and the marine life that depend on the health of these systems. Dramatic changes can occur to beach profiles during a storm or hurricane event and although recovery occurs, it may not be to pre-event conditions. In addition to the natural assets, another area of critical importance is the threat of beach erosion to the majority of existing tourism facilities in areas located near the coastline (e.g. Grand Anse, Carenage, Marquis and Soubise). The greatest total land (206,133.88m²) and beach loss (54,508.88 m²) due to sea-level rise (SLR) is projected to occur in Grand Anse. Resorts impacted in this region include the Allamanda Beach Resort, Coyaba Beach Hotel, Spice Island Resort and Flamboyant Hotel. There are no beaches on the Carenage (harbour in the capital). However the total land loss from SLR, is estimated to be 18,859.95 m². Marquis is projected to have the second greatest loss of beaches (after Grand Anse), at 4,076.53 m²; with a total land loss of 9,282.35m² as a result of SLR. Total land loss at Soubise due to SLR is projected to be 13,752.85 m² (with total beach loss of 3,183.17 m²). Coastal aquifers are threatened by seawater intrusion from SLR, and this is exacerbated by a decrease in groundwater recharge through over-abstraction and decreasing rainfall. The major open wells in Carriacou and Petite Martinique are within 100m of the shoreline thus making them highly vulnerable to salt water intrusion from SLR. Storm surge events caused by tropical storms and hurricanes can also cause extensive damage to aquifers. This risk of damage increases with higher sea-levels since this makes it easier for contamination to occur during storm surges. Although not confirmed as a climate change related event, the Sargassum seaweed phenomenon (landing in unusually large quantities) may be a result of above average tropical storm activity in the Sargasso Sea. There is also concern over the risk of disease and invasive species that may accompany the seaweed. Even with all these vulnerabilities, there is currently no management framework and very little expertise on island to assess and manage these vulnerabilities. A coastal zone task force has been established. The aim is to strengthen their technical capacity through training and collection of data. Some of the existing gaps are in the area of coastal engineering and environmental law.</p>
OVERALL OBJECTIVES	The institutional, professional and technical capacity for integrated coastal zone management is built.
SPECIFIC OBJECTIVES	<ul style="list-style-type: none"> - Initiate the development a database on relevant ecosystems and coastal structures; - Improve technical capacity for integrated coastal zone management; - Improve institutional arrangements for coastal zone management;

ACTIVITIES	<ul style="list-style-type: none"> - Update existing inventory of all (private and Government) coastal structures. Based on results, develop recommendations to prevent the alteration of coastal dynamics and processes by coastal development. Recommendations should feed into correcting existing coastal structures; - Set-up a seagrass monitoring programmes with at least one annual survey to determine areal extent, presence of disease, presence of invasive species, richness, diversity and density; - Establish a Coastal Zone Unit/Board, based on the existing Coastal Zone Task Force; acquiring funds will be necessary to ensure appropriate initial staffing of the Unit/Board, including coastal engineers, GIS experts, marine biologists, environmental lawyers etc; - Continue regular meetings of the Coastal Zone Task Force. Develop Coastal Zone Management Act, based on existing Coastal Zone Management Policy; - Address sand removal (from beaches as well as off shore)
INDICATORS	A Coastal Zone Management unit is established by 2020.
TIMELINE	n/a
COSTS	USD 15 million
STATUS	A Coastal Vulnerability and Risk Assessment was conducted in 2002 (including research on beach erosion). Since 2010, sand-mining is illegal under the Beach Protection Act. However, the state-owned Gravel and Concrete Emulsion Production Corporation is allowed to engage in sand-mining, particularly at Galby Bay. The company has not been mining since April 2016 and is promoting the use of imported and quarry sand.

PROJECT TITLE	N/A
SECTOR	Resilient infrastructure and sustainable land management
CONTEXT	Land is mainly used for agriculture, forest, and built development in Grenada. Residential and agricultural expansion, coupled with industrial and commercial growth, has resulted in intense competition for land. Land use management initiatives have not adequately addressed this and as a consequence, problems of squatting, incompatible use of land, ad-hoc development and inadequate provision

for recreational and community facilities have persisted. Carriacou and Petite Martinique have a peculiar situation where, approximately 70 percent of land suitable for development is privately owned and the central ridges and high peaks are designated as forest reserves, and the largest coastal mangroves as marine protected areas. In Petite Martinique, all lands are privately owned with limited parcels acquired by the State for public use. Infrastructure includes both publicly owned and used assets (roads, telecommunications, utilities, public buildings, schools and spaces), and privately-owned buildings. Coastal infrastructure has greater exposure to sea level rise, storm surge and coastal flooding events. Most of the tourism assets, urban economic and residential infrastructure and activities in Grenada, are located along the coast. All infrastructure located in sloping areas is vulnerable to mass movement (rock fall and landslides) resulting from heavy rainfall, and fallen trees and other impacts from tropical storms and hurricane-force winds. In the past, disasters have adversely impacted infrastructure, disabling water, electricity, and telecommunication facilities for extended periods. Roads and bridges are also negatively impacted, limiting access for post disaster emergency operations. Presently, enough is not being done to upgrade the infrastructure to meet future needs and conditions in response to projected climate change impacts (SLR, storm surges, inland flooding and land slippage) and improve data collection. Communities located along low-lying coastal areas and on high risk sloping terrain, remain vulnerable to climate risks and the associated debilitating socio-economic impacts. Apart from location, structural integrity of residential infrastructure is also a significant determinant of vulnerability, especially for the poor. Other important infrastructures include the airport and seaports. The Maurice Bishop International Airport (MBIA) is considered to be the most 'at risk' airport within the CARICOM region, as it is predisposed to serious threats from sea-level rise. In this regard, detailed vulnerability assessments are needed not only for MBIA, but also Pearls (abandoned airfield) and Dumfries (new location in Carriacou) and Lauriston (the existing airport in Carriacou). There is therefore a need for data acquisition to facilitate proper planning and management. There is also a need to implement the building codes, and where applicable, to strengthen the capacity of the stakeholders (including training at tertiary level) to implement climate-resilient building practices.

OVERALL OBJECTIVES	Selected infrastructure is adequately planned, designed, properly located and maintained to be resilient to climate change, including increasingly extreme weather events; land is to be managed sustainably.
SPECIFIC OBJECTIVES	<ul style="list-style-type: none"> - Initiate the development a database on relevant ecosystems and coastal structures; - Improve technical capacity for integrated coastal zone management; - Improve institutional arrangements for coastal zone management;
ACTIVITIES	<ul style="list-style-type: none"> - Improve policy, legal, regulatory and institutional framework for resilient infrastructure and sustainable land management; - Integrate climate change considerations into the updated airport master plan; - Conduct a detailed Climate Change Vulnerability assessment for all three airports (Dumfries, Maurice Bishop, Pearls), including parking areas (sea-level rise, erosion, increased temperatures and impact on runway, flooding etc.) and implementation of first erosion control measures where required;

	<ul style="list-style-type: none"> - Conduct a strategic and climate-smart plan for inland and coastal tourism development zones with a focus on providing alternatives to coastal tourism and diversifying the tourism product to decrease ecosystem stress from coastal tourism e.g. cultural/culinary tourism, hiking, agro-tourism etc. Include results in the update of relevant tourism plans; - Establish a funding programme for improvement of vulnerable households; - Identify drainage problem areas, pumping station and prospective on-site retention locations and assess need for new drainage systems; - Establish development standards for culverts; - Compose and implement a watershed management plan, with special attention to the Harford Watershed; - Improve maintenance of existing drainage system; - Improve the use of data, GIS and remote sensing for climate change adaptation and prepare a plan of action for long-term sustainability for spatial data management; - Establish and improve capacity for risk modelling for SLR, storm surges, inland flooding and land slippage.
INDICATORS	<ul style="list-style-type: none"> - All ministries and government agencies with the mandate for land management have the capacity to use spatial data to inform decisions on sustainable land management. - Climate variability and change are integrated into policies and guidelines for physical planning and development.
TIMELINE	n/a
COSTS	USD 112.9 million
STATUS	<p>Ministry of Works is in discussion with the Caribbean Development Bank on a climate change vulnerability assessment for infrastructure along the Western Main road.</p> <p>The population of Soubise, a high disaster risk area, was relocated to a new housing scheme.</p>

PROJECT TITLE	N/A
SECTOR	DRR (disaster prevention)
CONTEXT	Climate change is a threat multiplier which will increase and intensify the impacts of weather-related hazards. Climate change adaptation and disaster risk reduction always coincide where climatic and meteorological changes have an effect on extreme natural events and thus influence the risk of disaster. Of particular relevance to Grenada are the projected increases in mean surface

temperature, the projected decrease in rainfall and the projected increases in number and intensity of tropical cyclones, viz: 1) The projected reduction in rainfall has the potential to trigger drought conditions, especially during the dry season. 2) The increased moisture in the rainfall has the potential to result in very heavy rainfall over short periods of time. This could trigger increased flash flooding in affected areas. 3) The projected increases in the number and intensity of extreme events is also an area that needs to be monitored and planned for given the relatively high incidence of tropical cyclone impacts in the historical record. Climate change has the potential to increase the wind speed, rainfall volume and severity of storm surges, the latter as a result of the overall strength of the cyclones happening in tandem with the sea level rise resulting from climate change.⁴⁸ Climate change can affect human health by giving rise to conditions that can directly kill or injure human beings, such as extreme weather events, or by creating conditions that alter disease and vector distributions.⁴⁹ Grenada is likely to experience climate change health impacts that are typical for Caribbean SIDS.⁵⁰ These include direct risks to health brought about by hurricanes, tropical storms, flooding and heavy rainfalls, but also by extreme heat. Slow-onset climate related changes such as increasing temperatures, sea-level rise, reduced annual rainfall and drought, combined with more intense rains, give rise to indirect health impacts such as shifting patterns of vector borne diseases. Grenada's First National Communication identified several human diseases of which incidences are likely to increase under climate change.⁵¹ Vector-borne diseases (particularly dengue, chikungunya and Zika virus) are a primary concern to Grenadian public health officials, given the difficulty of vector management and the outbreak prone nature of these diseases. An increase in intense rainfalls and temperatures is likely to create favorable mosquito breeding conditions, making the control of these diseases a priority in the health sector⁵². Rodent-borne diseases such as leptospirosis are prone to outbreaks during floods, when sewage can mix with drinking water supplies, increasing the risk of human infection. Moreover, heavy rainfall and hurricanes are often accompanied by an increase in water-borne diseases, when communities using pit latrines are flooded and their water supplies contaminated. Grenada's Second National Communication (SNC) is currently being prepared and will include a quantitative analysis of the diseases highlighted in the present study and their potential climate linkages.

OVERALL OBJECTIVES	<ul style="list-style-type: none"> - Funding is mobilised for the implementation of actions focusing on reducing the risks posed by extreme weather events as part of NaDMA's 5 year Country Programme (2014-2019). - Climate-sensitive disease surveillance and control is established.
SPECIFIC OBJECTIVES	<ul style="list-style-type: none"> - Mobilise funds to implement NaDMA's Country Programme (2015-2019); - Establish climate-sensitive disease surveillance and control; - Vector control capacities at community level;
ACTIVITIES	<ul style="list-style-type: none"> - Include climate-related actions from NaDMA's Country Programme (2015-2019) in NAP funding proposals; - Include climate information and improve national disease surveillance system to strengthen the analysis and use of disease data and enable forecasting and real-time outbreak monitoring; - Improve vector surveillance, especially data capture, analysis and usage, to better target control measures and save limited resources; - Limit the spread of vector borne diseases as early as possible to protect residents and tourists;

	<ul style="list-style-type: none"> - Ensure that the environmental levy is being charged for all plastics being brought on to the island, including those which are imported as preforms; - Develop a refund scheme for plastic bottles (first assessment already undertaken); - Inclusion of climate-sensitive diseases in Disaster Risk Management training; - Training of health care personnel on disaster preparedness, response and vector control measures, especially at community-level.
INDICATORS	<ul style="list-style-type: none"> - At least two (2) project proposals are submitted to potential donors and/or investors annually, starting in 2017. - Climate information has been included in national disease surveillance system to strengthen the analysis and use of climate-sensitive disease data.
TIMELINE	n/a
COSTS	Health-related budget: USD 180,000 thousand
STATUS	Grenada's draft GCF project proposals includes new or improved drinking water storage and improved plumbing and/or rainwater harvesting infrastructure at 16 community health facilities and related services in four parishes of Grenada and in Carriacou.

PROJECT TITLE	N/A
SECTOR	Climate and sea-level rise data and projections
CONTEXT	Data collection and analysis is very important for climate modelling and projections. Although the Meteorological Office within the Airport Authority of Grenada currently stores 30 years of daily rainfall data, it is used primarily to inform aviation decisions. Additional data collected for this purpose are temperature, wind, humidity, barometric pressure and visibility. However, no climate data is collected in Carriacou and Petite Martinique. In addition to the Meteorological Office, the National Water and Sewage Authority (NaWaSA), and the Land-use Division of the Ministry of Agriculture, Lands, Forestry and Fisheries both collect rainfall data for their respective uses (monitor water supply and agricultural use) but the data is not used to inform climate change decisions. There is no institution that coordinates the collection, collation, analysis and dissemination of climate-related data for all potential users including the airports, the agriculture sector, the water sector, the National Disaster Management Agency and the Ministry of Health. However, any institution that would be established has to avoid budget risks associated with loss and damage to equipment, storage,

maintenance and management of data. It should also consider the risk of 'brain drain' from trained staff who migrate abroad and a lack of equipment. In order to guarantee the usefulness of data collected, this institution would have to convert the data collected into user-friendly formats for technical and meteorological use, academia, modelling and other use. Grenada cannot access support from the World Meteorological Organisation (WMO) as it is not a member. There are no specific climate change scenarios available for Grenada so, regional data on variation in climate are usually used to conduct climate change scenarios and projections for Grenada, Carriacou and Petite Martinique.

OVERALL OBJECTIVES	Strengthened institutional arrangements for the collection, analysis and provision of climate-related data for use in decision-making.
SPECIFIC OBJECTIVES	Strengthen the collection, analysis and use of climate-related data
ACTIVITIES	<ul style="list-style-type: none"> - Establish, equip and maintain a national facility, the National Meteorological Service (own facility) that will be the main coordinator for collecting, collating, analysing and disseminating climate related data to all potential users, including the Maurice Bishop International Airport, the Agricultural Sector, the Water Sector, the National Disaster Management Agency and the Ministry of Health etc; - Develop a national climate data management policy; - Monitor and map changes in rainfall patterns, intensity and distribution (atomized weather station in all main water sheds, data easily accessible and distributed to all relevant agencies; information distributed to the public about changes/ extremes); - Become a member of the World Meteorological Organization so as to benefit from their climate information support; - Document traditional knowledge and anecdotal information on climate-related impacts to supplement gaps in the data record; - Build and maintain capacity among decision makers to access and use climate-related data.
INDICATORS	<ul style="list-style-type: none"> - The establishment by the Meteorological Office of a central repository for climate-related data that is operational with information being shared among agencies. - Establishment of the National Hydrological and Meteorological service; operationalized to collect climate-related data from all available sources to support sustainable development goals.
TIMELINE	n/a
COSTS	USD 7 million
STATUS	Grenada's draft GCF project proposals includes new or improved drinking water storage and improved plumbing and/or rainwater harvesting infrastructure at 16 community health facilities and related services in four parishes of Grenada and in Carriacou.

GUATEMALA

SECTOR	OBJECTIVE	GOAL	ACTIVITIES	OUTCOME	INDICATORS	IMPLEMENTERS	TIMELINE
Sector Salud Humana	Incrementar la capacidad de atención y prevención del sistema de salud ante la variabilidad y el cambio climático	Incrementar el porcentaje de infraestructura de atención en salud en zonas vulnerables al cambio climático, así i) primer nivel de atención: 6%; ii) segundo nivel de atención: 3%; iii) tercer nivel de atención: 0.5%	Ampliar y mejorar la infraestructura de atención en salud de primero, segundo y tercer nivel en zonas vulnerables al cambio climático. Abastecer oportunamente de equipo e insumos a los diferentes niveles de atención de salud, incluyendo los sistemas tradicionales de salud, y el programa de medicina tradicional del sistema de salud pública, priorizando los municipios vulnerables al cambio climático.	Se ha mejorado e incrementado la cobertura para la atención y prevención de la salud frente a la variabilidad y cambio climático	Numer de infraestructura hospitalaria de 1ero, 2do y 3er nivel de atención	MPSAS; IGSS; MICIV; Sociedad Civil; Pueblos indígenas; Municipalidades	Corto

Sector Salud Humana	Incrementar la capacidad de atención y prevención del sistema de salud ante la variabilidad y el cambio climático	Reducir en un 50% la cantidad de obras de infraestructura dañada o afectada por eventos extremos.	Crear mecanismos de transferencia de riesgo (seguros, reaseguro, finanzas y pago por danos) que permitan contar con disponibilidad financiera para rehabilitar infraestructura de salud; Identificar mecanismos que permitan fortalecer el fondo emergente para mitigar daños ocasionados por fenómenos naturales (Acuerdo Gubernativo 105-2012).	Se ha mejorado e incrementado la cobertura para la atención y prevención de la salud frente a la variabilidad y cambio climático	Numero de obras de infraestructura hospitalaria danada o afectada por eventos extremos (1ero, 2do y 3er nivel de atención)	MSPAS; IGSS; MINFIN; Municipalidades	Corto y Mediano
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Sector Salud Humana	Incrementar la capacidad de atención y prevención del sistema de salud ante la variabilidad y el cambio climático	Al menos un 90% de las personas afectadas durante la ocurrencia de eventos adversos derivados del cambio climático son atendidas en los aspectos de salud	Capacitar a personal institucional considerando la pertinencia cultural en los municipios vulnerables al cambio climático en atención a la respuesta y sistemas de alerta temprana,"tomando en cuenta los conocimientos de los pueblos indígenas y comunidades locales. Documentar la atención brindada a personas afectadas por enfermedades provocadas por eventos climáticos adversos. Coordinar acciones entre las instituciones públicas, sociedad civil y sector privado para dar respuesta oportuna a personas afectadas por eventos adversos. Fortalecer el programa sobre medicina tradicional que incluya el tema de prevención y atención.	Se ha mejorado e incrementado la cobertura para la atención y prevención de la salud frente a la variabilidad y cambio climático	Número de personas atendidas en relación del número de personas afectas durante la ocurrencia de eventos extremos.	MSPS; IGSS; CONRED; Municipalidades; Academia; Sociedad Civil	Corto
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<p>Zonas Marino-Costeras</p>	<p>Conservar, restaurar y manejar de manera integral y sostenible los recursos de las Zonas Marino Costeras del país, a través de la implementación de acciones para la reducción de la vulnerabilidad y adaptación de la población ante los efectos del cambio climático.</p>	<p>Incrementar al menos a 100,000 hectareas las Zonas Marino-costeras bajo algun mecanismo de conservacion, que contribuya a reducir la vulnerabilidad de los ecosistemas y de la poblacion humana y mejorar la capacidad de adaptacion frente al cambio climatico</p>	<p>Socializar la politica de zonas marino costeras, ley marco de cambio climatico, polidica de cambio climatico, el PANCC, la Politica y Estrategia del CDB y la Estrategia Nacional sobre el ecosistema mangiar y de conservacion de Tortugas y otras herramientas de politica a la sociedad civil y personal tecnico institucional ubicado en las ZMC, con pertinencia cultural. Elaborar un diagnostico y un plan para la reduccion de la vulnerabilidad ante el cambio climatico para la zona marino costera del Caribe. Implementar el plan para reducir la vulnerabilidad ante el cambio climatico para la zona marino costera del Caribe.</p>	<p>La conservacion, restauracion y manejo de los ecosistemas de las Zonas Marino-Costeras de Guatemala han contribuido a la reduccion de la vulnerabilidad y adaptacion de la poblacion ante las amenazas provocadas por el cambio climatico</p>	<p>Numero de hectareas de las zonas marin-costeras bajo algun mecanismo de conservacion (humedales de importancia internacional, areas protegidas, reservas naturales privadas y municipales, corredores biologicos, otros incentivos, acuerdos de conservacion, o mecanismo alternos)</p>	<p>MARN; CONAP: Segeplan; MAGA (INAB, DIPESCA, OCRET); MINDEF (DIGEMAR); Municipalidades; Sociedad Civil; Sector privado; Pueblos indigenas; Academia</p>	<p>Corto y mediano</p>
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<p>Zonas Marino-Costeras</p>	<p>Conservar, restaurar y manejar de manera integral y sostenible los recursos de las Zonas Marino Costeras del país, a través de la implementación de acciones para la reducción de la vulnerabilidad y adaptación de la población ante los efectos del cambio climático.</p>	<p>Mantener 18,840 ha de superficie cubierta con bosque de mangle y ecosistemas asociados en las ZMC, al 2026, que se encuentren dentro de las áreas de importancia biológica priorizadas de conservación</p>	<p>Desarrollar un programa de investigación en las áreas de importancia biológica determinadas con cobertura predominante de mangle, que incluya ecosistemas asociados para mantener su funcionalidad y proponer mecanismos de restauración ecológica del ecosistema. Desarrollar los estudios técnicos y las gestiones para acceder a incentivos forestales u otro mecanismo de conservación en las áreas priorizadas, que promuevan la protección de la cobertura, manejo sostenible y revegetación/restauración como medida para incrementar la capacidad adaptativa. Asegurar que en el proceso para acceder a los incentivos forestales haya participación mínima del 30% de las</p>	<p>La conservación, restauración y manejo de los ecosistemas de las Zonas Marino-Costeras de Guatemala han contribuido a la reducción de la vulnerabilidad y adaptación de la población ante las amenazas provocadas por el cambio climático</p>	<p>Número de hectáreas de las zonas marino-costeras bajo algún mecanismo de conservación (humedales de importancia internacional, áreas protegidas, reservas naturales privadas y municipales, corredores biológicos, otros incentivos, acuerdos de conservación, o mecanismo alternos)</p>	<p>INAB; CONAP; MRN; OCRET; Co-administradores de áreas protegidas; Municipalidades; Academia; Organizaciones locales; Organizaciones de mujeres; Congreso de la República</p>	<p>Corto</p>
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			<p>mujeres. Fortalecer al INAB, municipalidades y organizaiones locales de hombres y mujeres para acceder, implementar y monitorear incentivos de conservacion y restauracion de mangle, bosque seco y bosques de galeries en las ZMC.</p>				
<p>Zonas Marino-Costeras</p>	<p>Conservar, restaurar y manejar de manera integral y sostenible los recursos de las Zonas Marino Costeras del país, a través de la implementación de acciones para la reducción de la vulnerabilidad y adaptación de la población ante los efectos del cambio climático.</p>	<p>Aumentar en un 20% las playas bajo gestion, en funcion de los efectos del cambio climatico en las zonas marino-costeras y del incremento del nivel del mar</p>	<p>Desarrollar un programa de investigacion y monitoreo en las areas de playa de las ZMC para la priorizacion de playas en alto riesgo por efecto del aumento del nivel del mar, para desarrollar planes de contingencia</p>	<p>La conservacion, restauracion y manejo de los ecosistemas de las Zonas Marino-Costeras de Guatemala han contribuido a la reduccion de la vulnerabilidad y adaptacion de la poblacion ante las amenazas provocadas por el cambio climatico</p>	<p>Numero de hectareas de las zonas marin-costeras bajo algun mecanismo de conservacion (humedales de importancia internacional, areas protegidas, reservas naturales privadas y municipales, corredores biologicos, otros incentivos, acuerdos de conservacion, o</p>	<p>CONRED; Municipalidades; CONAP; OCRET; Academia; CONCYT; DIGI/USAC</p>	<p>Corto</p>

					mecanismo alternos)		
Zonas Marino-Costeras	Conservar, restaurar y manejar de manera integral y sostenible los recursos de las Zonas Marino Costeras del país, a través de la implementación de acciones para la reducción de la vulnerabilidad y adaptación de la población ante los efectos del cambio climático.	Mantener la superficie arrecifal de las ZMC del Caribe, bajo esquemas de manejo, conservación y monitoreo	Mantener y fortalecer el programa de investigación en los arrecifes de las ZMC (inventario de sitios y especies, impactos de la degradación, mecanismos y medidas de recuperación, entre otros). Crear y aplicar normativas y regulaciones para fomentar actividades sostenibles: pesquerías, turísticas, de navegación o tránsito marítimo, entre otros, que promuevan la conservación de las áreas arrecifales en las ZMC. Desarrollar acciones estratégicas de conservación y protección de los arrecifes de las ZMC (programas y proyectos, entre otros).	La conservación, restauración y manejo de los ecosistemas de las Zonas Marino-Costeras de Guatemala han contribuido a la reducción de la vulnerabilidad y adaptación de la población ante las amenazas provocadas por el cambio climático	Numero de hectareas de las zonas marin-costeras bajo algun mecanismo de conservacion (humedales de importancia internacional, areas protegidas, reservas naturales privadas y municipales, corredores biologicos, otros incentivos, acuerdos de conservacion, o mecanismo alternos)	CONRED; Municipaldades; CONAP; OCRET; Academia; CONCYT; DIGI/USAC; INGUAT; DIPESCA; DIGEMAR; MARN	Corto y Mediano

<p>Zonas Marino-Costeras</p>	<p>Conservar, restaurar y manejar de manera integral y sostenible los recursos de las Zonas Marino Costeras del país, a través de la implementación de acciones para la reducción de la vulnerabilidad y adaptación de la población ante los efectos del cambio climático.</p>	<p>Implementar participativamente con pescadores y entidades gubernamentales que tiene competencias en las ZMC por lo menos 5 planes de manejo pesquero con enfoque ecosistémico, para fortalecer el ordenamiento pesquero</p>	<p>Validar e implementar un sistema de información y análisis de clima y pesca para el litoral Pacífico y el mar Caribe que incluya la captura de datos y el análisis de la relación entre actividades productivas pesqueras, eventos climáticos y sus efectos sobre los océanos</p>	<p>La conservación, restauración y manejo de los ecosistemas de las Zonas Marino-Costeras de Guatemala han contribuido a la reducción de la vulnerabilidad y adaptación de la población ante las amenazas provocadas por el cambio climático</p>	<p>Número de hectáreas de las zonas marino-costeras bajo algún mecanismo de conservación (humedales de importancia internacional, áreas protegidas, reservas naturales privadas y municipales, corredores biológicos, otros incentivos, acuerdos de conservación, o mecanismos alternos)</p>	<p>OSPESCA; INSIVUMEH; DIPESCA; MARN-SINCC; DIGEMAR; OBIMAR; Cooperativas y asociaciones de pescadores</p>	<p>Corto</p>
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Zonas Marino-Costeras	Conservar, restaurar y manejar de manera integral y sostenible los recursos de las Zonas Marino Costeras del país, a través de la implementación de acciones para la reducción de la vulnerabilidad y adaptación de la población ante los efectos del cambio climático.	Reducir el en al menos 25% las pérdidas y daños humanos, infraestructura productiva y de servicios básicos por tipo de evento en las ZMC.	Desarrollar un programa de contingencia, basado en ciencia, que considere: a) Línea base de vulnerabilidad en infraestructura productiva, bienes y servicios, medios de vida y servicios básicos de la población b) Registro de daños y pérdidas histórico por tipo de evento para identificar áreas vulnerables, en las ZMC.	Las pérdidas y daños humanos y de infraestructura productiva y de servicios básicos ubicada en las zonas marino-costeras se han reducido por la implementación de acciones de prevención, preparación y respuesta	Porcentaje de pérdidas y daños humanos, infraestructura productiva y de servicios básicos por tipo de evento en la zona marino costera.	CONRED-COE MSPASM, ICIVI, MAGA, MARN (Municipalidades Academia	Corto
Agricultura, ganadería y seguridad alimentaria	Incrementar la producción de alimento (animal y vegetal) a través de la implementación de acciones de adaptación que	Aumentar en 10% por ciento la producción de alimentos con énfasis en granos básicos, cultivos tradicionales y no tradicionales, por medio de la	Consolidar y mantener la red de monitoreo de variables meteorológicas para alimentar los modelos climáticos disponibles para el país, así como la comunicación y difusión de la red.	Se ha incrementado la producción de alimento (granos básicos, cultivos tradicionales y no tradicionales,	Porcentaje de la producción (Granos básicos, cultivos tradicionales y no tradicionales, ganado mayor	INSIVUMEH; MARN; SESAN; MAGA; Municipalidades; Academia; Sociedad Civil; Sector Privado; Pueblos Indígenas	Corto y Mediano

	<p>conlleven a reducir la vulnerabilidad de las familias afectadas por efectos del cambio climático y a garantizar su seguridad alimentaria y nutricional</p>	<p>adaptación al cambio climático.</p>	<p>Disenar e implementar metodologías de medición, captura y análisis de información para la construcción de índices de capacidad adaptación y vulnerabilidad al cambio climático, para emplear estrategias y priorizar áreas vulnerables. Regular la participación y fortalecer los Sistemas de Alerta Temprana de eventos climáticos extremos, en inseguridad alimentaria y nutricional, pronóstico de cosechas y para zonas agrícolas vulnerables, considerando conocimientos ancestrales.</p>	<p>granado mayor y menor).</p>	<p>y menor).</p>		
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<p>Agricultura, ganadería y seguridad alimentaria</p>	<p>Incrementar la producción de alimento (animal y vegetal) a través de la implementación de acciones de adaptación que conlleven a reducir la vulnerabilidad de las familias afectadas por efectos del cambio climático y a garantizar su seguridad alimentaria y nutricional</p>	<p>Reducir en 5 por ciento las pérdidas ocasionadas respecto al área sembrada por efectos del cambio climático en el sector agropecuario.</p>	<p>Implementar buenas prácticas para el manejo pre y post cosecha (granos básicos). Identificación e Implementación de agro cadenas de valor que permitan transitar de una agricultura de subsistencia hacia una agricultura sostenible, en productos tradicionales y no tradicionales. Fortalecer el sistema de monitoreo de información para la captura y análisis de pérdidas y daños por tipo de amenaza. Promover la diversificación agropecuaria adaptada al cambio climático y a zonas agroecológicas</p>	<p>Se han reducido las pérdidas y daños provocados por eventos climáticos extremos en el sector agropecuario</p>	<p>Porcentaje de pérdidas en el sector agropecuario. En base al área sembrada de cultivos de importancia para la seguridad alimentaria.</p>	<p>MAGA; Municipales; Academia; Cooperación Internacional; CAMARGO; Pueblos Indígenas</p>	<p>Corto</p>
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Agricultura, ganadería y seguridad alimentaria	Incrementar la producción de alimento (animal y vegetal) a través de la implementación de acciones de adaptación que conlleven a reducir la vulnerabilidad de las familias afectadas por efectos del cambio climático y a garantizar su seguridad alimentaria y nutricional	Aumentar en 15 por ciento la superficie manejada con enfoque agroecológico (certificaciones)	Investigar, Promocionar e incentivar el establecimiento de sistemas productivos de agricultura sostenible adaptada al clima, en productos tradicionales y no tradicionales que generan ingresos a la Nación. (Café, Hule, Cacao, especies Levantar la línea base de áreas de producción agroecológica. Promover y establecer la certificación de fincas productivas agroecológicas.	Se ha aumentado el porcentaje del territorio nacional manejado con enfoque agroecológico sostenible y adaptado a la variabilidad climática	Porcentaje de la superficie manejada con enfoque agroecológico (certificación nacional o internacional).	INAB; MAGA; ICTA; MARN; Sector privado; Academia; Consumidores; Pueblos Indígenas; ANACAFE	Mediano
Recursos forestales, ecosistemas y áreas protegidas	Conservar, proteger, restaurar y hacer uso sostenible de los recursos forestales y la biodiversidad de Guatemala para la adaptación al	Al menos 34 por ciento del territorio nacional se encuentra cubierto por bosques que conforman ecosistemas saludables productivos tanto	Crear mecanismos eficientes de coordinación interinstitucional, así como mejorar y fortalecer capacidades institucionales para la administración de los recursos forestales.	Se han generado bienes económicos y ambientales para la población que han contribuido a reducir la vulnerabilidad	Cobertura forestal del país.	INAB; CONAP; Municipalidades; MARN; MAGA; MINGOB; Organismo Judicial; Ministerio Público; Comunidades; Pueblos	Corto

	<p>cam6io climático.</p>	<p>de bienes como de servicios ecosistémicos.</p>	<p>Fortalecer las capacidades financieras de las instituciones encargadas de la administración de los recursos forestales, biodiversidad y áreas protegidas del país en correspondencia a las metas nacionales vinculadas. Crear plataformas que aborden los vacíos en la legislación nacional en materia forestal, de diversidad biológica y áreas protegidas que involucren mecanismos de coordinación eficientes a nivel interinstitucional e intersectorial. 10 En coordinación con organizaciones locales, regionales y pueblos indígenas.</p>	<p>ante las amenazas inducidas por el cambio climático</p>		<p>Indigenas; Sector Privado; Sociedad Civil</p>	
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Recursos forestales, ecosistemas y áreas protegidas	Conservar, proteger, restaurar y hacer uso sostenible de los recursos forestales y la biodiversidad de Guatemala para la adaptación al cambio climático.	Se ha incrementado en un 3 por ciento la cobertura forestal por medio de la restauración ecológica	Implementar proyectos de restauración del paisaje forestal considerando lineamientos de manejo forestal, la capacidad de uso de la tierra, aspectos sociales, económicos y financieros, la estrategia nacional para la restauración del paisaje forestal, la política y estrategia nacional de diversidad biológica, entre otros	Se han generado bienes económicos y ambientales para la población que han contribuido a reducir la vulnerabilidad ante las amenazas inducidas por el cambio climático	Cobertura forestal del país.	INAB; CONAP; Municipalidades; MARN; MAGA; Comunidades; Pueblos Indígenas; Sector Privado; Sociedad Civil	Corto
Recursos forestales, ecosistemas y áreas protegidas	Conservar, proteger, restaurar y hacer uso sostenible de los recursos forestales y la biodiversidad de Guatemala para la adaptación al cambio climático.	Mantener no menos del 2.6 por ciento de la superficie terrestre cubierta por plantaciones forestales	Promover la restauración a través de plantaciones forestales con fines de producción, priorizando tierras con esta capacidad de uso. Considerando las salvaguardas ambientales y sociales. Implementar proyectos de incentivos forestales para el establecimiento de plantaciones con fines de producción, involucrando a grupos organizados a nivel	Se han generado bienes económicos y ambientales para la población que han contribuido a reducir la vulnerabilidad ante las amenazas inducidas por el cambio climático	Cobertura forestal del país.	INAB; CONAP; Municipalidades; MAGA; Pueblos Indígenas; Sector Privado; Sociedad Civil	Corto

			comunal y pueblos indígenas				
Recursos forestales, ecosistemas y áreas protegidas	Conservar, proteger, restaurar y hacer uso sostenible de los recursos forestales y la biodiversidad de Guatemala para la adaptación al cambio climático.	2 por ciento de incremento de la superficie bajo la categoría de manejo de bosques comunal	Actualizar e implementar la estrategia nacional para el manejo y conservación de recursos naturales en tierras comunales	Se han generado bienes económicos y ambientales para la población que han contribuido a reducir la vulnerabilidad ante las amenazas inducidas por el cambio climático	Cobertura forestal del país.	CONAP; INAB; RIC; MARN; OJ; Comunidades; Pueblos Indígenas; Municipalidades; Sociedad civil	Corto
Recursos forestales, ecosistemas y áreas protegidas	Conservar, proteger, restaurar y hacer uso sostenible de los recursos forestales y la biodiversidad de Guatemala para la adaptación al cambio climático.	Menos del 14 por ciento de las especies se encuentran en peligro de extinción	Fortalecer e implementar la estrategia interinstitucional de Combate a la Tala Ilicita	Se han generado bienes económicos y ambientales para la población que han contribuido a reducir la vulnerabilidad ante las amenazas inducidas por	Cobertura forestal del país.	INAB; CONAP; Pueblos indígenas; Municipalidades; MARN; MAGA; MINGOB; Ministerio Público; Organismo Judicial; Sector Privado	Corto

				el cambio climatico			
Recursos forestales, ecosistemas y areas protegidas	Conservar, proteger, restaurar y hacer uso sostenible de los recursos forestales y la biodiversidad de Guatemala para la adaptación al cambio climático.	No más del 5 por ciento del área incorporada al manejo forestal y bajo conservación es afectada por incendios forestales.	Fortalecer e implementar la Estrategia Nacional de Manejo de Fuego. Fortalecer las capacidades financieras, de Gestión y Coordinación para la Prevención y Control de Incendios Forestales en Guatemala. Establecer e implementar un sistema de alerta temprana que permita la detección y control en tiempo oportuno de incendios forestales, con participación y coordinación con grupos organizados en las comunidades y las municipalidades. Identificar, promover e implementar alternativas a la agricultura de corta y quema	Se han generado bienes económicos y ambientales para la población que han contribuido a reducir la vulnerabilidad ante las amenazas inducidas por el cambio climático	Cobertura forestal del país.	INAB; CONAP; CONRED; Sociedad civil; Sector Privado; Pueblos indígenas; MDN; SEP; MARGN; MAGA; ANAM	Corto

			para evitar incendios forestales, y degradación de los ecosistemas, pérdida de la diversidad biológica y deterioro de los recursos naturales por la actividad antrópica.				
Recursos forestales, ecosistemas y áreas protegidas	Conservar, proteger, restaurar y hacer uso sostenible de los recursos forestales y la biodiversidad de Guatemala para la adaptación al cambio climático.	No más del 5 por ciento del área incorporada al manejo forestal y bajo conservación es afectada por plagas y enfermedades	Definir e implementar la Estrategia Nacional de Sanidad Forestal.	Se han generado bienes económicos y ambientales para la población que han contribuido a reducir la vulnerabilidad ante las amenazas inducidas por el cambio climático	Cobertura forestal del país.	INAB; CONAP; MARN; Academia; Sector privado; Municipalidades; Pueblos indígenas; Sociedad civil	Corto
Recursos forestales, ecosistemas y áreas protegidas	Conservar, proteger, restaurar y hacer uso sostenible de los recursos forestales y la biodiversidad	Aumentar la superficie bajo regímenes de protección y manejo sostenible, priorizando aquellos	Incrementar la extensión y número de áreas protegidas, priorizando ecosistemas escasamente representados en el SIGAP, y promover la inclusión de nuevas	Se han generado bienes económicos y ambientales para la población que han	Porcentaje del territorio nacional que se encuentra bajo áreas protegidas	CONAP; INAB; MARN; Municipalidades; Comunidades; Sector Privado; Sociedad civil;	Mediano

	de Guatemala para la adaptación al cambio climático.	ecosistemas escasamente representados en el SIGAP	categorías de manejo de áreas de gestión colectiva desde la cosmovisión de los pueblos indígenas y comunidades locales. Implementar corredores biológicos para el establecimiento de áreas de escape que incluya conservación, restauración y manejo de biodiversidad	contribuido a reducir la vulnerabilidad ante las amenazas inducidas por el cambio climático		Pueblos Indígenas	
Recursos forestales, ecosistemas y áreas protegidas	Conservar, proteger, restaurar y hacer uso sostenible de los recursos forestales y la biodiversidad de Guatemala para la adaptación al cambio climático.	Áreas protegidas con ecosistemas prioritarios en proceso de restauración	Llevar a cabo procesos de restauración ecológica en ecosistemas forestales y no forestales, tendientes a restaurar y mejorar la provisión de bienes y servicios ecosistémicos, promoviendo así la mitigación y adaptación de la diversidad biológica y sociedad guatemalteca al cambio climático	Se han generado bienes económicos y ambientales para la población que han contribuido a reducir la vulnerabilidad ante las amenazas inducidas por el cambio climático	Porcentaje del territorio nacional que se encuentra bajo áreas protegidas	CONAP; INAB; MARN; MAGA; Municipalidades; Comunidades; Sector Privado; Sociedad civil; Pueblos Indígenas	Corto

Recursos forestales, ecosistemas y áreas protegidas	Conservar, proteger, restaurar y hacer uso sostenible de los recursos forestales y la biodiversidad de Guatemala para la adaptación al cambio climático.	Superar los 600 puntos en la efectividad de manejo del SIGAP	Incrementar la inversión (pública y privada) como mínimo en un 50 por ciento para mejorar la efectividad de manejo y conservación de las áreas protegidas	Se han generado bienes económicos y ambientales para la población que han contribuido a reducir la vulnerabilidad ante las amenazas inducidas por el cambio climático	Porcentaje del territorio nacional que se encuentra bajo áreas protegidas	MINFIN; CONAP; INAB; MARN	Mediano
Infraestructura	Mejorar y construir infraestructura socio-vital (sistemas de saneamiento básico) y estratégicas (escuelas, carreteras, puentes, hospitales, etc.) considerando en el diseño la variabilidad climática, la	a) Aumentar anualmente las municipalidades que cuentan con reglamentos de construcción. b) Aumentar en un 5 por ciento la infraestructura estratégica, principalmente la red vial, que incluya estándares de construcción que	Actualizar y aplicar estándares y regulaciones de construcción y mantenimiento para infraestructura socio-vital y estratégica, considerando además las toponimias, los sistemas propios y locales de construcción culturalmente apropiados. Desarrollar mecanismos de verificación de la inclusión de estándares de construcción de	Infraestructura socio-vital ha sido construida y mejorada considerando estándares de construcción de adaptación al cambio climático.	a) Número de municipalidades que cuentan con reglamentos de construcción. b) Número de infraestructura socio-vital y estratégica que incluye estándares de construcción que consideran factores de	Municipalidades; CIV; UNEPAR; SE-CONRED; CEPREDNAC; AGIES; Sociedad Civil; Sector Privado; Academia; Pueblos indígenas; COGUANOR	Corto y Mediano

	gestión de riesgo y la vulnerabilidad y planes de ordenamiento territorial	consideran factores de riesgo, cambio climático y ordenamiento territorial en el ciclo de vida del proyecto (pre-inversión, inversión, post-inversión). c) Reducir en un 5 por ciento la infraestructura vial afectada por eventos extremos.	infraestructura socio-vital estratégica en el ciclo de proyectos (pre-inversión, inversión, post-inversión). Revisar o actualizar reglamentos Municipales de construcción. Desarrollar metodologías y aplicar evaluaciones e impactos y pérdidas ante la ocurrencia de eventos adversos que afecten la infraestructura socio-vital y estratégica.		riesgo, cambio climático y ordenamiento territorial en el ciclo de vida del proyecto (pre-inversión, inversión, post-inversión). e) Nivel de infraestructura socio-vital y estratégica dañada o afectada por eventos extremos.		
Gestión integrada de los recursos hídricos	Gestionar sosteniblemente los recursos hídricos del país para garantizar la conservación de las cuencas hidrográficas, el acceso de la población guatemalteca al agua, para sustentar los	Para el año 2025 el país dispone de una Ley de Aguas con instrumentos operativos funcionando	Crear y fortalecer la normativa nacional y municipal, para la conservación, protección y aprovechamiento eficiente y sostenible de los recursos hídricos con pertinencia cultural y enfoque de género. Elaborar el conjunto de reglamentos y normas técnicas para aplicar eficaz y eficientemente	Los recursos hídricos se gestionan sosteniblemente a través de la implementación de prácticas integrales	Se dispone de una ley de Aguas y sus instrumentos operativos	Presidencia de la República; Organismo legislativo; Pueblos indígenas; Sector privado; Sector civil; Academia; Municipalidades	Mediano

	<p>usos económicos de la misma, controlar la contaminación y reducir su vulnerabilidad ante los efectos de la variabilidad y el cambio climático</p>		<p>la ley, a nivel nacional y municipal</p>				
<p>Gestion integrada de los recursos hídricos</p>	<p>Gestionar sosteniblemente los recursos hídricos del país para garantizar la conservación de las cuencas hidrográficas, el acceso de la población guatemalteca al agua, para sustentar los usos económicos de la misma, controlar la contaminación y reducir su vulnerabilidad</p>	<p>Se han inventariado los usos existentes y se han transformado en derechos de agua inscritos en un registro administrativo, basando en la disponibilidad real de las fuentes de agua</p>	<p>Crear y mantener el sistema nacional de información, conocimiento y valoración del agua. Establecer el inventario de las aguas, el catastro de los usos y el registro de derechos de agua.</p>	<p>Los recursos hídricos se gestionan sosteniblemente a través de la implementación de prácticas integrales</p>	<p>Se dispone de una ley de Aguas y sus instrumentos operativos</p>	<p>Nueva autoridad nacional para el agua; Pueblos indígenas; Sector privado; Sector civil; Academia; ANAM, INFOM, MARN, MAGA, MEM, AGAAI, CONAP, INAB</p>	<p>Mediano</p>

	ante los efectos de la variabilidad y el cambio climático						
Gestion integrada de los recursos hidricos	Gestionar sosteniblement e los recursos hídricos del país para garantizar la conservación de las cuencas hidrográficas, el acceso de la población guatemalteca al agua, para sustentar los usos económicos de la misma, controlar la contaminación y reducir su vulnerabilidad ante los efectos de la variabilidad y el cambio climático	Se ha estimado el aporte del agua a la sociedad (salud) y a la economía (usos productivos) y se ha estimado el costo que los danos provocados por eventos hidroclimatológicos significan para la sociedad y la economía (se ha establecido si mantener el status quo es mas barato que intervenir en la adaptacion al cambio climatico)	Estudio sobre el valor del agua para el desarrollo nacional, expresado en unidades economicas, diferenciando lo que rapresenta para la sociedad, la economía y el ambiente. Estimar la inversion publica requerida para obras de regulacion de interes publico. Estimar el costo de la administracion del agua.	Los recursos hidricos se gestionan sosteniblement e a traves de la implementacion de practicas integrales	Se ha valorado el aporte del agua al desarrollos economico y social	Ministero de finanzas publicas, Autoridad del agua y autoridad del CC	Corto

<p>Gestion integrada de los recursos hidricos</p>	<p>Gestionar sosteniblement e los recursos hídricos del país para garantizar la conservación de las cuencas hidrográficas, el acceso de la población guatemalteca al agua, para sustentar los usos económicos de la misma, controlar la contaminación y reducir su vulnerabilidad ante los efectos de la variabilidad y el cambio climático</p>	<p>Se ha planteado y puesto en marcha la planificación para la gestión adaptativa de los recursos hídricos</p>	<p>Laborar y poner en marcha el programa nacional de obras de regulación del agua, priorizando las áreas en donde se combina la vulnerabilidad natural con la pobreza. Elaborar y poner en marcha planes sectoriales de uso y conservación para la gestión adaptativa del agua (doméstico, agrícola, industrial, energético, turismo)</p>	<p>Los recursos hídricos se gestionan sosteniblemente a través de la implementación de prácticas integrales</p>	<p>Se ha integrado la variable de cambio climático a la gestión y planificación del agua</p>	<p>Autoridad del agua y autoridad del CC; Municipalidades</p>	<p>Corto</p>
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<p>Gestion integrada de los recursos hidricos</p>	<p>Gestionar sosteniblement e los recursos hídricos del país para garantizar la conservación de las cuencas hidrográficas, el acceso de la población guatemalteca al agua, para sustentar los usos económicos de la misma, controlar la contaminación y reducir su vulnerabilidad ante los efectos de la variabilidad y el cambio climático</p>	<p>Al año 2032, el 100 por ciento de las zonas consideradas con muy alta capacidad de regulacion y captacion hidrologica estan protegidas y manejadas sosteniblemente con enfoque de cuencas hidrologicas y ordenamiento territorial con pertinencia cultural y enfoque de genero de acuerdo con el context social</p>	<p>Determinar a nivel nacional los sitios prioritarios para la conservacion, proteccion, manejo y restauracion de zonas de captacion, almacenamiento y regulacion hidrologica, considerando el contexto socioeconomico de la poblacion y la organizacion existentes.</p>	<p>Los recursos hidricos se gestionan sosteniblement e a traves de la implementacion de practica integrales</p>	<p>Porcentaje de zonas consideradas de muy alta capacidad de regulacion y captacion hidrologicas es protegido y manejado sosteniblement e con enfoque de cuenca</p>	<p>MARN; INAB; CONAP; MAGA; MEM</p>	<p>Mediano</p>
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KENYA

ADAPTATION PRIORITY PROJECTS

PROJECT TITLE	N/A
SECTOR	Energy
CONTEXT	Efficient and reliable energy supply is fundamental for development of all sectors of the economy. In the past there has been heavy reliance on hydro power plants for energy production, which over recent years have demonstrated vulnerability to extreme events such as droughts and floods, projected to become more frequent with climate change. Programmes are under way to promote renewable energy, energy efficiency and extending access to electricity across the country. Rigorous incorporation of climate change considerations into current and future sectoral actions is required to build a resilient energy system that reinforces Kenya's development. Access to reliable, affordable energy is a key component of building climate resilience.
OVERALL OBJECTIVE	Enhance implementation of an energy generation mix plan that increases the resilience of the current and future energy systems to the impacts of future climate variability and change.
ACTIVITIES	<p>Short-term actions: Conduct risk and vulnerability assessments of energy infrastructure; Increase the solar, wind and other renewable energy systems network to provide power to off-grid areas</p> <p>Medium-term actions: Increase small hydropower and geothermal power generation plants to provide electricity to communities and businesses in the rural areas enabling job creation; Promote energy efficiency programmes</p> <p>Long-term actions: Continue the rehabilitation of water catchment areas in order to provide sustainable ecosystem services, including energy production</p>
IMPLEMENTERS	Ministry responsible for energy, MDAs, County Governments, research institutions and academia, civil society and private sector.
COSTS	USD 3.5 billion

PROJECT TITLE	N/A
SECTOR	Infrastructure

CONTEXT	The built environment, public facilities, and infrastructure that underpin social and economic systems will be under increasing pressure to meet changing user needs (as exposures and vulnerabilities increase) in a changing climate. The physical fabric of existing buildings and public works are also at risk and vulnerable to climate variability and change. For instance, increased flooding in urban areas and droughts that drive rural populations to urban areas in search of assistance and employment increase demand on public facilities. Mainstreaming climate change adaptation into the operational management of existing assets and the design of new assets is essential. For the transport sector, an efficient and accessible transportation network underpins the operation of all sectors of the economy. Kenya's transport sector faces several challenges that are identified in the sectoral development plans. Extreme weather events and in particular flooding have already demonstrated the vulnerability of the transport sector in Kenya. The information and communication technologies (ICT) sector is important for Kenya's national prosperity. To boost economic development, several programmes were rolled out to increase country coverage, reliability, and drive down the costs of ICT across the country. In the changing climate, the physical structure of ICT needs to be climate-proofed to avoid interruptions. Moreover, ICT enables information and knowledge sharing, playing an important role in building adaptive capacity of the population and economy.
OVERALL OBJECTIVE	Enhance climate proofing of infrastructure.
ACTIVITIES	<p>Short-term actions: Conduct risk and vulnerability assessments of existing infrastructure; Conduct risk and vulnerability assessments of upcoming infrastructure (roads, railways, marine, aviation, buildings, ICT); Conduct capacity building on infrastructure climate proofing</p> <p>Medium-term actions: Climate proof buildings, roads, railway, marine, aviation and ICT infrastructure through use of appropriate designs and building materials</p> <p>Long-term actions: Re-assess infrastructure vulnerability and upgrade infrastructure to withstand climate impacts with the latest technology</p>
IMPLEMENTERS	Ministry(ies) responsible for Infrastructure development, MDAs, County Governments, research institutions and academia, civil society and private sector
COSTS	USD 20.3 billion

PROJECT TITLE	N/A
SECTOR	Health

CONTEXT	Kenya's recent improvements in malarial control, water-borne diseases, infant mortality and malnutrition are vulnerable to set backs from climate change. Impacts on water quality, water resources, changes in habitat, increasing exposure of vulnerable groups, sanitation and drainage, and vector-borne diseases are all areas for concern. These and many other potential impacts require not only continued investment and focus on climate sensitive health issues, but also full integration of climate change into Kenya's many existing health programmes and policies. More action and support is required to achieve Kenya's development goals and protect vulnerable populations.
OVERALL OBJECTIVE	Strengthen integration of climate change adaptation into the health sector.
ACTIVITIES	<p>Short-term actions: Undertake a climate vulnerability and risk assessment of the impacts of climate change and variability on human health; Increase public awareness and social mobilisation on climate change and impacts on health</p> <p>Medium-term actions: Design appropriate climate change related interventions for the health sector; Design appropriate measures for surveillance and monitoring of climate change related diseases in order to enhance early warning systems which includes enhancing existing databases on health sector indicators amongst others</p> <p>Long-term actions: Upscale results of pilot projects in climate change adaptation in the health sector</p>
IMPLEMENTERS	Ministry responsible for health, MDAs, County Governments, research institutions and academia, civil society and private sector.
COSTS	USD 40 million

PROJECT TITLE	N/A
SECTOR	Water and sanitation
CONTEXT	The impacts of climate change lead to increasing scarcity of water especially in the ASAL region, meaning that Kenya requires adequate water management strategies that take into account the sector's vulnerability to climate change. The water sector needs to identify current and future vulnerabilities and develop strategies and plans to manage water sources, basins, water supply and waste water. Large-scale irrigation projects need to be planned appropriately as adaptation measures.
OVERALL OBJECTIVE	Mainstreaming of climate change adaptation in the water sector.

ACTIVITIES	<p>Short-term action: Promote awareness on climate change impacts and the water sector including promoting public awareness on water conservation (recycling, waste water management) and efficient water use; Promote the use of efficient irrigation systems</p> <p>Medium-term action: Enhance collaboration of trans boundary water resource management; Strengthen water resource monitoring and assessment for early warning and planning</p> <p>Long-term action: Implement the National Water Master Plan</p>
IMPLEMENTERS	Ministry responsible for water and sanitation, MDAs, County Governments, research Institutions and Academia, Civil Society and Private Sector.
COSTS	USD 5 billion

PROJECT TITLE	N/A
SECTOR	Urban areas
CONTEXT	A key challenge for Kenya's sustainable development is ensuring that its large and growing population is provided safe and secure housing. However, many homes and critical infrastructure are not resilient to the impacts of climate change. A major area of concern, particularly as Nairobi and other urban areas grow, is that marginal lands vulnerable to hazards such as flooding are becoming increasingly densely populated and in particular by more vulnerable poorer people. Ensuring that continued population growth is matched with climate resilient urban development and green housing programmes is critical for Kenya's sustainable development and will provide a foundation for improving health and safety.
OVERALL OBJECTIVE	Enhance the adaptive capacity of the population, urbanisation, and housing sector.
ACTIVITIES	<p>Short-term action: Conduct climate risk and vulnerability assessment of the sector; Increase awareness on impacts of climate change on population and housing</p> <p>Medium-term action: Strengthen the enforcement of building codes by national and county governments; Integrate adaptation into relevant building and urban planning policies and regulations</p> <p>Long-term action: Enhance the adaptive capacity of the urban poor by increasing the number of affordable housing and related infrastructure</p>

IMPLEMENTERS	Ministry(ies) responsible for population, urbanisation and housing, County Governments, research institutions and academia, civil society and private sector.
COSTS	USD 2.9 billion

PROJECT TITLE	N/A
SECTOR	Tourism
CONTEXT	The tourism sector, accounts for around 10 per cent of Kenya’s GDP, and contributes towards eradication of poverty by providing employment opportunities. Continuing growth in this sector to achieve its MTP goal depends on the adequate development of infrastructure, transport, and human resource skills; a stable internal security, and ecosystem protection. Climate change has the potential to restrict the expansion of the tourism sector through infrastructural disruptions, loss and degradation of natural habitats, and changes in demand. Adaptation actions are required to ensure long-term sustainable growth of the tourism industry and its positive contribution to the economy.
OVERALL OBJECTIVE	Enhance the resilience of the tourism value chain.
ACTIVITIES	<p>Short-term action: Conduct a climate risk and vulnerability assessment of the tourism sector; Build capacity and raise awareness on impacts of climate change on the tourism sector to relevant departments and partners</p> <p>Medium-term action: Enhance the diversification of climate resilient tourism products; Design a pilot project that enhances resilience in the tourism sector</p> <p>Long-term action: Upscale successful pilot projects</p>
IMPLEMENTERS	Ministry responsible for tourism, MDAs, County Governments, research institutions and academia, civil society and private sector.
COSTS	USD 2.3 billion

PROJECT TITLE	N/A
SECTOR	Agriculture
CONTEXT	The production of food crops, industrial crops and horticultural products contributes to 25 per cent of the country's GDP, supporting small-scale subsistence farmers, contributing to food security and delivering foreign exchange earnings. The agricultural sector, however, is very climate sensitive and is negatively affected by current climate variability (such as drought, flooding, and erratic and intense rainfall), leading to reduced productivity and insecure livelihoods. Negative impacts are also projected under future climate scenarios for many parts of the county, while some agricultural areas and products are projected to improve. Promotion of sustainable climate smart agriculture methods is key to making the sector more resilient to the impacts of climate change.
OVERALL OBJECTIVE	Enhance the resilience of the agricultural value chain.
ACTIVITIES	<p>Short-term action: Promote indigenous knowledge on crops; Increase awareness on climate change impacts on the agriculture value chain; Promote new food habits</p> <p>Medium-term action: Establish, maintain and promote the uptake of climate change related information on agriculture; Develop and up-scale specific adaptation actions - promotion and bulking of drought tolerant traditional high value crops; water harvesting for crop production; index-based weather insurance etc</p> <p>Long-term action: Promote and implement climate smart agriculture practices in Kenya</p>
IMPLEMENTERS	Ministry responsible for agriculture and MDAs, County Governments, research institutions and academia, civil society and private sector.
COSTS	USD 375 million

PROJECT TITLE	N/A
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	intense rainfall), leading to reduced productivity and insecure livelihoods. Negative impacts are also projected under future climate scenarios for many parts of the county, while some agricultural areas and products are projected to improve. Promotion of sustainable climate smart agriculture methods is key to making the sector more resilient to the impacts of climate change.
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IMPLEMENTERS	Ministry responsible for agriculture and MDAs, County Governments, research institutions and academia, civil society and private sector.
COSTS	USD 375 million

PROJECT TITLE	N/A
SECTOR	Livestock
CONTEXT	Livestock and dairy production are key components of the Kenyan economy. The sector includes pastoralists in the ASAL areas where livestock production accounts for almost 90 per cent of employment opportunities, and livestock farmers working under intensive ranching and smallholder systems. It provides subsistence livelihoods, contributes to food security and delivers export earnings. The livestock sector is very climate sensitive and is experiencing negative impacts from current climate (such as drought that increases livestock morbidity and mortality). Conditions are projected to worsen in some areas over time (for example, rural livelihoods will be threatened by the increased magnitude and frequency of drought and flooding), and improve in others.
OVERALL OBJECTIVE	Enhance the resilience of the livestock value chain.

ACTIVITIES	<p>Short-term action: Increase awareness on climate change impacts on the livestock sector; Strengthen land use management systems including rangeland management, fodder banks and strategic reserves</p> <p>Medium-term action: Promote livelihood diversification and market access (camels, indigenous poultry, beekeeping, rabbits, emerging livestock - quails, guinea fowls, ostriches etc.); Restore degraded grazing lands</p> <p>Long-term action: Enhance selection, breeding and management of animals to adapt to climate change; Promote climate smart agriculture</p>
IMPLEMENTERS	Ministry responsible for livestock development, MDAs, County Governments, research institutions and academia, civil society and private sector.
COSTS	USD 300 million

PROJECT TITLE	N/A
SECTOR	Fisheries
CONTEXT	The fisheries sector contributes approximately 5 per cent of Kenya's GDP and supports approximately one million people directly and indirectly (working as fisherpersons, traders, processors, suppliers and merchants). About 90 per cent of people engaged in the sector rely on fish from freshwater bodies, particularly Lake Victoria. The sector is highly climate sensitive. The 2008-2011 drought led to reduced inflow into and high evaporation from lakes and reservoirs, which in turn reduced breeding and fishing grounds, and led to declines in fish stocks. Coastal regions also have been affected. For example, coral reefs have faced significant climate-induced coral bleaching and mortality events which threaten fisheries resources. While research has been limited on climate change impacts on fishing in Kenya, particularly on freshwater fishing, initial findings indicate that the projected changes will be detrimental to many fish stocks. The fishing sector remains at risk from climate impacts and thus further activity is required.
OVERALL OBJECTIVE	Enhance the resilience of the fisheries value chain.
ACTIVITIES	<p>Short-term action: Enhance capacity of the Ministry of Agriculture, Livestock and Fisheries and the Kenya Marine Fisheries Institute on the impacts of climate change on fisheries, fishing communities and the private sector; Upscale sustainable aquaculture initiatives</p> <p>Medium-term action: Develop and implement a pilot project on climate resilient fish species and the related value chain</p>

	Long-term action: Strengthen monitoring capacity and capability to prevent overfishing and unauthorized exploitation in the inland waters and Exclusive Economic Zone; Promote the up-scaling of climate resilient strategies/ technologies in fisheries and climate resilient fish varieties; Expand the fishing zones in both inland and coastal waters
IMPLEMENTERS	Ministry responsible for fisheries and MDAs, County Governments, research institutions and academia, civil society and private sector.
COSTS	USD 136.8 million

PROJECT TITLE	N/A
SECTOR	Oil and Mineral resources
CONTEXT	Kenya has recently discovered large quantities of oil and is planning to exploit these and other mineral resources commercially. Oil and mineral resources exploitation can have impacts on ecosystems that local populations rely on. Climate change impacts will only exacerbate the impacts from oil and mineral exploration and production. Hence it is imperative that risk and vulnerability assessments are conducted before commercial exploitation to ensure that communities are able to practice their livelihoods. In addition private sector companies need to integrate climate change risks in their environmental and social safety guards.
OVERALL OBJECTIVE	Integrate climate change adaptation into the oil and mineral resources sector.
ACTIVITIES	<p>Short-term action: Conduct an assessment of impacts of mining, oil and gas exploration to ecosystems and communities with respect to climate change variability and future change; Develop the capacity of mining communities to integrate climate change in the community development agreements with private companies</p> <p>Medium-term action: Integrate climate change in the mining, policy and regulatory framework</p> <p>Long-term action: Maintain climate resilient oil and mineral resource exploitation; Update risk assessments</p>
IMPLEMENTERS	Ministry responsible for oil and mineral resources and MDAs, County Governments, research institutions and academia, civil society and private sector
COSTS	USD 2.5 million

PROJECT TITLE	N/A
SECTOR	Land management
CONTEXT	Climate change alters the balance of environments, creating new conditions or increasing variability that in turn can affect the economic value, cultural use or physical condition of land. Unsustainable land use practices may lead to accelerating land degradation or productivity loss. Insecure ownership created by conflicting laws and insufficient information leave the homes and livelihoods of many Kenyans at risk, especially as climate change further destabilises land ownership and management. Such insecurity hampers economic development by discouraging household investment and increasing internal migration.
OVERALL OBJECTIVE	Mainstreaming climate change adaptation in land reforms.
ACTIVITIES	<p>Short-term actions: Build the capacity of land planners in climate change land-use planning</p> <p>Medium-term actions: Integrate climate change scenarios into spatial planning (climate resilient spatial planning); Build the capacity of land managers in climate change adaptation</p> <p>Long-term actions: Update land-use plans with climate scenarios</p>
IMPLEMENTERS	Ministry responsible for land reforms, MDAs, County Governments, research institutions and academia, civil society and private sector.
COSTS	USD 1.3 million

PROJECT TITLE	N/A
SECTOR	Ecosystem services
CONTEXT	Kenya's environment underpins livelihoods, health, ecosystem services, cultural heritage, tourism, wildlife habitats and more. It is also where many impacts of climate change are first registered, often as shifts in precipitation and temperature lead to changes in resource availability, occurrence and impact of disasters, or the valuable services ecosystem provide. Variable, widespread climate impacts threaten ecosystems and wildlife across the country with cascading economic and social impacts.

OVERALL OBJECTIVE	Mainstream climate change adaptation in the environment sector.
ACTIVITIES	<p>Short-term action: Operationalise the climate change coordinating institutions proposed in the Climate Change Act (2016); Develop a forestry adaptation strategy; Enhance participatory scenario planning with communities</p> <p>Medium-term action: Strengthen the capacity of national and county institutions responsible for coordinating CCA; Improve and expand existing climate change modelling work by Kenya Meteorological Department</p> <p>Long-term action: Integrate ecosystem and community-based approaches in sector strategies in support of adaptation to reduce natural resources-based conflicts</p>
IMPLEMENTERS	Ministry responsible for environment, MDAs, County Governments, research institutions and academia, civil society and private sector.
COSTS	USD 636 million

KIRIBATI

ECOSYSTEM SERVICES PRIORITIES

PROJECT TITLE	INCREASING WATER AND FOOD SECURITY WITH INTEGRATED AND SECTOR-SPECIFIC APPROACHES AND PROMOTING HEALTHY AND RESILIENT ECOSYSTEMS
SECTOR	Ecosystem services
OBJECTIVE	Strengthen institutional capacity and the framework for effective conservation and sustainable use of natural resources (KNAP #1[i]) and effective licensing and enforcement systems to protect the environment and enhance the resilience of the people of Kiribati
ACTIVITIES	<ul style="list-style-type: none"> a. Identify required enhancements to the frameworks and institutional capacity to implement community-based protected areas and other natural resource management and licensing and enforcement measures. b. Develop outer island community-based protected areas. c. Demarcating marine protected areas and conduct monitoring on their status. d. Strengthening community involvement in mangrove replanting and reporting on mangrove and its species health. e. Conduct training and promoting soft/traditional measures and evaluate effectiveness (see also Action 6.3.2) f. Undertake control and eradication measures to combat invasive species. g. Develop networking and outer island counterparts with communities to enhance local participation in maintaining and reporting on the status of invasive species, and impacts on environmental problems affecting community-based protected areas and protected species. h. Identify local counterpart to be trained on environmental issues to carry out invasive alien species monitoring system in outer islands. i. Integrate community-based protected areas and protected species into outer island bylaws and identify supplementary licensing and enforcement actions necessary. j. Conserve island biodiversity through controlling invasive alien species (mynah bird) on all outer islands (starting with Onotoa and Tab North.)
OUTCOMES	Communities with island councils manage and implement climate change adaptation and disaster risk reduction measures as an integral part of their development efforts and inclusive of vulnerable groups.
INDICATORS	<ul style="list-style-type: none"> 1. The number of community-based protected areas and protected species developed and signed on outer islands 2. The number of controls that have been applied to address the issue on invasive species 3. Invasive species have been generally reduced by 10% by 2020

	<p>4. Number of mangroves in the country's coastline increased</p> <p>5. The number of invasive species network battlers and outer island invasive species reporters established</p> <p>6. The number of trained local counterparts that participated in invasive species monitoring</p> <p>7. The Island council bylaw integrates the provisions for community-based protected areas and protected species by 2020</p> <p>8. Invasive alien species (mynah birds) are reduced on Onotoa & Tab North by 10% by 2020</p>
IMPLEMENTERS	<p>Responsible lead agency: Environment and Conservation Division (MELAD);</p> <p>Support agencies: Kiribati Local Government associations; NGOs; FBOs; Island Councils; ALD.</p> <p>Development partners: All development partners; SPREP; International NGOs</p>
TIMELINE	n/a
COSTS & SOURCE OF FINANCE	n/a

FOOD SECURITY PRIORITIES

PROJECT TITLE	INCREASING WATER AND FOOD SECURITY WITH INTEGRATED AND SECTOR-SPECIFIC APPROACHES AND PROMOTING HEALTHY AND RESILIENT ECOSYSTEMS
SECTOR	Food security
OBJECTIVE	<ul style="list-style-type: none"> - Strengthen the capability of communities to take practical and sustainable measures to address food and nutrition security (KNAP #2); - Increase understanding and community ownership of assets and practices related to food and nutrition security (behavioural change) (KNAP #3); - Improve food preservation and storage techniques to avoid food shortages and increase food availability through use of both modern and traditional skills and knowledge (KNAP #4)
ACTIVITIES	<p>a. Identify and select community pilot sites highly impacted by climate change.</p> <p>b. Establish a multi-sensing and monitoring system for acquiring significant parameters related to agriculture and climate change (e.g., temperature, humidity, solar radiation, soil pH, soil moisture, leaf wetness, pest and disease accounting, carbon dioxide concentration, soil and water salinity).</p> <p>c. Carry out climate change vulnerability assessments and adaptive capacities in agriculture at selected farming communities.</p> <p>d. Document traditional knowledge, among men and women, of cultivation, preparation and preservation techniques for traditional food crops and fruit trees.</p>

	<p>e. Develop programmes to promote and support food preservation and storage techniques in most climate vulnerable areas.</p> <p>f. Develop community and outer islands awareness programme and demonstration sites to promote nutritionally high-value and climate-resilient crop and livestock production systems (taking into consideration traditional and contemporary knowledge and practices, such as agroforestry, drought/salinity-resilient crops and livestock, sustainable management practices and nutritional value).</p> <p>g. Promotion of leafy plants and nutritious cooking recipes including through radio programmes, newsletters and leaflets and video clips particularly focusing women.</p> <p>h. Develop and promote soil management technologies appropriate for atoll conditions through promoting adoption of planting methods for root crops within local communities and trialing organic compost hydroponic system</p> <p>i. Support implementation and monitoring of existing NGO programmes and leverage government support for training in organic home gardening skills and nutrition in outer islands local communities, with a strong focus on women.</p> <p>j. Support existing NGO and MIA programmes and leverage further support to strengthen replanting schemes for indigenous food crops with cultural significance, e.g. pandanus and breadfruit, including through replanting competitions</p> <p>k. Implement identified actions and monitor progress (such as promotion and enhancement of household agroforestry systems, replanting of traditional and climate-resilient staple food crops (e.g., coconut trees, cassava, sweet potato, etc), upgrading island nurseries, practice of organic and conservation agriculture, composting, mulching and cover crops).</p> <p>l. Evaluate agriculture programmes to identify best practices and lessons learned.</p> <p>m. Replicate good practices on all outer island.</p>
OUTCOMES	Salt-, drought-, rain- & heat-stress resilient crops, fruit, vegetables and livestock breeds are identified and promoted, and communities preserve local food (fruit trees and seafood).
INDICATORS	<ol style="list-style-type: none"> 1. Number of males and females made aware of (and take ownership of) climate threats to food security and appropriate responses and have capacity to respond. 2. Number of agricultural nurseries and farmers practicing and promoting climate-smart agriculture practices in the areas of crop diversification, water use, land-use, compost, and livestock production. 3. Number of food-secure households (in areas/periods at risk of climate change impacts) by male and female headed households. 4. Number of households reached by food storage and preservation programmes. 5. Increase in the number of households practicing food preservation and storage. 6. Increase in people trained on preservation on food 7. Increase in number of households preserving traditional staple foods 8. Reports, documents, and other awareness and promotional materials on traditional knowledge of food preservation techniques produced and promoted 9. Number of communities and research stations at Ois with multi-sensing and monitoring

IMPLEMENTERS	Responsible lead agency: Agriculture and livestock division (MELAD). Support agencies: MIA, OB, KMS, Water Engineering Unit (MISE), MFMRD, KNEG, MCIC, MICTTD, NGOs (FSPK, LLEE). Development partners: Australia's Aid Program, USAID, EU, FAO, UNDP, German Development Cooperation; SPC (Land Resources Division and SOPAC); ACIAR; IFAD; USP
TIMELINE	n/a
COSTS & SOURCE OF FINANCE	n/a

PROJECT TITLE	INCREASING WATER AND FOOD SECURITY WITH INTEGRATED AND SECTOR-SPECIFIC APPROACHES AND PROMOTING HEALTHY AND RESILIENT ECOSYSTEMS
SECTOR	Food security
OBJECTIVE	Strengthen the institutional and technical capacities of various key sectors for a coordinated whole-of-government approach to improve local food production and address issues with imported food commodities.
ACTIVITIES	a. Review the current framework and sector capacities for coordinating whole-of-government approaches to local food production and imported food commodities. b. Build capacities of various sectors and enhance the framework for, and coordination of action to improve local food production and imported food commodities, in consideration of Action 1.3.1.
OUTCOMES	Communities have constant access to local produce and basic food commodities.
INDICATORS	Key sectors have increased capacity to implement a coordinated approach on local food production and imported food commodities
IMPLEMENTERS	Responsible lead agency: MELAD (ALD; MCIC) Support agencies: Kiribati Chamber of Commerce, Ministry of Health (Food safety policy), local government, Ministry of Transport (shipping schedule to the outer islands for transporting food items), NGOs (FSP-I, KiriCAN etc.), FBOs Development partners: Secretariat of the Pacific Community (SPC), South Pacific Regional Environment Programme (SPREP), FAO (Asia Pacific Office, Samoa)
TIMELINE	n/a

COSTS & SOURCE OF FINANCE	n/a
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WATER SECURITY PRIORITIES

PROJECT TITLE	INCREASING WATER AND FOOD SECURITY WITH INTEGRATED AND SECTOR-SPECIFIC APPROACHES AND PROMOTING HEALTHY AND RESILIENT ECOSYSTEMS
SECTOR	Water security
OBJECTIVE	Strengthening communities' engagement in safeguarding water sources and improving water systems.
ACTIVITIES	<p>a. Enhance existing NGO involvement in community education, preparation and capacity building for water infrastructure maintenance and handover, e.g., hand pumps, water tanks.</p> <p>b. Enhance capacity & funds available for community-based water system improvements.</p> <p>c. Enhance coordination between NGOs and MISE in system design and implementation including MISE's capacity to act as technical advisors for community-based water system improvements.</p>
OUTCOMES	Communities manage their water resources (including during extreme events such as drought, heavy rain and storm surges)
INDICATORS	<ol style="list-style-type: none"> 1. Number of water catchments protected under community-based management schemes. 2. Number of water committees established (% of women and men) and implement water system improvement projects (by number of female-headed households) 3. Number and % of community water system education implemented by NGOs 4. Number and % of involved NGOs meeting minimum standards from the International Framework on CSO Development Effectiveness
IMPLEMENTERS	<p>Responsible lead agency: FSPK, KiriCAN, MISE, Red Cross.</p> <p>Support agencies: MISE, Red Cross</p> <p>Development partners: SPC Water and Sanitation Program, Pacific WASH Coalition, WHO, UNICEF</p>
TIMELINE	n/a
COSTS & SOURCE OF FINANCE	n/a

PROJECT TITLE	PROMOTING SOUND AND RELIABLE INFRASTRUCTURE DEVELOPMENT AND LAND MANAGEMENT
SECTOR	Water security
OBJECTIVE	Strengthen national water governance so all key stakeholders are enabled to perform their allocated functions in a coordinated manner to address all water issues, including the impacts of climate change, climate variability and natural disasters
ACTIVITIES	<p>a. Convene the National Water and Sanitation Coordination Committee (NWSCC) as the key body charged with implementation of KJIP Key National Adaptation Priorities for water security.</p> <p>b. Undertake stocktake of actions and gap analysis of the National Water Resources Policy and Implementation Plan with respect to the KJIP and develop annual workplans and reporting against the KJIP.</p> <p>c. Identify capacity needs and projects to further strengthen sector governance.</p>
OUTCOMES	Water reserves are protected, and communities have access to sufficient and adequate fresh water at all times (including during extreme events such as drought, heavy rain and storm surges; see also Strategy 4) and to improved sanitation facilities
INDICATORS	1. National Water and Sanitation Coordination Committee regularly reports collective progress on implementation of the KJIP water security KNAPs.
IMPLEMENTERS	<p>Responsible lead agency: MISE</p> <p>Support agencies: MIA, MHMS, MELAD: ECD, Betio Town Council, Teinanano Urban Council, KiriCAN, FSPK, KANGO, MFEP</p> <p>Development partners: EU, Australia's Aid Program, ADB, UNICEF, SPC (SOPAC)</p>
TIMELINE	n/a
COSTS & SOURCE OF FINANCE	n/a

PROJECT TITLE	PROMOTING SOUND AND RELIABLE INFRASTRUCTURE DEVELOPMENT AND LAND MANAGEMENT
SECTOR	Water security
OBJECTIVE	Ensure access to improved sanitation facilities, including monitoring the impacts of pollution sources. Develop sanitation and an open defecation-free environment for improved health in support of adaptation initiatives. (SMEC project)
ACTIVITIES	<p>a. Rehabilitate existing sanitation infrastructure on South Tarawa (including outfalls, pumping stations, saltwater supply system).</p> <p>b. Develop appropriate, acceptable and affordable on-site sanitation designs for non-sewered water supply systems for South Tarawa and outer islands.</p>

	<p>c. Incorporate on-site sanitation designs in the building code and implement inspection and monitoring of impacts. (See also Action 5.7.1)</p> <p>d. Implement initiatives to eliminate open defecation on both South Tarawa and outer islands and support island councils in this task.</p> <p>e. Construct and support community and school toilets and hand wash facilities.</p>
OUTCOMES	Water reserves are protected, and communities have access to sufficient and adequate fresh water at all times (including during extreme events such as drought, heavy rain and storm surges; see also Strategy 4) and to improved sanitation facilities
INDICATORS	<ol style="list-style-type: none"> 1. Percentage of households with suitable toilet facilities 2. Indicators of sanitation markedly improved from a 2004 baseline 3. Baseline survey completed using improved national indicators 4. Sanitation infrastructure rehabilitated 5. Appropriate sanitation designs developed and incorporated in building codes 6. % of outer islands adopting the elimination of open defecation initiatives (Kiribati to be ODF [Open Defecation Free] by 2015) 7. Number and percentage of communities and schools with hand wash and toilet facilities
IMPLEMENTERS	<p>Responsible lead agency: MISE, MIA</p> <p>Support agencies: MHMS, MELAD</p> <p>Development partners: Any interested partners</p>
TIMELINE	n/a
COSTS & SOURCE OF FINANCE	n/a

HEALTH PRIORITIES

PROJECT TITLE	STRENGTHENING HEALTH-SERVICE DELIVERY TO ADDRESS CLIMATE CHANGE IMPACTS
SECTOR	Health
OBJECTIVE	Strengthen health intervention programmes for monitoring, surveying and responding to climate-sensitive, climate-induced and disaster related diseases
ACTIVITIES	<ol style="list-style-type: none"> a. Maintain strong relationship with the Pacific Public Health Surveillance Network, and with MELAD, in outbreak surveillance and response. b. Provide further specialist training to nurses in OI in disease surveillance and how to respond to an outbreak. c. Increase capacity to use data and IT systems for surveillance purposes, including in statistical analysis.

	<p>d. Strengthen capacity of laboratory so it can provide timely diagnostic responses and review adequacy of equipment and test kits/tools.</p> <p>e. Improve processes for water testing, analysis and reporting of reticulated water supplies and wells, including on outer islands, by ensuring a constant supply of reagents.</p> <p>f. Maintain scheduled water monitoring and, ideally, increase the frequency of testing and monitor a wider range of water sources.</p> <p>g. Undertake initiatives and support multisectoral approaches to climate change adaptation planning, including actively responding to the Disaster Risk Reduction (DRR) measures, and considering both impacts of sea level rise and drought.</p>
OUTCOMES	Routine systems for surveillance of environmental health hazards and climatesensitive diseases are strengthened, and the capacity of national and local health systems, institutions and personnel to manage climate change and disaster-related health risks are enhanced (KNAP #4).
INDICATORS	<ol style="list-style-type: none"> 1. Number of functioning early warning systems for water- and vector-borne diseases in priority locations 2. Staff in targeted health institutions with capacity to respond to—and mitigate impacts of—climate-related health impacts is increased 3. 25% increase in outer islands that are engaged in regular environmental health surveillance activities (target and baseline to be established by the end 2015) 4. % decrease in the incidence of climate-related diseases (target
IMPLEMENTERS	<p>Responsible lead agency: MHMS</p> <p>Support agencies: MFMRD, MELAD, MISE, MIA</p> <p>Development partners: EU, WHO, UNICEF, SPC (Global Climate Change Alliance)</p>
TIMELINE	n/a
COSTS & SOURCE OF FINANCE	n/a

PROJECT TITLE	STRENGTHENING HEALTH-SERVICE DELIVERY TO ADDRESS CLIMATE CHANGE IMPACTS
SECTOR	Health
OBJECTIVE	Develop a governance framework to guide the health sector’s work on climate change and disaster risk reduction (KNAP #1); Improve management, coordination and implementation of health security programmes (KNAP #2)

ACTIVITIES	<p>a. Scope the development of a governance framework through literature review and advice from external partners to build on global good practice.</p> <p>b. Review existing governance structures to identify gaps and enhancements to integrate climate vulnerability and resilience into strategic goals and operational processes.</p> <p>c. Use outcomes of the review to integrate climate change vulnerability into management, coordination and implementation of health programmes and services (mainstreaming).</p>
OUTCOMES	A national climate change, disaster risk, outbreak preparedness governance framework, response plan and a sectoral environmental health plan, which incorporate surveillance and response to climate-sensitive diseases and disaster risks, are in place.
INDICATORS	<ol style="list-style-type: none"> 1. Climate change health security priorities incorporated into the respective agency's governance frameworks 2. Achievement of international health guidance on core capacities for surveillance and response to climate change 3. Increase in and improvement to level of effectiveness of coordination mechanisms
IMPLEMENTERS	<p>Responsible lead agency: MHMS</p> <p>Support agencies: NWSCC Members, MELAD: ECD, Red Cross, KHFA, MELAD, ALD</p> <p>Development partners: WHO</p>
TIMELINE	n/a
COSTS & SOURCE OF FINANCE	n/a

PROJECT TITLE	STRENGTHENING HEALTH-SERVICE DELIVERY TO ADDRESS CLIMATE CHANGE IMPACTS
SECTOR	Health
OBJECTIVE	n/a
ACTIVITIES	<ol style="list-style-type: none"> a. Undertake a vulnerability and/or loss and damage assessment to identify climate change-related impacts and prioritise interventions. b. Develop a comprehensive formal asset maintenance, retrofitting and replacement programme for health infrastructure. Planning and identification of funding for the maintenance and replacement of infrastructure. c. Improve and expand hospitals and clinics to meet the health needs of the community.

OUTCOMES	Strengthened support for retrofitting medical facilities and health infrastructure adversely affected by, or susceptible to, the impacts of climate change.
INDICATORS	1. Number of projects to improve health systems to respond to identified climate risks (to health or infrastructure) implemented according to asset management plan 2. % of hospitals with five specialised services
IMPLEMENTERS	Responsible lead agency: MHMS Support agencies: MISE, MFED Development partners: EU, WHO, UNICEF, SPC (Global Climate Change Alliance)
TIMELINE	n/a
COSTS & SOURCE OF FINANCE	n/a

PROJECT TITLE	STRENGTHENING HEALTH-SERVICE DELIVERY TO ADDRESS CLIMATE CHANGE IMPACTS
SECTOR	Health
OBJECTIVE	Facilitate long-term planning and preparations to respond to the impacts of global climate change in order to build the resilience of the environment through integrated waste management and pollution control programmes undertaken at a national level through MELAD.
ACTIVITIES	<ul style="list-style-type: none"> a. Build political support for chemical management and institutional and technical capacity to enforce laws. b. Improve chemical infrastructure for identified priority issues, and enhance environmental and chemical monitoring. c. Develop a management plan for landfill and disposal of stored chemicals d. Integrate monitoring of water-borne pollution from poor sanitation into environmental monitoring programmes (from KNAP #5 Water security). e. Enhance regulatory requirements and institutional capacity to generate and share and data. f. Increase awareness and training activities related to chemicals and their management across sectors, key stakeholders, and the wider community. g. Relevant and responsible ministries take initiative in putting in place appropriate evidence-based policies, regulatory regimes and developing action plans for improving the management of chemicals.

	<p>h. Encourage more participation of private organisations in the planning and implementation of government's development plans, including those related to chemical management activities.</p> <p>i. Mainstream chemical and waste management into national development programmes; and leverage donor support.</p>
OUTCOMES	Enhanced Chemical waste management and alternatives to reduce contamination and pollution
INDICATORS	<ol style="list-style-type: none"> 1. Area (ha) and natural assets (by type) protected or rehabilitated from pollution contamination (by source) 2. Number of landfill sites improved 3. Waste recovery facility is managed
IMPLEMENTERS	<p>Responsible lead agency: Environment and Conservation Division (MELAD)</p> <p>Support agencies: MHMS</p> <p>Development partners: SPREP</p>
TIMELINE	n/a
COSTS & SOURCE OF FINANCE	n/a

COASTAL ZONE/INFRASTRUCTURE PRIORITIES

PROJECT TITLE	PROMOTING SOUND AND RELIABLE INFRASTRUCTURE DEVELOPMENT AND LAND MANAGEMENT
SECTOR	Coastal zones; Infrastructure
OBJECTIVE	<ul style="list-style-type: none"> - Strengthen national capacity to manage, monitor and protect coastal areas in a coordinated manner (KNAP #2); - Develop planning processes and programmes for climate proofing infrastructure throughout Kiribati (KNAP #3).
ACTIVITIES	<ol style="list-style-type: none"> a. Development and adoption of a national coastal management policy. b. Conduct coastal vulnerability assessment to identify priority areas, types of intervention required and notification of affected communities (see also action 2.3.5). c. Enhance efficiency, coordination and effectiveness of existing coastline monitoring programmes. d. Preparation of a Strategic Coastline Resilience Plan identifying appropriateness of hard and soft measures at an island and village level and integration with Marine Spatial Plans. e. Identification of immediately vulnerable areas and preparing a loss and damage assessment for areas at most immediate threat (see also Result 6.5).

	<p>f. Integrate outcomes of innovation and pilot projects (from 6.3.3) into Strategic Coastal Resilience Plan and develop appropriate programmes and projects and planning processes.</p> <p>g. Undertake participatory coastal design, taking into account each community's interaction with the coastline, to develop adaptation options and site -specific interventions.</p> <p>h. Implementation of coastal protection measures hard measures such as seawalls ; artificial beach zone to allow coastal processes to work naturally) and improvement of existing practices.</p> <p>i. Implementation of coastal protection measures through soft measures such as mangrove planting, beach replenishment, traditional sea walls and coral reef restoration</p>
OUTCOMES	Building coastal resilience through strategic coastal protection initiatives
INDICATORS	<ol style="list-style-type: none"> 1. Amount of specialised support including finance, technology and capacity building, for mechanisms for raising capacities for effective climate change related planning and management for coastal protection, including focusing on women, youth and local and marginalised communities. 2. Number of communication and knowledge-management materials and events on shoreline protection and climate proofing infrastructure supported. 3. Increased capacities of regional, national and sub - national institutions to identify, prioritise, implement, monitor and evaluate coastal management and protection strategies and measures. 4. Responsiveness of national stakeholders to evolving coastal protection needs. 5. Specialist/mentor in coastal formation dynamics recruited. 6. National Coastal Management Policy adopted. 7. Strategic Coastline Protection Plan prepared 8. Vulnerable areas identified, loss & damage assessment of areas at most immediate risk conducted 9. Participatory coastal design conducted in four high -risk coastal areas. 10. Number of mangroves replanted, km of beach replenished, and coral reefs restored. 11. Number of km of seawall built, artificial beach zone established. 12. Monitoring & evaluation report on coastal management prepared. 13. Engineering options for coastal management/protection developed and presented to MELAD, MISE, OB/KNEG.
IMPLEMENTERS	<p>Responsible lead agency: MFMRD, MISE, Environment and Conservation Division (MELAD)</p> <p>Support agencies: MIA Local Government Division, Island Councils, KiriCAN, FSPK</p> <p>Development partners: UNDP; SPREP</p>
TIMELINE	n/a

COSTS & SOURCE OF FINANCE	n/a
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PROJECT TITLE	PROMOTING SOUND AND RELIABLE INFRASTRUCTURE DEVELOPMENT AND LAND MANAGEMENT
SECTOR	Coastal zones; Infrastructure
OBJECTIVE	Engage communities in becoming active partners in building coastal resilience and reducing hazards and risks related to climate change.
ACTIVITIES	<ul style="list-style-type: none"> a. Build community capacity to participate in coastal resilience monitoring and strategic planning processes and project design. b. Identify entry points for community-level involvement in project implementation and maintenance and associated capacity-building needs. c. Leverage existing NGO capacity to support the development of a network of communities adopting Community-Based Mangrove Management Plans with a constitution recognised by MWYSSA and who adopt traditional seawall construction approaches. d. Investigate approaches to building community ownership of mangrove management plan implementation and traditional seawall construction and identify appropriate support structures, including through island disaster committees.
OUTCOMES	Building coastal resilience through strategic coastal protection initiatives
INDICATORS	<ul style="list-style-type: none"> 1. Number of community or island development plans with capacity building on technicalities of coastal resilience. 2. Number of projects developed by island-level actors for coastal resilience
IMPLEMENTERS	<p>Responsible lead agency: MIA Local Government Division</p> <p>Support agencies: NGOs (KiriCAN, FSPK)</p> <p>Development partners: UNDP</p>
TIMELINE	n/a
COSTS & SOURCE OF FINANCE	n/a

PROJECT TITLE	PROMOTING SOUND AND RELIABLE INFRASTRUCTURE DEVELOPMENT AND LAND MANAGEMENT
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SECTOR	Coastal zones; Infrastructure
OBJECTIVE	Develop bold and innovative engineering solutions to address coastal management issues (coastal protection) and long-term measures to build up our islands through collaborative efforts with potential partners)
ACTIVITIES	<ul style="list-style-type: none"> a. Build relationships with potential partners through the planning process to support innovations in the coastal engineering solutions. b. Strengthen technical capacity within relevant government departments on coastal formation dynamics, coastline vulnerabilities and range of possible interventions and practical solutions that are contextualised to national needs and local circumstances. c. Evaluation of existing measures in selected locations and development of a tool for evaluating likely effectiveness of hard and soft measures in different classes of coastal contexts. d. Development of a set of engineering and project implementation options for coastal management and protection and dissemination in the public domain. e. Pilot projects of alternative solutions in coastal management and protection and integrate outcomes into planning and programme design (6.3.1 above).
OUTCOMES	Building coastal resilience through strategic coastal protection initiatives
INDICATORS	<ul style="list-style-type: none"> 1. Number of new coastal protection initiatives completed 2. Size of new reclaimed and raised land area 3. Coverage/scale of coastal ecosystems protected and strengthened in response to climate variability and change 4. Number and value of physical coastal protection assets made more resilient to climate variability and change 5. Number of technologies and innovative solutions transferred or licensed to promote coastal resilience
IMPLEMENTERS	<p>Responsible lead agency: MISE</p> <p>Support agencies: MIA</p> <p>Development partners: UNDP (via GCF Coastline Protection Project); SPREP</p>
TIMELINE	n/a
COSTS & SOURCE OF FINANCE	n/a

DRR PRIORITIES

PROJECT TITLE	INCREASING EFFECTIVENESS AND EFFICIENCY OF EARLY WARNINGS AND DISASTER AND EMERGENCY MANAGEMENT
SECTOR	DRR

OBJECTIVE	Enhance governance institutional arrangements for disaster management at national and local levels (National Disaster Management Office; Island Disaster Committee).
ACTIVITIES	<ul style="list-style-type: none"> a. Formalize a policy for the National Disaster Council to provide a quarterly report to the Development Coordination Committee meetings. b. Establish the National Disaster Management Office with full-time staff and resources within government structure. c. Establish Island Disaster Committee within island councils' legal framework and authority. d. Establishment and activation of island DRM committees with equal representation of women and with representation of people with a disability. e. Develop community disaster plans in pilot villages to guide community response in disasters. f. Ensure island-level DRM plans are prepared with the advice CSOs representing people with a disability. g. Equip and build capacity of island disaster committees with the relevant technology and early warning systems they may need to prepare and respond.
OUTCOMES	Strengthening disaster risk preparedness (through innovative technology), response and recovery across all sectors including, importantly, at the island and at the community level to reduce loss of life, injuries, damage to infrastructure and properties.
INDICATORS	<ul style="list-style-type: none"> 1. Number of community outreach awareness-raising programmes on climate change and disaster risk management carried out and population reached (% female & people with a disability) 2. Effectiveness of disaster preparedness and response and recovery programmes and services is increased. 3. Number of males and females made aware through culturally appropriate communications methods of short-term (emergency) and long-term climate threats and related appropriate and realistic responses 4. Increase in number of island and town council Strategic Plans that incorporate climate change and disaster risk
IMPLEMENTERS	<p>Responsible lead agency: OB, National Economic Planning Office, KRCS, FSPK</p> <p>Support agencies: MIA, outer island councils, MOE, FBOs, MHMS, NGOs, Kiribati Police Service</p> <p>Development partners: EU, World Bank, SPC, SPREP, any interested partners</p>
TIMELINE	n/a
COSTS & SOURCE OF FINANCE	n/a

PROJECT TITLE	INCREASING EFFECTIVENESS AND EFFICIENCY OF EARLY WARNINGS AND DISASTER AND EMERGENCY MANAGEMENT
SECTOR	DRR

OBJECTIVE	Enshrine principles of “humanitarian assistance” and “building back better” when responding to, or recovering from the impact of disasters and ensure that these efforts take into consideration the risks associated with climate change.
ACTIVITIES	<p>a. Review disaster risk management-related policies, plans, legislation, programmes and initiatives for alignment with and incorporation of “humanitarian assistance” and “building back better” principles.</p> <p>b. Incorporate principles of “humanitarian assistance” and “building back better” into new and existing disaster risk management-related policies, plans, legislation, programmes and initiatives as required.</p> <p>c. Ensure objectives of social inclusion are reflected in relevant plans, policies and legislation, including post-disaster needs assessment and response.</p>
OUTCOMES	Strengthening disaster risk preparedness (through innovative technology), response and recovery across all sectors including, importantly, at the island and at the community level to reduce loss of life, injuries, damage to infrastructure and properties.
INDICATORS	1. Percentage of disaster risk management-related policies, plans, legislation, programmes and initiatives reviewed and updated
IMPLEMENTERS	<p>Responsible lead agency: MIA, MWYSSA</p> <p>Support agencies: OB, KRCS</p> <p>Development partners: UNISDR, EU, World Bank, UNICEF, SPC, SPREP, any interested partners</p>
TIMELINE	n/a
COSTS & SOURCE OF FINANCE	n/a

PROJECT TITLE	INCREASING EFFECTIVENESS AND EFFICIENCY OF EARLY WARNINGS AND DISASTER AND EMERGENCY MANAGEMENT
SECTOR	DRR
OBJECTIVE	Enhance understanding of loss and damage (through data collection and vulnerability analysis) to better position Kiribati to engage with and receive support from regional and international initiatives that will address national priorities and concerns. (Actions 2.1.1 and 2.2.1 also contribute to this KNAP). Create awareness (international and national) on disappearance of islets and immediate needs of the country.
ACTIVITIES	<p>a. Monitor the disappearance of islets, undertake vulnerability analysis and identify areas of the country at immediate risk from climate change-related phenomena, and collect other loss and damage information.</p> <p>b. Compile damage/loss and risk findings into a high-profile report to be distributed to national and international audiences.</p> <p>c. Design and implement a periodic international public information and awareness campaign to rekindle the debate on Kiribati’s climate change vulnerabilities and needs</p>

OUTCOMES	Strengthening disaster risk preparedness (through innovative technology), response and recovery across all sectors including, importantly, at the island and at the community level to reduce loss of life, injuries, damage to infrastructure and properties.
INDICATORS	<ol style="list-style-type: none"> 1. Risk and vulnerability assessments, and other relevant scientific and technical assessments carried out and updated. 2. Number of early warning systems on land disappearance established, disseminated and communicated. 3. Climate information on land disappearance used in decision making by governments and key stakeholders. 4. Data on disappearance of islets and areas at risk compiled 5. Climate Change impact Report produced and distributed 6. PIA campaign commissioned and implemented.
IMPLEMENTERS	<p>Responsible lead agency: MELAD</p> <p>Support agencies: OB, KNEG, MFAI, MFMRD</p> <p>Development partners: SPREP</p>
TIMELINE	n/a
COSTS & SOURCE OF FINANCE	n/a

ENERGY PRIORITIES

PROJECT TITLE	PROMOTING THE USE OF SUSTAINABLE, RENEWABLE SOURCES OF ENERGY AND ENERGY EFFICIENCY
SECTOR	Energy
OBJECTIVE	Maintain grid stability with high solar penetration
ACTIVITIES	<ol style="list-style-type: none"> a. Develop standards and guidelines for future solar photovoltaic grid connected systems. b. Build capacity to manage high levels of grid-connected solar installations. c. Automate diesel gensets and provide appropriate storage technology to power utilities. d. Investigate options of connecting more renewable energy to the grid in Tarawa and Kiritimati. e. Investigate the appropriateness of privately owned solar photovoltaic grid-connected systems, including feed-in-tariff and/or net-metering. f. Develop best practice regulations and standards for the safe and reliable supply, generation, transmission and distribution of power in urban and rural institutions
OUTCOMES	Promote and enhance the transition towards renewable energy sources.

INDICATORS	<ol style="list-style-type: none"> 1. Increase in level of output from renewable energy sources (Kw) 2. Increased share of gridconnected renewable energy. Baseline: 0% solar energy intermittent in 2013; target 60% by 2025) 3. Best practices, standards and regulations understood and put into practice for electrical supply and distribution in urban and rural areas 4. Intermittent renewable energy reaches parity with standard grid power 5. Power utilities functioning at a higher efficiency due to automation and storage technology 6. Policy established and implemented for encouraging feed-in-tariff and/or net-metering Electricity Act approved and enforced. 7. New solar PV systems in South Tarawa fully operational
IMPLEMENTERS	<p>Responsible lead agency: MISE (Energy Planning Unit), Public Utilities Board</p> <p>Support agencies: Environment and Conservation Division (MELAD), MFED, MIA</p> <p>Development partners: Australia's Aid Program, EU, ADB, New Zealand Aid Programme, German Development Cooperation; SPC, PIFS; SPREP, International Renewable Energy Agency</p>
TIMELINE	n/a
COSTS & SOURCE OF FINANCE	n/a

PROJECT TITLE	PROMOTING THE USE OF SUSTAINABLE, RENEWABLE SOURCES OF ENERGY AND ENERGY EFFICIENCY
SECTOR	Energy
OBJECTIVE	Promote energy efficiency and conservation.
ACTIVITIES	<ol style="list-style-type: none"> a. Develop a policy to guide and enforce the efficient use of energy and infrastructure upgrading in the transport sector and power sector. b. Introduce regulations on minimum standards for energy efficiency. c. Develop a policy to minimize the importation of second-hand vehicles that are not environmentally friendly and fuel efficient. d. Develop a financing mechanism for energy efficiency (energy efficiency revolving fund). e. Install a pre-paid meter system to conserve energy. f. Establish standards and labelling for minimum energy performance of electrical appliances. g. Develop best practice guidelines for supply side management. h. Develop and implement public awareness and educational programmes for: good transport management; electricity use; energy efficiency and conservation, and use of active transport (bicycles, walking), particularly in villages.

OUTCOMES	Increase energy conservation and energy efficiency on both the supply and demand sides.
INDICATORS	<ol style="list-style-type: none"> 1. Minimum energy efficiency standards and energy labelling regulations adopted 2. Legislation for minimum energy performance standards and labelling approved 3. Decrease in number of imported used and inefficient vehicles by 2020 4. Revolving fund established 5. Number of pre-payment meters installed in residential and commercial grid customers. 6. Standards and labelling guidelines developed and enforced 7. Reduction in intensity of conventional energy used 6690kJ/GDP in 2012
IMPLEMENTERS	<p>Responsible lead agency: MISE (Energy Planning Unit), Public Utilities Board</p> <p>Support agencies: MFED, MICTTD, MOE, NGOs</p> <p>Development partners: Australia's Aid Program, EU, ADB, New Zealand Aid Programme; SPC, PIFS; SPREP, International Renewable Energy Agency</p>
TIMELINE	n/a
COSTS & SOURCE OF FINANCE	n/a

KUWAIT

ADAPTATION PRIORITY PROJECTS

PROJECT TITLE	ADAPTATION PLANS TO ENHANCE THE RESILIENCE OF THE FISHERIES AND MARINE SECTOR.
SECTOR	Fisheries and Marine Sector
CONTEXT	The shorelines of Kuwait are being threatened by Sea Level Rise due to changes in the climate. The recent estimation of IPCC to SLR reveals that sea level would rise from 0.26 to 0.82 m by the end of the 21st century. A CVI for Kuwait coasts was computed using four physical parameters; elevation, coastal slope, geomorphology, distance and four socioeconomic parameters, like; population, land-use, cultural heritage, and transportation. The area near Shuaibah Port, in the south coast, as is the coastline from Doha City to Kuwait By, are the most influenced by SLR. In addition, the number of people at risk due to SLR is 30,453 (about 0.8% of Kuwait population). Fisheries are the second important sector after oil sector for Arabian Gulf countries, including Kuwait.
OVERALL OBJECTIVE	Increase the resilience of the fisheries and marine sector to climate change
ACTIVITIES	<p>Short-term actions: Enhance awareness by involving the local community in the protection and sustainable consumption of marine life; Provide financial and technical support to institutions and sectors responsible for marine life protection; Increase awareness about the Marine Ecosystem and the impact of climate change on it; Undertake risk and vulnerability assessment of the fisheries' value chain</p> <p>Medium-term actions: Designation of new marine protected areas; Develop and implement local marine conservation and restoration options; Develop adaptation and development plans for marine life and fisheries</p> <p>Long-term actions: Prepare marine ecosystem-based adaptation strategy measures in areas at risk of climate change impacts; Develop prediction capacity to anticipate possible future consequences of climate change and most threatened ecosystems in the marine; Develop monitoring capacity to prevent overfishing; Model of the impact of climate change on marine life and fisheries for use in policymakers for conservation, recovery and sustainable use of marine resources; Develop a crisis plan and management to confront climate change effects.</p>
IMPLEMENTERS	Public Authority for Agricultural Affairs and Fish Resources (PAAFR); Kuwait Environment Protection Authority (KEPA); Kuwait Institute for Scientific Research (KISR); The General Secretariat of the Supreme Council for Planning and Development (SCPD)
COSTS	USD 3.4 million

PROJECT TITLE	ADAPTATION PLANS TO ENHANCE THE RESILIENCE OF THE WATER RESOURCES
SECTOR	Water resources
CONTEXT	Kuwait extends in arid and semi-arid regions. It relies on three water resources: desalinated water, brackish groundwater and treated wastewater to fulfill its water demand in domestic, agriculture, and industrial sectors. The TSE is mainly used for irrigation of highway landscapes, households' greening, public parks, and artificial wetlands. The SNC highlighted some recommendations to reduce water consumption, including employing new water a block-tariff, reducing physical leakages, utilizing water conservation technologies, improving irrigation systems one project was initiated to identify ways to optimize the water resources use and management through applied research. WRDM program was designed to develop integrated water policies, management options, and action plans to solve water scarcity problems and increase Kuwait's water security and resilience. The second model was based on the three scenarios: normal growth of demand, and the two climate scenarios (RCP 4.5 and RCP 8.5). The model had three main inputs: water supply, water demand, and water transmission.
OVERALL OBJECTIVE	Improve the resilience of systems for the water sector
ACTIVITIES	<p>Short-term actions: Raise awareness of climate change effects on water resources in the country; Use water conservation technologies; Develop risk assessment on water resources depletion</p> <p>Medium-term actions: Incorporate measures for adaptation to climate change into actions carried out by the Ministry of Electricity and Water; Control water prices such as water consumption are fair and reasonable by all consumers; Adapt efficient irrigation methods to reduce water losses</p> <p>Long-term actions: Design effective policies to preserve and protect water resources; Support research and development to model the impact of cc on water resources; Involve more environmentally sustainable methods of water treatment like reverse osmosis, where the net energy consumption is lower than other methods</p>
IMPLEMENTERS	Ministry of Electricity and Water ; KISR ; Kuwait Environment Protection Authority (KEPA) ; The General Secretariat of the Supreme Council for Planning and Development (SCPD) ; Kuwait Municipality ; The oil sectors.
COSTS	USD 6.2 million

PROJECT TITLE	ADAPTATION PLANS TO ENHANCE THE RESILIENCE OF THE COASTAL ZONE
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SECTOR	Coastal zone
CONTEXT	The non-urbanized coast of Kuwait bay in the north, and the middle and southern coast, where urbanization is more extensive, are the coastal lines of Kuwait and are vulnerable to sea level rise. The Coastal Vulnerability Index (CVI) of Kuwait was based on the calculations of three scenarios, 1m, 1.5m and 2m, especially the Boubyan Island, and the coastline from Doha Port to Kuwait City. Coastal Information System (CIS) was established to help in the protection of coastal zones and marine environments in Kuwait. CIS provides information about Kuwait's coastal area to planners and decision makers. The CIS system is an important initiative under the technology needs assessment of the coastal zones and shore protection sector as a climate change adaptation measure. The projects aim at identifying the best practice guidelines for the development of the coastal zone of Kuwait.
OVERALL OBJECTIVE	Enhancing the resilience of coastal zones to face SLR risks
ACTIVITIES	<p>Short-term actions: Develop vulnerability and risk assessment reports; Provide open access for information and communication networks for responsible parties and sectors; Increase decision-makers awareness of the risks of SLR and the damages to nearby urban areas</p> <p>Medium-term actions: Provide financial aid for preventative and protective actions for coastal damage; Raising awareness among decision-makers to incorporate SLR scenarios into development plans; Legislating laws to restrict negative anthropogenic activities in the coastal zones to maintain coastal wildlife</p> <p>Long-term actions: Establish a specialized centre for coastal management and organize information and tools for climate risk modeling and generation of qualified responses within the coastal zone; Construct protection barriers against SLR; Prepare for better adaptation potential for future setbacks and scenarios (new construction should withstand SLR scenario in the future)</p>
IMPLEMENTERS	Kuwait Environment Protection Authority (KEPA) ; The General Secretariat of the Supreme Council for Planning and Development (SCPD) ; KISR ; Kuwait University ; Ministry of Municipal Affairs.
COSTS	USD 7.8 million

PROJECT TITLE	ADAPTATION PLANS TO ENHANCE THE RESILIENCE OF THE HEALTH SECTOR
SECTOR	Health
CONTEXT	The association between asthma and dust events and risks of heat waves are clear examples of harsh environmental impact on the human health on Kuwait. Dust storms and extreme weather events (thunderstorms, heavy rainfall, heat waves, and flash floods) are

expected to be severe and more frequent due to climate change. Factors contributing to asthma issue are believed to be related to the air quality. The project helps to adapt the climate change impacts in the public health sector. The project aimed to collect the previous data of air quality and weather data and to evaluate and review them against existing air regulations. Gaps and improvement opportunities were identified. The project has created the National Emissions Database Implemented an Air Quality Management Information System (AQMIS).

OVERALL OBJECTIVE	Enhance and building the capacity of the health sector to be prepared for increased health risks due to climate change.
ACTIVITIES	<p>Short-term actions: Increase public awareness of cc effects and impacts on general health; Conduct risk assessments and vulnerability to cc on the general public; Adjust the official working hours to avoid working during maximum temperatures in the day</p> <p>Medium-term actions: Develop warning systems for extreme weather conditions combined with a communication strategy for alerts; Increase drought-proof vegetation to reduce dust fallout from dust storms</p> <p>Long-term actions: Include information about cc effects on health in the early education curriculum; Establish a research and monitoring network on climate and health, with a focus on analyzing the expected cc impact on health</p>
IMPLEMENTERS	Ministry of Health ; Ministry of Higher Education ; Ministry of Electricity and Water ; KEPA ; Ministry of Finance ; Ministry of Services Affairs ; Ministry of Information
COSTS	USD 4.1 million

LIBERIA

ADAPTATION PRIORITY PROJECTS

PROJECT TITLE	ADAPTATION STRATEGIES OF THE AGRICULTURAL SECTOR
SECTOR	Agriculture
CONTEXT	Liberia's agriculture sector is dominated by traditional subsistence farming systems, mainly in the uplands, characterized by labor intensity, shifting cultivation, low technologies levels, and low productivity. While food crop production represents the most important source of livelihood for the majority of Liberia's rural population, with approximately forty-one percent (41%) of the population engaged in the activity, tree crops have represented the highest income-generating sub-sector, providing formal employment to the most significant number of workers in the agriculture sector and contributing significantly to the country's GDP (MOA, 2015).
OVERALL OBJECTIVE	The aim of an adaptation program for the agriculture sector is to foster a secure environment for decision-making on the part of farmers and public policy managers faced with climatic uncertainties through efficient access to information, technologies, and production processes to establish sustainable production systems.
ACTIVITIES	<ol style="list-style-type: none">1. Strengthen the capacity of the Ministry of Agriculture, including training of experts, logistics, and use of technology for the management of the sector.2. Improve the effectiveness of pest, disease, and weed management practices through the use of integrated pest and pathogen management development and varieties and species resistant to pests and diseases and improving quarantine capabilities and monitoring programs.3. Assess crops vulnerability and suitability (cropping pattern) for different Agroecological zones.4. Enhance climate-proof agro-infrastructure systems that strengthen the capacity of local farmers to increase productivity.5. Support communities in livestock and crop sectors by inventorying and disseminating indigenous knowledge, establishing and/or strengthening insurance schemes, early warning, early action system, vaccination campaign, disease control, etc., to cope with the stress based on climate variability.6. Develop and introduce a diverse range of integrated Soil fertility management (SFM), water harvesting, and conservation techniques to farmers as a sustainable means of improving soil fertility, intensifying agricultural production, and coping with extreme conditions (aridity, waterlogging, flood, etc.)7. Strengthen the Central Agricultural Research Institute (CARI) capacity for research development of climate smart agriculture initiatives in Liberia, including the setting up of seed banks and soil management, crop diversification, immigration, improved livestock breeds, etc.

8. Develop and implement agriculture technologies and methodologies, including hydrological technology models and scenarios for planning and ensure its promotion through agricultural programs by considering social-economic and gender differences.
9. Develop climate-resilient crops, promote drought – resistant, flood-tolerant, and establishing gene bank of climate-resilient varieties of indigenous food crops.
10. Develop and support coping strategies such as irrigation infrastructure, intercropping, aquaculture, climate-resilient plant varieties to support the farming system and encourage farmers to engage in them.
11. Promote the development of sustainable livestock programs for farmers, including grazing management systems. Livelihood diversification (bee harvesting, rabbit, guinea fowl, and indigenous poultry) and breeding animals to adapt to climate change.
12. Develop a communication strategy to increase farmers’ awareness of climate change and strengthen the coordination of existing structures and institutions available to help them adapt to its impact

OUTCOMES	n/a
INDICATORS	<ul style="list-style-type: none"> • Number of technical staff at MoA and CARI trained using technology for managerial aspect, integrated pest control, and plants pathogen • Staff end-of-training proportion on a national level and sub-national level using different agrochemical zones to generate crops vulnerability analyses • Increase capacity of subnational-local farmers to increase production using climate-proof agro-infrastructure systems • Number of communities members trained on livestock using early morning warning system base on climate variability proportion to regions • Create a department of research at MoA and CARI and academic institutions to develop a database for soil, seeds banks, climate-resilient crops, and gene banks geographically • Create a department of communication to disseminate climate change adaptation program at MoA and CARI using the EKMS and CCKS • Agricultural risk and vulnerability monitoring system deployed • Climate-resilient crops identify to increase adaptation
IMPLEMENTERS	EPA; MOA; UNDP; Universities; Subnational
COSTS & SOURCE OF FINANCE	n/a

PROJECT TITLE	ADAPTATION STRATEGIES OF THE COASTAL SECTOR
SECTOR	Coastal zone
CONTEXT	Climate change threatens coastal areas, which are already stressed by human activity, pollution, invasive species, and storms. Sea level rise could erode and inundate coastal ecosystems and eliminate wetlands. Warmer and more acidic oceans are likely to disrupt coastal and marine ecosystems. A rise in seawater level along the coast in Liberia could cause saltwater intrusion into freshwater areas. Flooding is an obvious and immediate threat to economic growth, energy supply, roads and transport, food and agriculture, education, health, water and sanitation, and social protection.
OVERALL OBJECTIVE	The development of the strategic plan for the sector to reduce the risk and vulnerability of climate change impacts the coastal sector and disseminate information on the climate change process around the sector.
ACTIVITIES	<ol style="list-style-type: none"> 1. Develop and implement coastal zone policy, design, and management plan(NDC, 2015) 2. Assess and build the capacity of agencies and managers responsible for managing coastal adaptive capacity in the sector. 3. Develop an integrated management plan for coastal zone management as well as an early warning system that includes training and capacity development for coastal management and monitoring 4. Promote and implement disaster risk management in general (especially disaster preparedness). 5. Support the rehabilitation and protection of wetlands and mangroves, including awareness and education of their host communities. 6. Develop and implement a program for climate-proofing new investments in infrastructure (roads, sewers, water supplies, and other infrastructure) in coastal settlements and rural areas to protect continuous access to livelihoods, health care, and education. 7. Design and implement a strategic communication action plan to inform and educate people about changes and challenges associated with coastal areas related to climate change and how they can adapt to cope with these changes and challenges. 8. Construct sea walls or revetment (NDC, 2015)
OUTCOMES	<ul style="list-style-type: none"> • Qualification of information for studies and projects on Liberia coastal zone • Promote and disseminate knowledge on coastal zone management • Policy and regulations of coastal zone established • Qualification of information for studies and projects on Liberia coastal zone
INDICATORS	<ul style="list-style-type: none"> • Establish a disaster management team to deal with coastal erosion • Policy and technical documents based on coastal management and modeling • Number of staff trained on the integrated coastal management plan and early warning system • Number of communities trained on wetlands and mangroves management • Number of awareness and education on coastal management, changes, and challenges • New technology to reduce or improve coastal erosion deployed.

IMPLEMENTERS	<ul style="list-style-type: none"> • Number of regional centers established • Number of coastal management teams established • Percentage of the work plan completed MME; EPA; Subnational
COSTS & SOURCE OF FINANCE	n/a

PROJECT TITLE	ADAPTATION STRATEGIES OF THE ENERGY SECTOR
SECTOR	Energy
CONTEXT	This strategy aims to improve energy efficiency and conservation and develop Liberia’s domestic energy resources to facilitate private sector participation and investment in the new low-carbon energy sector. Seasonal and daily temperatures and precipitation changes would affect the timing of peak electricity demands and the size of the peaks. For instance, very hot days and nights are already being observed in some parts of the country (e.g., Monrovia), increasing electricity demand to cool residences and businesses. In addition, extended periods of drought could reduce water availability for hydropower generation, particularly in parts of the land projected to be heavily hit by increased temperatures, which are also origins of significant rivers in the country.
OVERALL OBJECTIVE	The strategy will reduce the risk and vulnerability of climate change impacts on the energy sector, thereby sustaining energy production
ACTIVITIES	<ol style="list-style-type: none"> 1. Establish and promote a robust national program on solar energy (e.g., hybrid systems, installation of solar panels, promotion of solar street lighting, etc.) and other energy-efficient lighting technologies. 2. Support the provision of energy-efficient technologies such as energy-efficient bulbs to provide power and lighting for schools and other public institutions and households as a means of enhancing or introducing energy-efficient technologies. 3. Support the promotion and implementation of energy plantation schemes to minimize natural forest pressure and reduce energy stress. 4. Develop a system to regulate the sustainable use of biomass energy. 5. Promote and support the development and utilization of community-based off-grid/mini-grids. 6. Conservation and protection of water catchments, including around hydro-power and municipal water supply sources.

	<p>7. Prevent sedimentation that could hinder the production of energy in hydroelectric facilities</p> <p>8. Enhance implementation of an energy generation mix plan that increases the resilience of the current and future energy systems to the impacts of future climate variability and change.</p> <p>9. Establish Protection of water catchment around hydropower sources (NDC, 2015).</p>
OUTCOMES	<ul style="list-style-type: none"> • Assist with the planning process to monitor catchment around hydropower source • Strengthen government policy on renewable energy • increase energy availability in rural areas and promote sustainability
INDICATORS	<ul style="list-style-type: none"> • Number and frequency of analyses undertaken on water catchment surveillance • Catchment water quality is known • Number of climate-resilient infrastructures established • Renewable energy policies develop • Establish new technology on clean energy production • Number of staff or local communities trained on the production of biomass energy • Renewable energy policy developed and deployed.
IMPLEMENTERS	EPA; MME; LEC; Subnational
COSTS & SOURCE OF FINANCE	n/a

PROJECT TITLE	ADAPTATION STRATEGIES OF THE FISHERIES SECTOR
SECTOR	Fisheries
CONTEXT	Climate-induced changes in the biophysical characteristics of marine and freshwater areas in Liberia and extreme events will have significant effects on the ecosystems that support fish (especially inland). This will affect food security in multiple ways. These include loss of some fish species due to extinction and low productivity to support local consumption, migration of many fish species to aquatic environments with optimal climatic conditions beyond Liberian waters (those that are inaccessible to fishers), lower earnings from fish export due to reduced fish production, consequently reduced capacity to import food and exacerbation of food insecurity locally, and fisheries products and supplies. Hence, with the predicted increase in the demand for fish products, efforts to support

	<p>food and livelihood security need to be informed by predictions of climate change's impact on fish production and its associated social and economic consequences.</p>
OVERALL OBJECTIVE	To reduced climate-induced changes in the ecosystems that support the fisheries sector
ACTIVITIES	<ol style="list-style-type: none"> 1. Strengthen the capacity of the Bureau of National Fisheries, including staffing and logistics for research monitoring and enforcement. 2. Invest in and support artisanal fishing communities, including training, fishing gear, and alternative livelihoods. 3. Set up robust monitoring, reporting, and verification system that captures and reports timely and accurate changes in the stock of productivity and pressure on fisheries; and implement adaptive management practices for managing the sector. 4. Support research to fully understand pressures on fisheries related to climate change impacts and identify appropriate measures, including diversification of livelihood portfolio of fishery-dependent communities. 5. Identify, map, and protect areas valuable for fisheries (e.g., deep pools in river systems that serve as spawning areas), including the setting up of marine protected areas. 6. Support the establishment of a system to reduce external stressors on fisheries by instituting changes in a vessel or gear types as well as instituting actions and regulatory measures to reduce land-based sources of pollution (e.g., agricultural, and urban runoff) and destructive fishing practices (e.g., fishing with explosives and poisons). 7. Integrate fisheries fully into climate change adaptation and food security policies at the national level (draft and enact where non-existent) to ensure incorporation into broader development planning. 8. Support the diversification of the livelihood portfolio of fishery-dependent communities. 9. Support the establishment of early warning systems to identify probable threats and risks related to fisheries. 10. Support the establishment of improved information and communication networks for decision making and planning and between fishing communities to support information sharing about potential shocks in the system. 11. Establish a monitoring system for fishery management and climate change 12. Establish a surveillance system to promote a smart fishery system (NAPA, 2008) 13. Promote sustainable fishing practices and policies Regulate fishing practices to prevent overexploitation and fishing in restricted areas. 14. Establishment of a department of research at the Bureau of Fisheries to understand climate vulnerability assessment fishes 15. Spatially develop marine protected areas 16. Establish and deployed Bureau of Fisheries surveillance team 17. Number of the early warning system and monitoring system established to a reduced external stressor on fisheries 18. Community trained on sustainable fisheries activities
OUTCOMES	<ul style="list-style-type: none"> • Foster incorporation of information on climate change into the policies sector involved • Climate-smart fishery systems established

INDICATORS	<ul style="list-style-type: none"> • A fishery monitoring system established • Number of staff of governmental and non-governmental agencies trained-capacity enhanced • An appropriate surveillance system for fishing established • Number of staff at the Bureau of National Fisheries trained • Establishment of a department of research at the Bureau of Fisheries to understand climate vulnerability assessment fishes • Spatially develop marine protected areas • Establish and deployed Bureau of Fisheries surveillance team • Number of the early warning system and monitoring system established to a reduced external stressor on fisheries • Community trained on sustainable fisheries activities
IMPLEMENTERS	NaFAA; MoA; EPA; Subnational
COSTS & SOURCE OF FINANCE	n/a

PROJECT TITLE	ADAPTATION STRATEGIES OF THE FORESTRY SECTOR
SECTOR	Forestry
CONTEXT	Like other natural resource sectors, Liberia's forests are anticipated to be impacted by climate change. It is acknowledged that warmer temperatures and precipitation changes can affect tree growth, engender an increased proliferation of insects and pest control, and ultimately, the forestry sector's productivity. Also, extreme weather events (hurricanes and storms) can result in uprooting trees and commercial value and revenue loss. It is estimated that the adverse impacts of climate change will contribute to the destruction of forests and thereby promote greenhouse gas emissions, which will enhance global warming.
OVERALL OBJECTIVE	To reduce risk and climate change vulnerabilities of the sector implementing strategies
ACTIVITIES	<ol style="list-style-type: none"> 1. Strengthen the capacity of the FDA, including training of experts and logistics for forest management 2. Implement sustainable and, where applicable alternative livelihood initiatives for forest-dependent communities; to enable them to become less reliant on forest resources;

3. Promote community forest activities beyond timber extraction as a management tool for sustainable forest using indigenous species and knowledge.
4. Establish a comprehensive monitoring system for forest resources by building on existing systems (including non-timber forest products) to detect changes in the conditions of the ecosystem services provided by forests.
5. Implement reforestation and afforestation activities in degraded areas, increase rural income, and improve biodiversity richness, including wild fauna.
6. Identify and map for proper management of water catchment areas in forests that are valuable to communities.
7. Promote the consolidation of protected area network by considering landscape approach, ensuring that it consists of a large spectrum of forest types across various environmental gradients and enhance connectivity between habitats.
8. Establish and/or strengthen coordination mechanisms with other line ministries and agencies that might implement activities that affect forest and wildlife and ensure that the principle of sustainable forest and wildlife management is mainstreamed in national and sectoral policies and programs.
9. Enforce regulations related to illegal hunting to eliminate poaching and implement an environmental 'Code of/ethics in the wildlife sector.
10. Develop and implement a communication strategy to increase the awareness of relevant stakeholders, particularly forest-dependent communities, about the impact of climate change and how they can adapt to these changes.

OUTCOMES	<ul style="list-style-type: none"> • Awareness improves forest management • Forest protected • Identification of reforestation
INDICATORS	<ul style="list-style-type: none"> • Progress of ongoing activities on awareness and forest management and mapping • Progress on forest management and mapping improves. • Established and trained forest management team • Community education on the forest management and community forest management • Trained in geo sensing to monitor forest • Awareness and dissemination on forest management
IMPLEMENTERS	EPA; Subnational; FDA; MoA
COSTS & SOURCE OF FINANCE	n/a

PROJECT TITLE	ADAPTATION STRATEGIES OF THE WASTE MANAGEMENT SECTOR
SECTOR	Waste management
CONTEXT	A few years ago, the uncontrolled dumping and burning of garbage were quite common as a form of final disposal throughout Liberia. Such practices, compounded by inadequate waste collection systems and the lack of technical and environmental controls, are not only problematic because of the emissions into the atmosphere but also because of the impact on the health of the population and pollution of the nearby ocean, thereby affecting coral reefs and affecting the livelihood of thousands of Liberians whose livelihoods are directly and indirectly linked to fishing and eco-tourism. Addressing the impacts of Climate Change on the waste sector will involve various interventions involving adaptation and mitigation. It will look at the potential of existing waste management options for decreasing emissions and efforts to address related impacts associated with flooding, disasters, and sea-level rise.
OVERALL OBJECTIVE	To reduce climate change vulnerability and risk factors relating to the emission of greenhouse gases from waste disposal.
ACTIVITIES	<ol style="list-style-type: none"> 1. Strengthen capacity at the community and institutional level for integrated waste management. 2. Develop an integrated waste management strategy and system for all types of waste, assigning priority to prevent waste generation with nationally appropriate low greenhouse gas emission technologies that are well managed and compatible with methane capture and use for electricity generation. 3. Promote private-public partnership (PPP) and other ventures that attract financing for infrastructure investments in the waste sector. 4. Design and implement a system to run urban waste into input for agricultural production through composting waste for use in food security programs in the urban (urban agriculture) and rural areas. 5. Develop landfills for all major cities and use the Clean Development Mechanism (CDM) and Nationally Appropriate Mitigation Actions (NAMAs) to develop methane recovery and power generation projects in landfills.
OUTCOMES	<ul style="list-style-type: none"> • Integrate solid waste management into climate change risk management • Increase Liberia's capacity to face up the negative aspects of climate change, and significantly impacts that affect waste management
INDICATORS	<ul style="list-style-type: none"> • Personnel trained on waste management integration • Encourage private-public partnership to improve on waste management • New technology to transform waste into agriculture products to electricity production deploy • Construction of withholding landfill for major cities • Progress on solid waste management • Number sector members trained • Introduction to new technology

IMPLEMENTERS	MCC; EPA; Partners; Academic Institution; Subnational
COSTS & SOURCE OF FINANCE	n/a

PROJECT TITLE	ADAPTATION STRATEGY-CROSS-CUTTING WATER RESOURCES
SECTOR	Water resources
CONTEXT	Alterations in temperature and rainfall patterns brought on by climate change are likely to cause significant impacts on water availability (volumes and distribution), affecting the multiple uses of water and the general population. Extreme water-related climate events (flooding and drought) are likely to become more intense. Given the indispensability of water, water-related issues are likely to be among the first global climate change impacts felt by populations. Flooding and drought have increasingly caught the public's attention, not merely due to their economic and social impacts but also because of mass media coverage. It should, however, be remembered that impacts of extreme events attributed to climate change may also be exacerbated by other pressures on water resources, including inappropriate land use and settlement in river basins, increasing demand for urban water supply, agriculture, and power generation; the intensification of processes that impair water quality, higher exposure of populations, and increased anthropogenic intervention. The intensification of processes that impair water quality is higher exposure of people and increased anthropogenic intervention.
OVERALL OBJECTIVE	To develop integrated climatic and hydrological models and assess their impacts on water resources management.
ACTIVITIES	<ol style="list-style-type: none"> 1. Fast-track the implementation on the mainstreaming of climate change into water resources management. 2. Establish a surveillance team on water resources vulnerability.
OUTCOMES	n/a
INDICATORS	n/a

IMPLEMENTERS	WASH-Liberia; EPA; Liberia Water & Sewer Corporation (LWSC); Ministry of Health (MoH); National Public Health Institute of Liberia (NPHIL)
COSTS & SOURCE OF FINANCE	n/a

PROJECT TITLE	ADAPTATION STRATEGY – CROSS-CUTTING BIODIVERSITY
SECTOR	Ecosystem services
CONTEXT	In general, feedback on public awareness and perceptions of conservation of biodiversity, the maintenance of ecosystem services, and increasing the adaptive capacity of biodiversity and society to impact climate change have been challenging. However, in recent years, a new approach for addressing climate change effects, known as ecosystem-based adaptation (EbA) that relies on ecosystem services to reduce human vulnerability to climate change, has gained ground among managers and researchers. An EbA approach is based on the use of management, conservation, and recovery of ecosystems to enhance ecosystem services that enable society to adapt to the impacts of climate change. Benefits of EbA strategies include reduction of the vulnerability to gradual and extreme events, maintenance of the ecological integrity of ecosystems, carbon sequestration, greater food security, sustainable water-resources management, and an integrated approach to territorial management, all of which generate multiple economic, social, environmental, and cultural benefits for society.
OVERALL OBJECTIVE	Preparation of ecosystem-based adaptation strategy measures in areas at risk of extreme events and climate change impacts
ACTIVITIES	<ol style="list-style-type: none"> 1. Conduct a scoping study to identify and prioritize areas for Eba measures and to recommend specific approaches, institutional arrangements, and financing option 2. Conduct (nationwide/regional) assessments on potential climate change impacts on biodiversity and ecosystems.” 3. Fast track the integration of Ecosystem-based Adaptation (EbA) approaches into Liberia’s overall adaptation response to climate change
OUTCOMES	n/a
INDICATORS	n/a

IMPLEMENTERS	EPA; Partners
COSTS & SOURCE OF FINANCE	n/a

MADAGASCAR

ADAPTATION PRIORITY PROJECTS

PROJECT TITLE	MISE EN PLACE D'UNE CEINTURE VERTE POUR RENFORCER LA LUTTE CONTRE LA DESERTIFICATION ET LA RESILIENCE AU CHANGEMENT CLIMATIQUE
SECTOR	Land management
CONTEXT	<p>Madagascar est connu pour sa biodiversité exceptionnelle (5% de la biodiversité mondiale) avec un degré d'endémisme important (80% pour la flore et 95% pour la faune) ce qui a valu à la Grande île d'être classée parmi les pays à « Hotspot de biodiversité ». Cependant, ces ressources naturelles sont en dégradation continue à cause d'une pression continue d'origines anthropique et climatologique. Dans la partie sud de l'île, la sécheresse caractérisée par une moyenne de 400 mm de pluie par an est à l'origine du fait que des dizaines de milliers d'hectares de champs sont transformés en poussière selon l'ONU (Organisation des Nations Unies) en 2019. A cause de la sécheresse associée à la dégradation des ressources et par ricochet à la détérioration de l'économie de subsistance, plus d'un million de personnes vivant dans la partie Sud du pays sont menacées par la famine et quelques 14.000 personnes sont déjà dans des conditions proches de la famine, selon l'alerte lancée par le Programme alimentaire mondial de l'ONU (PAM, juin 2021) à Madagascar. Par conséquent, la sécheresse prolongée et le processus de désertification contraignent une grande partie des populations à se déplacer à l'intérieur des Districts des deux Régions du sud et une autre partie vers la Région de Menabe jusqu'à la partie Nord-Ouest et Nord de l'île pour la survie tout en pratiquant des activités dépendantes des ressources naturelles. En parallèle, le parc national d'Ankarafantsika, une deuxième zone de destination des migrants est un site sous haute pression due à des incendies répétés perpétrés par les populations en quête de pâturage et de terrain de culture. Ainsi, selon l'évaluation faite par la DREDD de Boeny en septembre 2021, ce Parc a perdu près de 3 200 hectares de ses forêts.</p>
OBJECTIVES	Accélérer la création de l'emprunte positive du MEDD sur le paysage forestier et la vie des communautés locales à travers la promotion d'une gestion durable des ressources naturelles associée à l'amélioration des conditions de vie des populations vivant dans les zones cibles.
ACTIVITIES	<p>1.1 Un système de production de plants de proximité est mis en place et fonctionnel ;</p> <p>1.2 : Des dispositifs de protection des sols et/ou de fixation des dunes utilisent des techniques variées et adaptées aux conditions locales ;</p> <p>1.3 : Des sites de démonstration des nouvelles techniques de reboisement, de l'agroforesterie et de protection contre les feux renforcent les connaissances et capacités des populations locales en matière de protection de leur environnement ;</p> <p>1.4 : La sécurité foncière des zones reboisées et terrains aménagés est matérialisée par des statuts juridiques clairs ;</p> <p>2.1: Les capacités des pépiniéristes locaux (privés ou communautaires) pour la production et la vente des plants de qualité (plantes endémiques et plantes exotiques) sont renforcées ;</p>

	<p>2. 2 : La production du matériel végétal (jeunes plants, graines forestières, etc.) associée au développement des chaînes de valeur prioritaires (arboricultures fruitières et produits forestiers non ligneux, etc.) et la protection des forêts se transforment en activités génératrices de revenus pour les communautés locales</p> <p>3.1 : Les Services déconcentrés du MEDD disposent de nouvelles infrastructures bien équipées et éco énergétiques au niveau des Districts ;</p> <p>3.2 : Les 4 Régions et les 12 Districts cibles sont dotés de services requis et de personnel suffisant ;</p> <p>3.3 : Un système de suivi de l'évolution des ressources naturelles interconnecté avec les Régions et l'administration centrale (SIG, suivi des points de feux, rapports divers, etc.) est mis en place ;</p> <p>3.4 : Une stratégie d'information, d'éducation et de communication favorise l'adhésion des populations cibles à l'action</p>
TARGET ID (TARGER AREAS, BENEFICIARIES)	Région : Androy, Anosy, Boeny, Menabe et Analanjirofo Districts : Ambovombe, Tsihombe, Bekily, Beloha, Amboasary, Taolagnaro, Betroka, Ambato-Boeny, Marovoay, Morondava, Soanierana Ivongo
IMPLEMENTERS	Ministère de l'Environnement et Développement Durable et Ministère de l'Agriculture, de l'Élevage et de la Pêche.
INDICATORS	<ul style="list-style-type: none"> - 168 km de brise vent - 18.334 ha de dune stabilisés - 18.122 ha de ceintures vertes installées
TIMELINE	10 ans
COSTS	USD 83.3 million dont USD 25.1 million disponible (58.1 million USD à rechercher)
FUNDING SOURCES	Banque Mondiale, Union Européenne, QMM

PROJECT TITLE	RENFORCEMENT DE L'ADAPTATION DU SECTEUR AGRICOLE ET DE LA RÉSILIENCE DES POPULATIONS RURALES DANS LE GRAND SUD DE MADAGASCAR
SECTOR	Secteur Agricole
CONTEXT	Il est attendu que les sécheresses s'intensifient en raison du changement climatique, affectant significativement les régions du sud de Madagascar. Soumis à un risque important de déficit hydrique et subissant d'ores et déjà des périodes de sécheresse récurrentes et une dégradation marquée des ressources naturelles, les activités économiques, particulièrement celles de l'agriculture et de l'élevage, se retrouvent affaiblies. Par ailleurs, d'autres aléas tels que les cyclones, même s'ils sont plus rares, peuvent venir menacer la résilience des activités agricoles.
OBJECTIVES	<ul style="list-style-type: none"> - La résilience des agrosystèmes sera renforcée et plus généralement, celle des populations rurales;

ACTIVITIES	<ul style="list-style-type: none"> - Les pratiques agricoles et d'élevage seront adaptées à des conditions climatiques plus rudes. <ol style="list-style-type: none"> 1. PROMOUVOIR LA GESTION INTÉGRÉE ET DURABLE DES RESSOURCES NATURELLES À TRAVERS L'ÉLABORATION ET LA MISE EN ŒUVRE DE RÉFÉRENTIELS DIRECTEURS <ul style="list-style-type: none"> - Pour les régions ciblées, élaborer conjointement le SRAT et le Plan Régional de Développement (PRD) veillant à intégrer spécifiquement la gestion durable des ressources en eau (tenant compte du schéma de gestion et d'aménagement des ressources en eau existant), des espaces de pâturages, des bassins versants, etc; - Former les services décentralisés (DIREDD, DREDD et autres STD) à l'application de tels cadres ; 2. ADAPTER LES PRATIQUES AGRICOLES AU CHANGEMENT CLIMATIQUE <ul style="list-style-type: none"> - Renforcer les recherches de variétés adaptées à la baisse de la pluviométrie et à la hausse de la température ; - Traduire en actions les recommandations de recherche pour la conservation des eaux et des sols, ainsi que les luttes contre l'ensablement/l'avancée des dunes ; - Investir dans la maîtrise de l'eau (systèmes d'irrigation, de stockage des eaux) tenant compte des SDAGRE/SDAGIRE ; - Développer des techniques alternatives contribuant à la résilience à long terme des zones d'élevage extensif, afin d'abandonner progressivement les pratiques de feux de brousse ; - En concertation avec les communautés, favoriser la mobilité du bétail en accord avec les systèmes extensifs en place ; - Mettre en œuvre un programme d'hydraulique pastorale ; - Mettre en œuvre la Stratégie Nationale de Restauration des Paysages et des Forêts 3. RENFORCER LA RÉSILIENCE SOCIO-ÉCONOMIQUE DES POPULATIONS RURALES PAR LE DÉVELOPPEMENT D'ACTIVITÉS GÉNÉRATRICES DE REVENUS <ul style="list-style-type: none"> - Diversifier les activités agricoles et d'élevage (diversification de la production, commerce de sous-produits agricoles, tourisme, etc.) ; - Développer des chaînes de valeur (Cf. en particulier le programme national 2: Renforcement de la résilience des populations rurales par le développement et l'organisation de filières d'exportation) ; 4. INVESTIR DANS LE SECTEUR AGRICOLE ET ACCOMPAGNER LES COMMUNAUTÉS RURALES VIA DES ACTIONS DE SENSIBILISATION, FORMATION ET RENFORCEMENT DE CAPACITÉ
TARGET ID (TARGER AREAS, BENEFICIARIES)	Localisation : Androy, Anosy, Atsimo Andrefana, Atsimo Atsinanana et Ihorombe
IMPLEMENTERS	Ministère en charge de l'agriculture et de l'élevage, Ministère en charge de l'aménagement du territoire, Office National pour l'Environnement
INDICATORS	<ul style="list-style-type: none"> - Nombre de ménages bénéficiant de l'amélioration de la résilience du territoire aux chocs climatiques (en particulier sécheresses) ; - Nombre de ménages ayant renforcé leurs capacités de réponse aux évènements extrêmes (sécheresses) ;

	<ul style="list-style-type: none"> - Taux d'adoption de techniques culturales améliorées ; - Nombre de ménages bénéficiant d'une amélioration des capacités d'auto-organisation et d'apprentissage ; - Nombre de SRAT et de PRD élaborés qui tiennent compte des enjeux climatiques ; - Nombre de plans de mobilité bétail élaborés et mis en œuvre au niveau communal
TIMELINE	3 à 5 ans
COSTS	USD 15 millions
FUNDING SOURCES	AfDB, FEM, LDCF, Fonds d'Adaptation

PROJECT TITLE	RENFORCEMENT DE LA RÉSILIENCE DES POPULATIONS RURALES PAR LE DÉVELOPPEMENT ET L'ORGANISATION DE FILIÈRES D'EXPORTATION
SECTOR	Filières d'Exportation
CONTEXT	Madagascar dispose de filières d'exportation importantes : les litchis (18 000 t), les épices (dont la vanille) qui sont sources de rentrée de devises pour le pays et qui jouent un rôle clé dans la croissance du pays. Toutefois, ces filières demeurent très en-dessous de leurs performances de par une forte vulnérabilité de la production aux aléas climatiques et un manque de structuration et d'organisation des filières en matière d'agro-business. Le changement climatique pourrait déstabiliser encore plus la filière en influençant les rendements mais aussi la qualité des produits.
OBJECTIVES	En ligne avec le PEM (Priorité 27), ce programme vise à mieux organiser ces filières de rente de manière à diminuer leur vulnérabilité au changement climatique en diversifiant les productions tout en rendant plus performantes à l'exportation les filières existantes. Un accompagnement sera fourni au renforcement des chaînes de valeur existantes et au développement de nouvelles, afin de mieux structurer les filières de niches et d'accroître la résilience des populations rurales.
ACTIVITIES	<ol style="list-style-type: none"> 1. RENFORCER LA RÉSILIENCE SOCIO-ÉCONOMIQUE DES POPULATIONS RURALES PAR LE DÉVELOPPEMENT DE CHAINES DE VALEUR <ul style="list-style-type: none"> - Renforcer le développement des filières agricoles et d'élevage existantes (rentabilité, écoulement sur le marché, etc.) ; - Développer de nouvelles pratiques pour renforcer la résilience face au changement climatique des filières agricoles et d'élevage génératrices de revenus (vanille, café, girofle, huile de ricin, miel, haricots, Niébé, pois du cap et la viande de caprins et bovins); - Créer des partenariats entre producteurs et opérateurs privés pour le développement de l'agrobusiness, en tenant compte du facteur « changement climatique » 2. FOURNIR DES SERVICES DE CONSEILS AGRO MÉTÉOROLOGIQUES ET AGRICOLES À LA DISPOSITION DES ACTEURS <ul style="list-style-type: none"> - Adapter les modèles de production des chaînes de valeur au changement climatique ; - Intensifier les recherches sur l'amélioration de la production de la transformation et de la résilience des produits de rente.

	3. INVESTIR DANS LE SECTEUR AGRICOLE ET ACCOMPAGNER LES COMMUNAUTÉS RURALES VIA DES ACTIONS DE SENSIBILISATION, FORMATION ET RENFORCEMENT DE CAPACITÉ
TARGET ID (TARGER AREAS, BENEFICIARIES)	Localisation : SAVA, Analanjirofo, Vatovavy Fitovinany (zones avec culture de rente), Atsinanana (export).
IMPLEMENTERS	Ministère en charge de l'agriculture et de l'élevage, Ministère en charge de l'environnement, Office National pour l'Environnement.
INDICATORS	<ul style="list-style-type: none"> - Nombre de ménages dont les revenus ont augmenté à la suite du développement d'activités génératrices de revenus, résilientes au changement climatique ; - Nombre de ménages bénéficiant d'une amélioration des capacités d'auto organisation et d'apprentissage.
TIMELINE	8 ans
COSTS	USD 15 millions
FUNDING SOURCES	AfDB, FEM, GIZ, Fonds d'adaptation.

PROJECT TITLE	RENFORCEMENT DE L'ADAPTATION DE LA FILIÈRE PÊCHE ET DÉVELOPPEMENT DE SYSTÈMES D'ALERTE ET DE PLANS D'ACTION ASSOCIÉS POUR ACCROÎTRE LA RÉSILIENCE DES POPULATIONS CÔTIÈRES ET DES ÉCOSYSTÈMES MARINS
SECTOR	Pêche
CONTEXT	Le secteur pêche est un secteur vulnérable aux aléas climatiques en particulier des cyclones, dont l'intensité devrait augmenter de 46% et se déplacer vers le nord. Or, dans certaines régions, ce secteur est source de revenus pour des ménages souvent pauvres et vivant dans des localités périphériques. Aussi, le présent programme d'action vise un renforcement de la résilience des acteurs du secteur pêche dans un contexte de changement climatique. Ce programme qui s'intègre dans le plan de développement du pays présente également des co-bénéfices environnementaux pour la préservation des écosystèmes marins. Le présent programme d'action est cohérent avec les engagements internationaux pris par Madagascar. Certaines actions détaillées ci-dessous font notamment écho à la Contribution Déterminée au niveau National (CDN, 2015) et au Programme d'Action National d'Adaptation au changement climatique (PANA, 2006).
OBJECTIVES	Le programme a pour objectif le renforcement de la résilience des populations côtières à l'augmentation du niveau de la mer et à l'intensification des cyclones dans un contexte de changement climatique. Pour ce faire, il prévoit des actions de soutien à l'adaptation de la filière pêche au changement climatique, le développement de systèmes d'alerte et de plans d'actions associés pour les zones côtières, ainsi qu'un axe de préservation des écosystèmes marins, contribuant à la réduction des gaz à effet de serre.
ACTIVITIES	1. DÉVELOPPER ET VULGARISER DE NOUVELLES TECHNIQUES DE PÊCHE RÉSILIENTES FACE AU CC

- Prendre toutes les mesures adéquates pour l'application effective des textes réglementaires existants concernant la pêche et la préservation des ressources halieutiques ;
 - Restructurer la Pêcherie Traditionnelle Nationale et la réglementer (zonage, carte pêcheur, marquage engin, etc.) ;
 - Préserver les zones frayères à poissons ;
 - Développer des mécanismes de pêche durable.
2. DÉVELOPPER LES SYSTÈMES D'ALERTE PRÉCOCE MÉTÉO POUR LES PÊCHEURS
- Renforcer le Système d'Alerte Précoce avec le BNGRC pour l'ensemble des régions côtières ;
 - Développer des plans et opérations d'urgence en cas d'alerte pour chacune des localités des régions concernées;
3. FORMALISER LES MÉTIERS DES PÊCHEURS ET RENFORCER LEUR CAPACITÉ MANAGÉRIALE
- Renforcer l'intégration des pêcheurs dans une plateforme de concertation, afin qu'ils puissent s'approprier du développement durable par rapport à leurs activités ;
 - Développer un programme de renforcement de capacité des associations de pêche.
4. METTRE EN PLACE DES RÉSERVES MARINES ET PROTÉGER LES RÉCIFS CORALLIENS ET LES MANGROVES
- Appuyer le processus de mise en protection des Aires Marines Protégées incluant les systèmes coralliens et les mangroves à haute valeur de conservation ;
 - Développer un programme de restauration des mangroves dégradées ;
 - Entreprendre des mesures pour la conservation de l'ensemble des récifs coralliens et la promotion d'une gestion durable concertée de tous les récifs coralliens.

TARGET ID (TARGER AREAS, BENEFICIARIES)	Localisation : Analanjirifo, Atsimo Andrefana, Diana, Melaky, Menabe, Boeny et SAVA.
IMPLEMENTERS	Ministère en charge de la pêche, Ministère en charge de l'enseignement technique et de la formation professionnelle ; DGM ; BNGRC, ONE, CNGIZC, ONG.
INDICATORS	<ul style="list-style-type: none"> - Nombre de ménages dont l'activité principale est la pêche ayant renforcé leurs capacités de réponse aux évènements extrêmes (cyclones, vents forts) ; - Nombre de ménage dont la source de revenu principal est la pêche et dont les revenus ont augmenté à la suite d'un changement dans la gestion des ressources ; - Nombre de ménages dont l'activité principale est la pêche ayant renforcé leurs capacités d'absorption des chocs climatiques en matière de sécurité alimentaire ; - Nombre de ménages bénéficiant d'une amélioration des capacités d'auto organisation et d'apprentissage.
TIMELINE	3 ans
COSTS	USD 12 millions (Estimation sur la base de fond FEM déjà reçu par Madagascar pour le secteur pêche)

FUNDING SOURCES	FEM, LDCF, Banque mondiale
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PROJECT TITLE	AMÉLIORATION DE L'ACCÈS À L'EAU POTABLE EN MILIEUX URBAINS ET RURAUX
SECTOR	Ressources en eau
CONTEXT	<p>En 2017, le taux moyen national d'accès à l'eau potable est de 24 %, tandis que 6,9% de la population utilise des latrines améliorées et seulement 19% ne pratiquent plus de défécation à l'air libre, selon le Ministère de l'Énergie, de l'Eau et des Hydrocarbures. En milieu rural, la consommation de l'eau de surface (lac, rivière, ruisseau) est pratiquée par plus de 20% de la population. Ce taux tend à la baisse face aux impacts du changement climatique (évapotranspiration accrue, tarissement des ressources, etc.). Ainsi, cette défaillance en eau-assainissement-hygiène est en partie à l'origine des maladies à support hydrique dont la diarrhée, qui représentent les principales causes de morbidité et de mortalité à Madagascar, surtout celles des enfants. Outre les problématiques liées à la qualité (salubrité, potabilité), le secteur Eau et Assainissement fait également face au manque de moyens freinant l'optimisation d'une bonne gestion, aux conséquences de la dégradation de l'environnement (ensablement, érosion, etc.), à l'insuffisance de la protection contre les crues et autres aléas climatiques, et à l'exposition permanente aux pollutions. À ceci s'ajoutent la faible sensibilisation de la population vis à vis de l'utilisation de l'eau et de la maintenance des infrastructures hydrauliques, l'application insuffisante des textes réglementaires et les impacts des diverses pressions anthropiques et naturelles telles que la déforestation et l'érosion. De l'autre côté, le manque d'entretien et la vétusté des infrastructures ne feront qu'exacerber la situation, notamment dans les nombreux quartiers des milieux urbains. Le changement climatique constitue un facteur de risque de propagation de maladies, les maladies déjà climato-sensibles risquant de s'exacerber dans ce contexte de forte exposition dans les milieux urbains et ruraux. Face à ce contexte, le pays est conscient de la nécessité de mettre en œuvre et à l'échelle la Gestion Intégrée des Ressources en Eau (GIRE) qu'il est en train de développer progressivement. Par ailleurs, les Directives nationales pour les infrastructures Accès à l'Eau-Potable résistantes aux aléas climatiques ont été également établies.</p>
OBJECTIVES	<ul style="list-style-type: none"> - L'accès universel à l'eau potable de bonne qualité et à l'assainissement (en cohérence avec le Plan Emergence de Madagascar et l'atteinte des ODD) tenant compte du changement climatique est garanti ; - Les priorités spécifiques aux femmes sont identifiées et prises effectivement en compte dans les planifications et les constructions d'infrastructures d'eau et d'assainissement.
ACTIVITIES	<ul style="list-style-type: none"> - Élargir sur tout le territoire la construction et la réhabilitation d'infrastructures d'eau et d'assainissement adaptées au changement climatique suivant la « Directive Nationale pour la construction des infrastructures d'Alimentation en Eau Potable (AEP) à l'échelle communautaire résistantes aux aléas climatiques » établie, et tenant compte du contexte urbain ou rural ;

- Dans le prochain Code de l'eau révisé, prévoir dans la partie concernant la GIRE les modes de gouvernance des infrastructures (clarification des responsabilités, notamment celles des collectivités et des AUE, responsabilité quant aux recherches de financement, rôle de l'État, implication du secteur privé, etc.) ;
- Définir et documenter comme des référentiels nationaux des objectifs et des indicateurs de réduction des inégalités homme-femme dans la planification et la mise en œuvre de l'amélioration de l'accès à l'eau potable et à l'assainissement ;
- Renforcer la promotion des messages clés WASH et soutenir les initiatives sur la bonne pratique d'hygiène, afin de réduire les maladies liées à l'eau et l'assainissement ;
- Renforcer les capacités des acteurs clés à tous les niveaux en termes de gestion des ressources en eau, en les appuyant à la planification stratégique et opérationnelle des activités prioritaires en réponse aux impacts des aléas climatiques ;
- Au niveau des Collectivités (Régions, Communes), intégrer dans les planifications de travail des actions ciblées renforcées d'Information Education-Communication communautaire pour la protection des bassins-versants, la lutte contre la déforestation et le respect des infrastructures (tenant compte des différents facteurs : genre, socio-économie, contexte environnemental et climatique) ;
- Au niveau de chaque région, élaborer régulièrement (tous les ans) un plan de contingence et opérationnel et tenant compte du genre, pour le secteur eau et assainissement face aux aléas climatiques.

TARGET ID (TARGER AREAS, BENEFICIARIES) IMPLEMENTERS	Localisation : National Ministère en charge de l'eau, Ministère en charge de l'environnement, BNGRC, ONE, et les Partenaires Techniques et Financiers prêts à se positionner (UNICEF, BAD, ...).
INDICATORS	<ul style="list-style-type: none"> - Augmentation des taux d'accès à l'eau potable et à l'assainissement au niveau de chaque Région, distinguant milieu urbain et milieu rural ; - Nombre d'infrastructures d'eau et d'assainissement au niveau de chaque Région, répondant à la Directive Nationale et tenant compte du genre ; - Nombre d'infrastructures résilientes au changement climatique ; - Baisse du prix de l'eau à la consommation - Diminution du nombre de conflits d'usage de l'eau ; - Nombre de projets liés à la gestion durable de l'eau ; - Baisse du taux de morbidité des maladies liées à l'eau, l'assainissement et l'hygiène
TIMELINE	5 ans
COSTS	USD 10 millions (Sur la base des financements GCF reçus pour un projet similaire)

FUNDING SOURCES	GCF, BAD.
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PROJECT TITLE	RENFORCEMENT DES SYSTÈMES D'ALERTE PRÉCOCE POUR LA RÉSILIENCE DU SECTEUR DE LA SANTÉ FACE AU CHANGEMENT CLIMATIQUE À MADAGASCAR
SECTOR	Santé
CONTEXT	Le changement climatique est facteur de risque de propagation de maladies, les maladies déjà climato-sensibles risquant de s'exacerber. L'étude de vulnérabilité conduite en 2015 par le ministère en charge de la santé, en collaboration avec la Direction Générale de la Météorologie montre une accentuation de l'exposition du territoire aux aléas climatiques sous changement climatique. Les communautés les plus vulnérables sont les populations les plus enclavées et à la fois pauvres ou très pauvres, ayant très peu ou pas du tout accès aux services de santé, aux interventions urgentes, aux informations et à la sensibilisation sur la manière de se protéger ou de se prémunir des maladies, et où la considération du genre ne constitue pas une priorité
OBJECTIVES	Les systèmes d'alerte précoce multirisques utilisant les nouvelles données climatiques disponibles (fournies par la Direction Générale de la Météorologie) et alignés avec les objectifs de la CDN, de la SNGRC et du PNASS sont renforcés.
ACTIVITIES	<ul style="list-style-type: none"> - Élaborer un SAP santé multirisques avec des indicateurs sur la considération des spécificités des genres (hommes, femmes, enfants, personnes âgées, personnes en situation de handicap, etc.), en collaboration et coordonné avec la DGM et le BNGRC ; - Former régulièrement les acteurs sur le terrain (agents de santé communautaire, structures locales de gestion des risques et des catastrophes) sur l'opérationnalisation du SAP à leur niveau et réaliser des exercices de simulation (SIMEX) considérant le genre, en ciblant prioritairement les Districts les plus climato-sensibles ; - Réaliser une étude de vulnérabilité plus étendue géographiquement au changement climatique du secteur santé publique, tenant compte de données récentes de la DGM.
TARGET ID (TARGET AREAS, BENEFICIARIES)	Localisation : National
IMPLEMENTERS	Ministère en charge de la santé publique, ONE et Partenaires Techniques et Financiers prêts à se positionner sur le secteur santé (Banque mondiale, OMM, OMS, UNICEF, UNFPA, USAID, GIZ, JICA, ONG locales, etc.).
INDICATORS	<ul style="list-style-type: none"> - Diminution des maladies liées au climat par rapport aux années précédentes à tous les niveaux (national, régional) ; - Nombre de localités enclavées disposant et mettant en œuvre un SAP multirisques, incluant la santé ; - Diminution du taux des victimes classées dans les catégories vulnérables (femmes, femmes enceintes, nourrissons, enfants, personnes en situation de handicap, personnes âgées, etc.) aux aléas climatiques ;

	<ul style="list-style-type: none"> - Proportion d'agents de santé ayant bénéficié des séances d'information et de formation sur la santé et le changement climatique ; - Proportion de Centres de Santé de Base utilisant les SMS/tablettes pour l'alerte précoce ; - Proportion de Services de districts de santé publique disposant d'un système de surveillance et d'alerte précoce en climat et santé fonctionnelle.
TIMELINE	5 ans
COSTS	USD 3 millions
FUNDING SOURCES	Fonds mondial, Banque Mondiale, OMM, OMS, UNICEF, UNFPA, USAID, GIZ, JICA, etc.

PROJECT TITLE	ACCÉLÉRATION DU REBOISEMENT À TRAVERS L'OPÉRATIONNALISATION DU MÉCANISME REDD+ ET LE DÉVELOPPEMENT DE SERVICES ÉCOSYSTÉMIQUES
SECTOR	Services Écosystémiques
CONTEXT	Les forêts de reboisement réparties dans le pays ne comptent actuellement qu'une superficie de 415 000 ha. Avec le mécanisme REDD+, Madagascar prévoit, pour le secteur UTCATF, d'atteindre 61 MtCO ₂ de Réductions d'Emissions (REs) d'ici 2030. D'autre part, un engagement de 270 000 ha de reforestation en essences autochtones a été déclaré, en vue d'accroître le stockage de carbone. En vue d'améliorer le bien-être de la population locale, de développer durablement l'économie, et de conserver la richesse en biodiversité, d'ici 2030, le taux de déforestation sera maîtrisé, et le couvert forestier sera augmenté afin de contribuer à la réduction de 14% des émissions de GES du secteur forestier. Cette déclaration vise à inverser la tendance de régression de la couverture forestière et à mettre en place une gestion durable des ressources forestières, tout en améliorant les stocks de carbone et les conditions de vie des populations riveraines.
OBJECTIVES	Le secteur UTCATF est un secteur clé de la lutte contre le changement climatique à Madagascar et ce programme vise à contribuer à l'objectif national fixé par la CDN en termes de réduction des émissions, et à renforcer la résilience aux changements climatiques du pays en augmentant de façon significative la surface forestière nationale
ACTIVITIES	<ul style="list-style-type: none"> - Mettre en œuvre le mécanisme REDD+ (stratégie REDD+ et décret REDD+) ; - Reboiser à grande échelle et restaurer les forêts dégradées ; - Mieux gérer les prairies, réduire les superficies défrichées pour divers besoins et surtout la pratique du « tavy » ; - Soutenir le secteur arboricole et l'agroforesterie ; - Promouvoir l'utilisation efficace et durable de la ressource en bois ; - Créer des zones d'approvisionnement en bois avec des essences adaptées ; - Aménager des bassins versants.

TARGET ID (TARGER AREAS, BENEFICIARIES)	Localisation : Diana, Boeny, Haute Matsiatra, Vakinankaratra, Itasy, Melaky
IMPLEMENTERS	MEDD, ONE et les ONG partenaires.
INDICATORS	<ul style="list-style-type: none"> - Tonnes de dioxyde de carbone équivalent réduits ou évités (y compris l'augmentation des stocks) sur 10 ans ; - Surfaces additionnelles de terres bénéficiant d'une meilleure résilience au changement climatique ; - Nombre d'hectares avec une augmentation de la couverture arborée et végétale (réduction des glissements de terrain et de l'érosion, résistance aux inondations) ; - Superficies reboisées ; - Nombre de pépinières créées au niveau de chaque Région ; - Taux de bassins versants aménagés.
TIMELINE	10 ans
COSTS	USD 60 millions (Estimation effectuée sur la base du document de proposition d'un projet similaire GCF)
FUNDING SOURCES	PTF déjà engagés dans la reforestation à Madagascar (non exhaustif) : EIB, World Bank, GCF.

PROJECT TITLE	AMÉLIORATION DE LA CONSERVATION DES FORÊTS NATURELLES ET DE LA GESTION DES AIRES PROTÉGÉES INTÉGRANT L'AMÉNAGEMENT DE ZONES DE REFUGE CLIMATIQUE À L'INTÉRIEUR ET DANS LES PÉRIPHÉRIES
SECTOR	Forêts
CONTEXT	Les forêts naturelles couvrent 8,9 millions d'hectares en 2014. L'ensemble du territoire est soumis à un taux annuel croissant de déforestation, s'élevant à 1,18 %/an pour la période 2010-2014 (Tableau de Bord Environnemental National -TBEN, 2019). Le taux de déforestation varie selon les régions mais en moyenne, les forêts situées à moins de 800 m d'altitude sont les plus touchées par la déforestation, avec un taux de 1 % par an. D'une manière générale, les causes principales de la déforestation relèvent en grande partie de plusieurs facteurs interdépendants au niveau social et au niveau économique, mais un facteur prépondérant est le besoin en bois-énergie. La perte de superficie forestière se traduit par la perte d'habitat qui fragilise de ce fait, non seulement les écosystèmes et leurs fonctions écologiques, mais tout un environnement social, économique et culturel, et le changement climatique est un facteur exacerbant dans ce prisme de dégradation.
OBJECTIVES	Les objectifs visés par ce programme sont le maintien des fonctions écologiques des écosystèmes et la limitation des nouvelles dégradations.
ACTIVITIES	<ul style="list-style-type: none"> - Protéger les forêts naturelles et réduire le prélèvement de bois ;

	<ul style="list-style-type: none"> - Renforcer l'application des textes législatifs et des politiques relatives à la durabilité, à la conservation et à la restauration des habitats dans les écosystèmes dégradés ; - Sécuriser le statut foncier des Aires protégées ; - Mettre en place un programme de restauration à grande échelle des écosystèmes les plus menacés ; - Développer un programme de recherche, afin de décrire l'écologie de l'ensemble des taxons de la biodiversité Malagasy en vue de maximiser les opportunités d'adaptation dans la mise en place des activités futures ; - Maintenir la couverture forestière existante et continuer à créer un réseau de corridors forestiers de conservation ; - Promouvoir la création d'occupations moins dépendantes des ressources naturelles.
TARGET ID (TARGER AREAS, BENEFICIARIES)	Localisation : Analanjirifo, Anosy, Atsimo Atsinanana, Atsinanana, DIANA, SAVA, Sofia, Vatovavy Fitovinany (Corridor de l'Est) ; Atsimo Andrefana, Melaky, Menabe, (Forêts épineuses).
IMPLEMENTERS	Ministère en charge de l'environnement, DSPAM, MNP et des Partenaires Techniques et Financiers prêts à se positionner, FAO, ONE, ONG.
INDICATORS	<ul style="list-style-type: none"> - Superficie des restaurations forestières réalisées ; - Nombre d'îlots forestiers reconnectés ; - Taux de prélèvement de bois ; - Taux de régénération par espèce végétale ou faunistique ; - Période/durée de migration par espèce par année.
TIMELINE	10 ans
COSTS	USD 30 millions (Estimation sur la base des projets GCF déjà financés sur le sujet)
FUNDING SOURCES	FAO, PNUD, FEM

PROJECT TITLE	PROTECTION DES INFRASTRUCTURES CÔTIÈRES ET DES ACTIVITÉS ÉCONOMIQUES (DONT LE TOURISME) CONTRE L'ÉLEVATION DU NIVEAU DE LA MER
SECTOR	Zones côtières
CONTEXT	Les impacts du changement climatique sur les zones côtières de Madagascar sont de plus en plus visibles, et se traduisent principalement par l'érosion marine et la dégradation marquée du littoral. La hausse du niveau de la mer, l'intensification des cyclones et l'érosion des côtes sont sources de risques importants pour les infrastructures côtières. Dans la région d'Atsinanana, l'érosion du littoral n'a cessé de s'accélérer depuis 1974, entraînant par exemple à Toamasina l'ensablement progressif de la rade et du port. Les

	<p>villes du Moyen-Ouest du littoral malgache connaissent également des stades d'érosion avancés. Les activités économiques, dont le tourisme, la pêche, le secteur BTP, se retrouvent donc menacées, ainsi que la sécurité de la population.</p>
OBJECTIVES	<ul style="list-style-type: none"> - La protection des infrastructures côtières aux risques climatiques sera renforcée contribuant ainsi à la résilience des activités économiques dont la transformation adaptative du secteur touristique ; - L'érosion côtière sera diminuée et contrôlée.
ACTIVITIES	<ul style="list-style-type: none"> - Appliquer des techniques de lutttes antiérosives adaptées pour la stabilisation des dunes et pour éviter l'érosion des littoraux ; - Construire des ouvrages de défense rigides en concertation avec les communautés locales de base ; - Mettre en place des activités touristiques respectueuses de l'environnement ; - Réaliser les actions préconisées dans le Plan d'Action National pour la Gestion Intégrée des Zones Côtières (PANGIZC) liées au changement climatique ; - Piloter de nouvelles initiatives pour développer des activités génératrices de revenus en lien avec le tourisme (par exemple, l'écotourisme) qui offrent des opportunités autant aux femmes qu'aux hommes.
TARGET ID (TARGER AREAS, BENEFICIARIES)	Localisation : Analanjirifo, Atsinanana, Menabe, Sava, Anosy, Vatovavy-Fitovinany, Atsimo Andrefana, Boeny (Mahajanga) et Atsimo Atsinanana
IMPLEMENTERS	Ministère en charge des transports et du tourisme, Ministère en charge de l'aménagement du territoire, BNGRC, ONE.
INDICATORS	<ul style="list-style-type: none"> - Nombre d'infrastructures côtières dont la résilience aux risques climatiques a été renforcée ; - Nombre d'activités économiques (tourisme, portuaire, ...) protégées, adaptées et développées face aux impacts du changement climatique ; - Nombre de ménages dont les revenus ont augmenté grâce au développement et protection des activités économiques aux produits du changement climatique ; - Evolution de l'érosion côtière (évolution du niveau de la mer et vitesse de recul du trait de côte) ; - Nombre de communautés bénéficiaires pour la quatrième composante ; - Nombre d'AGR créées ; - Evolution du nombre de touristes ; Liste de mesures de protection du littoral entrepris ; - Nombre de constructions de défense rigides réalisées : Nombre / longueur d'infrastructures conformes aux normes climatiques réalisées ; - Sources potentielles de financement : Pourcentage d'actions réalisées.
TIMELINE	3 ans
COSTS	USD 25 millions (Sur la base d'estimation de projets similaires)
FUNDING SOURCES	FEM, CIF.

PROJECT TITLE	AMÉLIORATION DES SYSTÈMES D'ALERTE PRÉCOCE AUX CYCLONES, DANS LE CADRE D'UN EFFORT RÉGIONAL AU NIVEAU DE L'OCÉAN INDIEN
SECTOR	EWS
CONTEXT	Du fait de leurs positions géographiques dans le bassin du sud-ouest de l'Océan Indien, les îles de cette partie du globe, notamment Madagascar, La Réunion et Maurice sont exposés aux cyclones. Tous les ans, au moins un de ces États est touché par un cyclone. Avec le phénomène du changement climatique, les cyclones deviennent de plus en plus intenses et leurs trajectoires se déplacent. Aussi, d'autres pays comme le Mozambique sont ou peuvent être tout aussi concernés. Toutefois, la résilience et la capacité de réponse de chaque pays ne sont pas les mêmes, tandis que la considération des spécificités du genre n'est pas encore totalement intégrée dans les approches. Des actions concertées au niveau régional constituent l'un des moyens les plus efficaces pour y faire face, afin qu'en mutualisant les efforts, la Région de l'Océan Indien soit une Région ayant une résilience renforcée face aux cyclones, et qu'ainsi, les efforts de développement de chaque Etat membre soient consolidés aux bénéfices de toute la Région. D'où la nécessité de l'amélioration des systèmes d'alerte précoce au niveau régional, malgré les initiatives déjà développées dans ce sens, dans un contexte climatique évolutif. Par ailleurs, la coopération au niveau régional et sous régional fait partie des facteurs de réussite de la Stratégie Nationale de Gestion des Risques et de Catastrophes (SNGRC) de Madagascar
OBJECTIVES	<ul style="list-style-type: none"> - La résilience de la Région de l'Océan Indien face aux cyclones est renforcée ; - Les risques de catastrophes à la suite des cyclones sont réduits.
ACTIVITIES	<ul style="list-style-type: none"> - Adopter des dispositifs communs (politique, stratégie opérationnelle, technologies, etc.) d'alerte précoce et intégrant les spécificités selon le genre, au sein de la Région ; - Acquérir les équipements modernes pour améliorer les communications entre les États concernés au sein de l'Océan Indien; - Systématiser les concertations régulières entre les techniciens, aux fins de renforcements de capacités réciproques et de partages des expériences, pour l'amélioration régulière des systèmes ; - Améliorer le Plan de contingence National prenant compte des risques climatiques et surtout des projections climatiques pour le futur ; - Former la population sur les réflexes à avoir lors des cyclones à travers des exercices de simulation: renforcement de la population à faire face aux cyclones et les risques y afférents : vents violents, inondations ; - Mettre en place des infrastructures d'accueil ou des infrastructures anticycloniques : bâtiments publics.
TARGET ID (TARGET AREAS, BENEFICIARIES)	Localisation : Les Régions côtières : Analanjirofo, Androy, Anosy, Atsimo-Andrefana, Atsimo-Atsinanana, Atsinanana, Boeny, DIANA, Melaky, Menabe, SAVA, Sofia, VatovavyFitovinany

IMPLEMENTERS	BNGRC, DGM, COI, AFD, CPGU, ONE autres PTF prêts à se positionner.
INDICATORS	<ul style="list-style-type: none"> - Nombre de régions côtières à Madagascar ayant accès à des services améliorés d'information sur le climat ; - Diminution du nombre des victimes, identifiées selon le genre ; - Nombre de plans et processus décentralisés (régionaux, communaux) développés et renforcés pour identifier, hiérarchiser et intégrer les stratégies et mesures d'adaptation ; - Nombre de personnes formées par Région (de Madagascar) pour opérationnaliser le SAP/Océan Indien (identifier, hiérarchiser, mettre en œuvre, surveiller et évaluer les stratégies et mesures d'adaptation et de réponses d'urgence) et considérant les spécificités selon le genre ; - Nombre de communes et Régions disposant du système d'alerte précoce, de comités de gestion des catastrophes, de plan de préparation aux urgences ; - Nombres d'installations para-cycloniques ou limitant les risques causés par les aléas climatiques : barrages, bâtiments.
TIMELINE	5 ans
COSTS	Le programme doit s'inclure dans une initiative régionale de grande ampleur
FUNDING SOURCES	FEM, GCF, UE et Interreg, AFD.

PROJECT TITLE	DÉVELOPPEMENT DE RIZIÈRES RÉSILIENTES ET MOINS ÉMETTRICES DE MÉTHANE
SECTOR	Agriculture
CONTEXT	<p>45% seulement des périmètres cultivables durant ces 50 dernières années sont opérationnels, alors que Madagascar ambitionne d'atteindre l'autosuffisance alimentaire et de mettre fin à l'importation de riz, aliment de base de la population malagasy, et qui constitue la principale culture vivrière à Madagascar. Le riz occupe ainsi une place importante dans le secteur agricole : en effet, le riz fait l'objet d'exploitations par environ 2 000 000 de ménages répartis dans 10 zones agroécologiques, selon la Stratégie Nationale de Développement Rizicole (SNDR, 2016-2020). Or, à l'heure actuelle, Madagascar n'est pas encore parvenu à l'autosuffisance dans ce domaine, et encore moins à passer à l'échelle de l'agro-business pour la filière riz. Plusieurs raisons en sont les causes, dont le manque de connaissance au niveau des paysans et la persistance des pratiques non modernes. À cette situation s'ajoute le phénomène du changement climatique auquel il importe désormais de s'adapter tout en adoptant des pratiques moins émettrices de gaz à effet de serre, dont le méthane, propre à la riziculture. De l'autre côté, d'autres cultures peuvent être mieux développées au sein du pays, notamment les cultures de rente comme le girofle et le café, contribuant à l'économie et à la réduction de la pauvreté. À l'heure actuelle, le projet d'extension de 100 000 ha les périmètres cultivables est une opportunité pour promouvoir une agriculture résiliente, adaptée au changement climatique.</p>

OBJECTIVES	En ligne avec la Vision AEP, l'objectif est le développement du secteur Agriculture- Elevage-Pêche d'ici 2025, afin qu'il constitue un pilier d'une économie verte à vocation agricole, résilient aux effets du changement climatique.
ACTIVITIES	<ul style="list-style-type: none"> - Se doter des infrastructures rizicoles adaptées au changement climatique suivant les normes nationales sur les infrastructures hydroagricoles contre les crues et inondations, et tenant compte des spécificités selon le genre ; - Augmenter les superficies des rizières et des périmètres hydro-agricoles permettant la pratique du Système de Riziculture Intensive (SRI)/ Système de Riziculture Améliorée (SRA) ; - Vulgariser la pratique des techniques d'Agriculture de Conservation et l'agriculture intelligente face au climat -AIC (Climate Smart Agriculture) pour l'augmentation des productions rizicoles ; - Développer et mettre en œuvre des programmes de formation pour la professionnalisation des jeunes ruraux sur le changement climatique, l'agroécologie et l'AIC ; - Vulgariser à l'échelle régionale et locale les résultats de recherche sur l'agriculture adaptée au changement climatique, y compris la riziculture, et les faire adopter sur le terrain par les agriculteurs (création de nouvelles variétés, pratiques autochtones, techniques adaptées comme le drainage intermittent, etc.) ; - Mettre en place un ensemble de mécanismes institutionnels et opérationnels facilitant l'implication du secteur privé dans l'agrobusiness (textes, cadres incitatifs, centres d'agrégation et de services agricoles, etc.).
TARGET ID (TARGET AREAS, BENEFICIARIES) IMPLEMENTERS	<p>Localisation : Alaotra-Mangoro, Amoron'i Mania, SOFIA, Betsiboka, Bongolava, Haute Matsiatra, Ihorombe, Atsimo Andrefana (Bas Mangoky), Itasy et Vakinankaratra</p> <p>PRIMATURE (PADR), Ministère en charge de l'agriculture, Ministère en charge de l'aménagement du territoire, Ministère en charge de l'enseignement supérieur et de la recherche, Ministère en charge de l'enseignement technique et de la formation professionnelle, Ministère en charge de l'industrie, du commerce et de l'artisanat, Banque Mondiale, PNUD, BAD, JICA, ONE.</p>
INDICATORS	<ul style="list-style-type: none"> - Tonnes de dioxyde de carbone équivalent réduits ou évités (y compris l'augmentation des stocks) sur 10 ans ; - Surfaces additionnelles de rizières bénéficiant d'une meilleure résilience au changement climatique ; - Nombre de producteurs bénéficiant de l'adoption de technologies contribuant à l'adaptation au changement climatique ; - Nombre d'opérateurs privés s'impliquant dans l'agro-business ; - Rendement moyen des principales cultures.
TIMELINE	5 ans
COSTS	USD 20 millions USD (Estimation effectuée sur la base des projets GCF déjà financés sur le sujet)
FUNDING SOURCES	Union Européenne, FIDA, Banque Mondiale, BAD, JICA, PNUD.

PROJECT TITLE	OPTIMISATION DE LA RESILIENCE DES NOUVELLES VILLES ET DE L'HABITAT DURABLE ET INNOVANT EN VUE DE LA MODERNISATION DE MADAGASCAR
SECTOR	Zones urbaines
CONTEXT	Actuellement, les Etats sont confrontés à des défis sans précédent, conséquences de la croissance démographique urbaine rapide et du changement climatique. On estime qu'en 2050, 70% de la population mondiale vivra en ville et sans l'investissement nécessaire pour faire face à ces défis, nos villes vont dépenser des millions de dollars en relèvement et reconstruction. Toutes les villes sont confrontées à des crises dont les conflits, les catastrophes naturelles, les déplacements forcés et les effets du changement climatique, ainsi qu'à leurs effets d'entraînements. A cet effet, les villes qui n'y sont pas préparées sont forcément plus vulnérables en y étant déjà soumises, pouvant ainsi accumuler ou accentuer d'autres problèmes.
OBJECTIVES	En 2050, les deux tiers de l'humanité vivront en villes. Le développement durable ne peut être réalisé sans une transformation significative de la manière dont nous construisons et planifions nos espaces urbains. La création de nouvelles villes durables et résilientes est ainsi une priorité pour l'Etat Malagasy afin d'assurer un ancrage territorial du développement. Ceci est d'une haute importance pour permettre aux villes d'affronter ces défis par le renforcement de leur résilience. Cette dernière est définie comme la capacité mesurable de tout système urbain et de ses habitants, à maintenir la continuité à travers toutes les crises, tout en s'adaptant positivement et en se transformant vers la durabilité. Une ville résiliente doit évaluer, planifier et agir pour se préparer et réagir à tout type d'aléas. Ainsi, elle est mieux à même de protéger et d'améliorer la vie de la population, de sécuriser ses biens, de promouvoir un environnement favorable aux investissements et de stimuler des changements positifs
ACTIVITIES	<ul style="list-style-type: none"> - Élaboration, révision et application des normes de construction des infrastructures structurantes des nouvelles villes (gestion des espaces en mettant en relief le verdissement des sites de nouvelles villes, gestion de l'eau, gestion des énergies renouvelables) ; - Réalisation des constructions nouvelles en matière d'infrastructures en tenant compte de l'adaptation au changement climatique avec un système de mise en application et de suivi adapté (choix des matériaux et de procédés de construction à empreinte écologique acceptable) ; - Viabilisation du site ; - Mise en place des équipements publics, socio-économiques, administratifs, et socio-culturels
TARGET ID (TARGET AREAS, BENEFICIARIES)	Localisation : Vatofotsy Antsirabe, Ambositra, Fianarantsoa, Tulear, Manakara, Majunga, Amparemahitsy, Nosy Be, Antalaha, Diego, SainteMarie, Moramanga, Brickaville, Tamatave, Foulpointe, Vavatenina, Fenerive Est, Maroantsetra
IMPLEMENTERS	Ministère en charge des habitats, Ministère en charge de l'aménagement du territoire, Ministère en charge du tourisme, Union Européenne, AFD.
INDICATORS	<ul style="list-style-type: none"> - Des villes nouvelles résilientes et durables créées ;

	<ul style="list-style-type: none">- Décongestionnement des anciennes villes ;- Délocalisation et extension des fonctions urbaines.
TIMELINE	15 ans
COSTS	n/a
FUNDING SOURCES	n/a

NEPAL

SECTOR	PROJECT TITLE	OBJECTIVES	ACTIVITIES	TIMELINE	COSTS
Agriculture and food security	Programme on Sustainable Agriculture, Food and Nutrition Security, and Climate Resilient Health and Hygiene	Promotion of nutrition security for healthier livelihoods. Increase crop production through identification and adoption of good climate resilient and sustainable agricultural practices. Develop energy efficient agriculture technology.	n/a	2025, 2030, 2050	USD 2 billion
Agriculture and food security	Commercial Animal Husbandry for Climate Resilient Rural Livelihoods (753 Model Demonstration Projects)	Explore, assess, and introduce climate-resilient land species crossed with local breeds. Diversify rural livelihoods and increase incomes through commercial and integrated livestock programmes. Promote circular economy practices for resilient rural livelihoods.	n/a	2025, 2030	USD 2 billion
Agriculture and food security	Development of Insurance, and Community and Peasant Friendly Climate Induced Risk Sharing Model and Expansion in both Agriculture and Livestock	Build the capacity of local peasants and local government to cope with climate risks. Create an enabling environment that promotes private sector engagement in the provision of insurance products in the agricultural sector that help farmers and communities cope with climate risks.	n/a	2025, 2030	USD 500 million
Agriculture and food security	Genetic Resource Conservation Programme for Climate Resilient Agriculture in Nepal	Strengthen the National Gene Bank to conserve local land species. Strengthen biotechnology laboratories to develop climate resilient crop varieties and animal breeds.	n/a	2030	USD 1.5 billion

Agriculture and food security	Enhancing Agriculture Productivity through Building Climate Resilient Water Management Systems	Improve climate resilient irrigation facilities for agricultural production. Increase the coverage of irrigated areas through water use efficient technology. Improve irrigation facilities to increase productivity.	n/a	2050	USD 1.5 billion
Agriculture and food security	Climate Smart Transformative Collective Agriculture Promotion in the Hills and Mountains	Explore, assess, and promote climate-smart agriculture technology. Increase crop production and benefits to farmers through collective farming.	n/a	2030, 2050	USD 2 billion
Agriculture and food security	Integrated Soil and Nutrient Management for Resilient Agriculture	Increase productivity by improving soil fertility through adaptive agriculture interventions. Improve the soil nutrients that support the growth of all forests and agricultural plants including carbon sinks and stress tolerant varieties.	n/a	2025, 2030	USD 1.2 billion
Agriculture and food security	Strengthening Climate Services and Agriculture Information System	Establish and operationalize early warning systems and localized weather stations for precise climate services. Provide a package of climate services (such as weather information, soil moisture conditions, and incidence of extreme events) directly to the farming communities. Provide timely and accurate information regarding agriculture inputs and output prices.	n/a	2030	USD 1 billion
Agriculture and food security	National Capacity Building of Agriculture Institutions and Professionals (including Livestock) on Climate Change Adaptation Research, Planning and Implementation	Enhance the capacity of agriculture technicians to understand climate and climate change associated risks vulnerabilities. Strengthen the adaptive capacities of agriculture-based local institutions to address climate risks.	n/a	2025, 2030	USD 500 million

Forests, Biodiversity, and Watershed Conservation	Forests Fire Preparedness, Prevention and Control (In Multi-Stakeholder Partnerships)	Prevent and manage forest fires through policy implementation.	n/a	2025, 2030	USD 1 billion
Forests, Biodiversity, and Watershed Conservation	Karnali Watershed Management Programme for Reducing Climate Risks and Vulnerabilities and Promoting Irrigation Facilities in the Downstream	Build resilience to climate vulnerabilities and risks to the Karnali watershed community and people. Secure river - and forest - based watershed resources. Enhance adaptive capacity of indigenous people and local communities and engage them in participatory watershed conservation. Promote up stream-downstream linkages to reduce downstream climate risk.	n/a	2025, 2030	USD 500 million
Forests, Biodiversity, and Watershed Conservation	Integrated Sub-Watershed Management for Climate Resilience and Increased Water Availability and Agricultural Productivity	Promote watershed management for conservation of soil fertility and enhanced productivity. Support local livelihoods through watershed management.	n/a	2030, 2050	USD 1 billion
Forests, Biodiversity, and Watershed Conservation	Improvement of Forest Health and Restoration of Rare, Endangered, Endemic, and Threatened Species for Building Resilient Forest	Control invasive species of forest, wetland, and rangelands. Promote and restore Rare, Endangered, Endemic, and Threatened (REET) species.	n/a	2030, 2050	USD 1 billion
Forests, Biodiversity, and Watershed Conservation	Restoration of Habitats and Strengthening Ecological Connectivity for Wildlife and Biodiversity	Safeguard wild fauna from climate extreme events. Establish climate resilient safe wildlife passage in selected corridors and connectivity between protected areas. Manage and restore ecological connectivity.	n/a	2025, 2030	USD 200 million

Forests, Biodiversity, and Watershed Conservation	Promotion of Multiple Uses of • Protected Areas and Natural Heritage and Generation of Climate Adaptation Services by Maximizing the Utility of Protected Areas	Assess the commercial feasibility of the protected areas. Increase the adaptation services from the Protected area resources. Develop a partnership between PA and local communities for generating adaptation services.	n/a	2030, 2050	USD 500 million
Forests, Biodiversity, and Watershed Conservation	Control of Climate Induced Disasters and Extension of the Network of Protected Areas for Resilient Ecosystems	Strengthen landscape/arc level connectivity and increase buffer zones to build capacity to respond to climate-induced disasters. Explore, assess, and implement physical and biological means of disaster management in Protected Areas.	n/a	2030, 2050	USD 1 billion
Forests, Biodiversity, and Watershed Conservation	Development and Strengthening of Ponds/Lakes in Community forests for resilient biodiversity (One Community Forest- One Wetland)	Maintain water availability both above and under the ground. Enhance climate resilient forest growth.	n/a	2015, 2030	USD 500 million
Forests, Biodiversity, and Watershed Conservation	Wetlands Development, Conservation and Management at the Foothills of Chure	Maintain healthy wetlands and conserve biodiversity by building small earthen dams, connecting water bodies, and restoring forests. Sustain ground recharge in the Bhawar and dune areas through retaining streams, gorges, estuaries, waterholes, ponds, and lakes.	n/a	2030, 2050	USD 1 billion

Forests, Biodiversity, and Watershed Conservation	Integrated Green Economy and Green Job Promotion Programme through Sustainable Forest Management and Circular Economy in the Hills and Mountains	Explore, assess, and promote green jobs that support maintaining a healthy ecosystem. Enhance livelihoods of forest dependent communities through diversifying income sources and promoting the circular economy in the forest sector.	n/a	2025, 2030, 2050	USD 1 billion
Forests, Biodiversity, and Watershed Conservation	Upland Conservation and Climate Resilient Livelihoods Programme in High Mountains	Conserve, promote, and increase the use of highland high value forest products for climate resilient livelihoods. Conserve pastures and meadows for high value forest products through community led control of grazing and animal husbandry.	n/a	2025, 2030	USD 1,000 million
Water resources and energy	National Capacity Building on Policy Reform, Bridging Climate Information Gaps. Promoting Climate-Informed Decision Making, and Developing Climate-Smart Design and Guidelines for Water Resources Infrastructure	Build the resilience of vulnerable communities in rural and urban sectors. Develop climate smart designs and guidelines for water resources infrastructure. Formulate meteorological acts, regulations and other policy protocols to address climate risks. Capacitate the National Meteorological and Hydrological Services to provide downscaled weather, climate and hydrological prediction and services. Develop a national framework for climate information services to enhance access to climate information. Promote multiple water use systems. Establish water recharge, retention, and re-use technologies through the spring-shed mappings.	n/a	2030	USD 50 million
Water resources and energy	Promoting Energy Mix system for Industrial Sustainability and Climate Resilient Livelihoods	Identify, assess, and develop diverse energy sources for energy resilience. Increase energy mix in the national energy system.	n/a	2030	USD 2 billion

Water resources and energy	Establishing GLOF Risk Reduction and Early Warning Systems (EWS) in Glaciated River Basins (Gandaki, Koshi, Karnali)	Prevent and control, and minimize damage to infrastructure due to climate-change induced GLOFs. Establish infrastructure for glacier lake water lowering. Establish and operate EWS with cooperation with emergency responses. Build capacity of the federal, provincial, and local level public emergency operation centers. Quantify fresh water storage and the impact of climate change on glaciers and snow coverage. Reduce the risk of GLOFs.	n/a	2030	USD 1 billion
Water resources and energy	Promoting Water Pumping Technology in Water Scarce Areas (To Address Water Stress for Food Security in Hilly Areas)	Enhance climate resilience capacity of vulnerable rural people in water scarce areas. Promote solar water pumps to improve access to drinking water and irrigation water. Promote the use of hydroelectricity for water pumping to access to drinking water and irrigation water. Reduce the untapped potential of hydroelectricity that is used for water pumping.	n/a	2030	USD 1 billion
Water resources and energy	Promoting Climate Resilient Renewable Energy in Rural Vulnerable Settlements and Institutions	Promote renewable energy and energy efficiency. Equip and enable rural institutions to meet basic needs (health and education) during extreme weather events. Promote non conventional energy (biogas, solar, wind, and hydropower) and fuel-efficient technologies to reduce firewood demand.	n/a	2050	USD 500 million
Water resources and energy	Constructing Climate Resilient Check Dams on the Rivers of Nepal to Sustain Life	Build dams for rainwater harvesting, gully erosion control, and protection of river valley settlements and assets.	n/a	2050	USD 200 million

Water resources and energy	Programme on Sustainability . of Run-of-River Systems and Backing by Reservoir Systems at Feasible Locations Together with Climate Change Awareness Raising and Capacity Building of Hydropower Developers and Stakeholders	Assess climate risk of the hydro projects through mapping of climate hazards. Undertake policy reform for climate proof hydroelectricity management.	n/a	2030, 2050	USD 100 million
Water resources and energy	Efficient Energy and Clean Technology Development and Retrofitting to Build Resilient Systems and Infrastructure	Identify, assess, and develop an inventory of climate-resilient energy efficient technology. Build resilience of energy systems and infrastructure.	n/a	2030	USD 500 million
Rural and Urban settlements	Promoting the Circular Economy for Sustainable Urban Development (Piloting, Integration, Capacity Building, and Implementation)	Plot climate resilient city planning. Build national capacity on adaptive urban development	n/a	2025, 2030	USD 350 million

Rural and Urban settlements	Developing Integrated Settlement and Urbanization Models for Climate Risk Reduction and Supplying Climate Adaptation Services through Nature-based Solutions and Policy Reform	Relocate climate and disaster vulnerable populations in safer and serviced areas. Identify safer locations for resettlement and relocation. Introduce integrated settlement planning concepts for disaster resilient community development.	n/a	2030, 2050	USD 2 billion
Rural and Urban settlements	Updating and Promoting Climate Resilient Building Designs, Codes, Practices and Construction Technologies and National Capacity Building to further Implementation	Prepare climate risk informed urban and rural development plans. Promote climate resilient building practices. Design and plot climate and disaster resilient construction technology. Explore and identify environmentally friendly building materials and construction technologies. Disseminate information about and raise awareness of climate resilient building practices.	n/a	2025, 2030	USD 500 million
Industry, Transport, and Physical Infrastructure	Developing and Strengthening Capacity, Awareness. Resources (Databases). Institutions. Technologies and Policies for Building Climate Resilient and Environment Friendly Industries, Transport Systems and Physical Infrastructure	Develop, update, and provide accessible and early information to all people living in climate vulnerable areas. Build awareness and develop capacities and resources to main and operationalize the climate resilient industry, transport, and infrastructure. Conduct periodic monitoring and review activities as necessitated. Develop and amend climate resilient infrastructure design, climate friendly guidelines (EIA), land use planning, construction and building codes, green certificates, and provision of insurance and a subsidy mechanism.	n/a	2030, 2050	USD 200 million

Industry, Transport, and Physical Infrastructure	Diversifying the Energy Supply for Industrial Districts	Promote diverse energy sources for energy security and resilience. Develop and implement energy mix approach in special economic zones and industrial districts.	n/a	2030, 2050	USD 1 billion
Industry, Transport, and Physical Infrastructure	Developing and Promoting Clean Energy-based Transportation Systems through National Capacity Building and Policy Reform	Reform policies to promote electric transportation modalities,. Establish infrastructure that can promote electric mobility	n/a	2025, 2030	USD 1 billion
Industry, Transport, and Physical Infrastructure	Developing Climate Resilient • Infrastructure Systems for Climate Risks, Hazards and Pandemics	Develop guidelines on building climate resilient infrastructure systems. Develop a pool of climate resilient technologies that help build robust infrastructures.	n/a	2030, 2050	USD 350 million
Industry, Transport, and Physical Infrastructure	Upgrading, Maintaining, and Relocating Vulnerable Industries, Physical Infrastructure, and Transport • Sector to Increase Resilience to Climate Risks	Maintain and relocate industry, transport, physical infrastructure to address climate vulnerabilities following the standards and assessment reports. Strengthen, promote, construct climate smart infrastructure and industries.	n/a	2050	USD 1 billion
Tourism, Natural and Cultural Heritage	Climate Resilient Tourism for Ecological Sustainability and Economic Prosperity	Diversify and promote tourism destinations and products for sustainable tourism. Promote agro and eco tourism value chains that consider the polluter pay principles and climate resilient practices. Facilitate private and foreign direct investments to improve the climate resilience of the tourism infrastructure.	n/a	2030	USD 50 million
Tourism, Natural and Cultural Heritage	Climate Risk and Tourism Information System	Develop and install hi-tech digital forecast information systems. Provide accurate, timely, amd geo-specific meterological information. Develop disaster	n/a	2030	USD 20 million

	for Resilient Safe and Sustainable Tourism	preparedness plans for the high altitude area destinations by 2030.			
Tourism, Natural and Cultural Heritage	Establishment and Operation of Emergency Relief and Rescue Services in Adventure Tourism	Develop emergency rescue centers at appropriate locations. Promote insurance in the tourism sector covering climate risks.	n/a	2030	USD 500 million
Tourism, Natural and Cultural Heritage	Regulatory Framework Development, Awareness Raising and Capacity Building on Climate Proofing, Protection, Retrofitting and Use of Natural and Cultural Heritage	Develop technology for retrofitting and rebuilding the cultural heritage. Build national capacity on ensuring compliance with a regulatory framework.	n/a	2030, 2050	USD 500 million
Tourism, Natural and Cultural Heritage	Develop Climate Resilient Infrastructure and Explore and Enhance Knowledge and Capacities for Resilient Mountain Tourism	Identify, conserve, and restore cultural, historical, and archeological sites that are at risk of damage due to climate change. Promote archeo- and heritage tourism. Develop climate resilient infrastructure at site specific tourist destinations. Preserve indigenous and traditional knowledge.	n/a	2025, 2030	USD 60 million
Tourism, Natural and Cultural Heritage	Community-Based Adaptation through Ecor and Cultural Tourism	Upgrade existing and build 500 new climate resilient homestays. Increase gender equality and social inclusion (GESI) inclusive tourism employment at the local level and develop women leadership in the sector. Capacitate homestays to serve climate, gender and indigenous knowledge based tourism products.	n/a	2030	USD 100 million

Tourism, Natural and Cultural Heritage	Promotion of 'One Local Level • One Tourism Destination' and Planning for Functional Climate Resilient Tourism Destinations (Piloting, Demonstration and Replication. One Project in each Province)	Promote local tourism for livelihoods promotion. Make the tourism destinations climate resilient.	n/a	2030, 2050	USD 100 million
Tourism, Natural and Cultural Heritage	Diversifying and Promoting Alternative Destinations and Products for Climate Resilient Tourism Business	Develop climate smart and diversified tourism products. Promote climate smart and eco-friendly tourist circuits, routes, and cities. Promote climate smart and environmentally friendly tourism destinations.	n/a	2030, 2050	USD 100 million
Health, Drinking Water and Sanitation	Capacity Building of Health and Hygiene Service Providers (Institution and Personnel) on Climate Resilient Health and Hygiene Service Planning and Implementation	Empower and inform health care providers to respond to climate risk and vulnerabilities. Ensure sustainable and safe management of water, sanitation, and health care waste services. Ensure use of sustainable energy (renewable) in health care facilities and services. Develop climate resilient infrastructure to enable efficient functioning of health care facilities during extreme weather events.	n/a	2025, 2030	USD 50 million
Health, Drinking Water and Sanitation	Climate Change Resilience Development through Capacity Building, Innovation, Improvement and Construction of WASH Services and Facilities	Capacitate stakeholders on climate resilient WASH interventions. Explore technologies to implement climate resilient water supply systems and sanitation services. Design and implement climate proofing WASH services. Promote adaptive water, sanitation, and hygiene practices	n/a	2030, 2050	USD 2 billion

Health, Drinking Water and Sanitation	Strengthening of Climate Sensitive Disease Surveillance System with Emergency Preparedness and Response	Operationalize a disease surveillance system. Integrate climate change and health issues in the academic curriculum. Stngthen and equip public health laboratories to better assess climate sensitive diseases. Enhance capacity of health services and responders to act swiftly in the case of climate emergencies. Strengthen the rapid and emergency response system.	n/a	2030	USD 500 million
Health, Drinking Water and Sanitation	Health Promoting Cities: Health, Environment and Life (HEAL)	Improve health and equality of life of all urban and rural dwellers. Ensure adequate open spaces and parks for healthy behaviours. Improve environmental health services (water supply, sanitation, solid waste management, food safety and air pollution monitoring and control). Increase urban forests coverage and conserve ecosystems that are stable and sustainable.	n/a	2030, 2050	USD 500 million
Health, Drinking Water and Sanitation	Promotion and Conservation of Water Sources along with Watershed Management for Sustainable Water Supply Service	Support local governments in the conservation of water resources (surface and ground). Promote and support watershed management for sustainable water supply service delivery. Promote and support water recharge activities.	n/a	2030	USD 1 billion
Health, Drinking Water and Sanitation	Policy Reform, Strategy Development and National Level Awareness Raising on Climate Resilient Health and WASH Programme, Planning, Operationalization and Sustainability	Policy reform and/or formulation to make climate-sensitive WASH, Health plans programmes. Support local government on integration and implementation of climate change adaptation in local level WASH and health plans and programmes. Develop national guidelines to help local governments to integrate multiple use of water, water quality improvement system, insurance and hybrid technologies. Operationalize National Health and Wash Management Information System Integrating with	n/a	2030	USD 200 million

		hydro-meteorological, land-use data for climate sensitive planning, implementation and monitoring.			
Health, Drinking Water and Sanitation	Research, Innovation and Development of Climate Resilient Measures/ Technologies for Water Supply, Sanitation and Health systems	Explore climate-resilient technologies for water-sanitation that are suitable for the local context. Explore resources and partnerships for scaling up identified climate resilient WASH technologies and businesses through engagement to private sector. Build capacities of service providers, WASH practitioners, and local governments to adopt innovative technologies. Develop early warning systems for water source (surface and ground) yield, demand, and quality.	n/a	2030	USD 500 million
Disaster Risk Reduction and Management	Building Climate Resilience by Developing and Harmonizing DRRM and CCA at Federal to Local Levels through Policy Reforms (Integration of DRR in Local Adaptation Plans)	Formulate guidelines on disaster risk management and climate change adaptation at a local level. Harmonize DRR and CCA plans, policies and guidelines at a federal, provincial, and local level and mainstream into sectoral periodic and annual plans and budgets. Develop and implement GESI responsive local disaster and climate resilient plans (LDCRP). Increase participation and involvement of vulnerable groups in climate and disaster risk governance.	n/a	2030, 2050	USD 1 billion
Disaster Risk Reduction and Management	Strengthening Adaptive Social Protection/ Shock Responsive Practices Initiatives for Transferring Climate Risk	Develop and operationalize adaptive social protection/shock responsive social protection frameworks and mechanisms. Provide adaptive social protection through insurance companies.	n/a	2050	USD 2 billion

Disaster Risk Reduction and Management	Maintenance, Upgradation and Strengthening Early Warning Systems and Multi-Hazard Monitoring to Facilitate Climate Adaptive Function of Key Economic and Service Sectors	Establish timely, effective, people-centered GESI sensitive early warning systems that reach hazard affected communities of Nepal.	n/a	2030, 2050	USD 1.5 billion
Disaster Risk Reduction and Management	Development of Federal and Provincial Strategy and Action Plans on Control of Climate Induced (Primarily Water Borne) Disasters in the Forest Areas of Nepal and Phase-Wise Implementation Under the Leadership of Forest Authorities	Map climate disasters in forest areas. Implement DRRM schemes phase wise to control disasters. Build resilience of forest sector to climate induced disasters.	n/a	2025, 2030, 2050	USD 2.5 billion
Disaster Risk Reduction and Management	Develop Regulatory Framework for Domestic and Industrial Fire Control and Mitigation, and Implementation Strategy and Build National Capacities with Supply of Technology and Equipment	Reduce and control the magnitude and frequency of domestic fires. Build capacity of relevant authorities and stakeholders on the use of domestic fire control tools and techniques.	n/a	2030	USD 1 billion

Disaster Risk Reduction and Management	Promote Culture of Safety and Build Climate Resilience through Climate Risk Sensitive Land Use Plan (RSLUP) Guideline and Standards	Formulate climate risks and climate sensitive land use plan. Develop and implement risk sensitive land use (RSLUP) guidelines and standards at federal, provincial, and local level covering all the ecological zones.	n/a	2050	USD 50 million
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PARAGUAY

ADAPTATION PRIORITY PROJECTS

PROJECT TITLE	PLAN DE ACCIÓN PARA EL SECTOR PRODUCCIÓN AGROPECUARIA Y SEGURIDAD ALIMENTARIA
SECTOR	Producción agropecuaria y seguridad alimentaria
OBJECTIVE	Promover políticas de estabilidad y sostenibilidad de los ingresos de los productores, incluyendo la gestión integral del riesgo climático. Disminuir la migración y el desarraigo forzado como consecuencia de fenómenos climáticos, de comunidades vulnerables o grupos humanos en situación de riesgo, asegurando los alimentos
ACTIVITIES	<ul style="list-style-type: none">• Crear y fortalecer instituciones regionales de investigación (sector público y privado) para investigar sobre nuevas tecnologías y acciones apropiadas para adaptarse a las nuevas condiciones, técnicas agropecuarias y forestales adaptadas, particularmente para pequeños agricultores y ganaderos.• Desarrollar modelos financieros apropiados y capacitar a los productores para acceder a líneas de créditos y financiamiento a mediano y largo plazo de sistemas productivos más amigables/sostenibles.• Fortalecer el rol del Sistema Nacional de Emergencias y la UGR del MAG como un servicio público para el mejor control de exposición y amenazas.• Fortalecer el sistema de información meteorológica a nivel distrital con el objetivo de generar y proveer información respecto al cambio climático que permita que las personas tomen decisiones fundadas.• Contar con la instrumentación de seguros y fondos para Cobertura de Riesgos Climáticos, enfocados a pequeños productores.• Generar mapas con la información de uso de suelo, capacidad, aptitud e hidrometeorológicos por zonas.• Fomentar prácticas pecuarias sostenibles como rotación de potreros, prácticas silvopastoriles, pasturas e ensilaje, reservorios de agua (región Occidental) como medidas de adaptación al cambio climático.• Establecer el caudal hídrico y crear reservorios para los cultivos de arroz (zona Sur del país).• Fomentar las buenas prácticas agrícolas en pequeños y medianos productores (sistemas agroforestales, las barreras rompe vientos, la protección de los bosques de causas hídricos, diversificación de rubros, manejo de suelo, rotación de cultivos etc.• Sistematizar y disponibilizar información sobre buenas prácticas agrícolas (sistemas agroforestales, las barreras rompe vientos, la protección de los bosques de causas hídricos, diversificación de rubros, uso y manejo de suelo, rotación de cultivos) en pequeños y medianos productores.• Contar con una mayor presencia de los órganos gubernamentales capacitados y fortalecidos a través de la creación de Secretarías locales del Ambiente, Emergencia y Gestión de Riesgos, Agricultura, etc. Para coordinar las acciones.• Impulsar la figura de la asociación de productores como mecanismo de gestión para aumentar la capacidad de adaptación al Cambio Climático.

IMPLEMENTERS	Entidad responsable: Ministerio de Agricultura y Ganadería (MAG). En coordinación con: SEAM, INFONA, SAS, MSPBS, SEN, IPTA, academia e instituciones de investigación, cooperativas, gobernaciones y municipios, INDI, UGP, FECOPROD, ARP
TIMELINE	n/a
COSTS & SOURCE OF FINANCE	Implementación de convenios y articulación de instituciones públicas privadas.

PROJECT TITLE	PLAN DE ACCIÓN PARA EL SECTOR RECURSOS HÍDRICOS – GESTIÓN Y REDUCCIÓN DE RIESGOS DE DESASTRE
SECTOR	Recursos hídricos – gestión y reducción de riesgos de desastre
OBJECTIVE	Propiciar la nueva cultura de “cuidado del agua” para asegurar el acceso de agua para consumo humano y producción. Garantizar el acceso, calidad y manejo sostenible de los recursos hídricos.
ACTIVITIES	<ul style="list-style-type: none"> • Investigar sobre impactos de la variabilidad climática en los sistemas hídricos y sus interdependencias a nivel regional. • Mayor control de las normativas de recursos hídricos en la protección de los cauces hídricos y agua subterránea. • Sistematizar las experiencias exitosas en el manejo y cosecha de agua según los diferentes usos y la cultura - región Occidental. • Valorar los recursos hídricos no solo como medio de vida, sino también como un medio de sostenibilidad económica con la producción ictícola. • Garantizar el acceso a la educación pública a nivel nacional que contemple la capacitación de la comunidad en gestión de riesgos y adaptación al Cambio Climático. • Concienciar dentro de la malla curricular la educación inclusiva, no discriminativa en respuesta a los fenómenos de desplazamientos poblacionales. • Establecer una Red de Monitoreo agro-hidrometeorológico coordinada, compartida de acceso libre con un SAT que funcione a nivel nacional, regional y local. • Fortalecer el rol del Sistema Nacional de Emergencias como un servicio público cuya misión es coordinar los recursos públicos para el mejor control de las situaciones de exposición a amenazas. • Mejorar las capacidades locales para promover experiencias exitosas en el manejo y cosecha de agua. (región Occidental)

	<ul style="list-style-type: none"> • Mejorar el cumplimiento de las ordenanzas y/o crear las necesarias en cuanto a los planes de ordenamiento territorial (zonas de inundación, bañados y zona ribereñas del país, departamento Central, Ñeembucú, Itapúa, Concepción). • Establecer un mecanismo público-privado para optimizar los recursos hídricos (agua de consumo — producción) para establecer tarifa variada para promover el uso racional del agua. • Contar con mayor presencia del Estado a nivel local para trabajar en forma coordinada con otros sectores gubernamentales y las organizaciones de base campesinas e indígenas. • Insertar la utilización de criterios técnicos para la transversalización de la variabilidad climática en armonía con los planes locales de adaptación y gestión de riesgos. • Desarrollar la infraestructura de agua potable, red de alcantarillado y sistema de tratamiento de las aguas domésticas, pluvial e industrial.
IMPLEMENTERS	<p>Entidad responsable: Secretaría del Ambiente (SEAM), Ministerio de Obras Públicas y Comunicaciones (MOPC), Dirección Nacional de Aeronáutica Civil.</p> <p>En coordinación con: Secretaría del Ambiente (SEAM), Secretaría de Emergencia Nacional (SEN), INFONA, Ministerio de Educación y Cultura (MEC), ANPP, academia e instituciones de investigación, cooperativas, gobernaciones y municipios, Yacyretá, Itaipú.</p>
TIMELINE	n/a
COSTS & SOURCE OF FINANCE	Implementación de convenios y articulación de instituciones públicas privadas.

PROJECT TITLE	PLAN DE ACCIÓN PARA EL SECTOR ENERGÍA, TRANSPORTE E INFRAESTRUCTURA
SECTOR	Infraestructura, transporte y energía
OBJECTIVE	Viviendas seguras y adaptadas a las condiciones climáticas y eventos extremos. Obras públicas (camino, puentes) y otros edificios en general seguros ante eventos extremos. Asegurar la navegabilidad de los principales ríos de Paraguay
ACTIVITIES	<ul style="list-style-type: none"> • Promover investigaciones en la resistencia de materiales por mayor exposición de la temperatura y/o a la humedad, etc. • Considerar los conocimientos ancestrales y existentes en la construcción de viviendas y otras edificaciones. • Realizar un análisis sectorial de la demanda energética en base a ello proponer las mejoras de sistema de transmisión y distribución permitiendo el acceso a todos los niveles sociales. • Realizar estudios de factibilidad económico- ambiental para promover el uso de energías limpias en las industrias.

	<ul style="list-style-type: none"> • Elaborar normas y especificaciones técnicas que considere las variaciones climáticas en las obras civiles, construcción de viviendas e infraestructura pública. • Incorporar el concepto de cambio climático a la malla curricular universitaria de las carreras de ingeniería y arquitectura. • Crear un centro de información regional para generar información, analizar e identificar puntos críticos en relación al clima y para la navegación. • Construir viviendas seguras y adaptadas a las condiciones climáticas (materiales resilientes y adecuados al clima local). • Contar con vías de comunicación (fluvial, terrestre, etc.) de todo tiempo y construcción de obras públicas y edificios seguros ante eventos extremos. • Promover sistemas de prevención a los eventos climáticos como los sistemas de monitoreo climático y las redes de Sistema de Alerta Temprana (SAT). Coordinar una Red de alerta temprana de hidrometeorología. • Articular trabajos interinstitucionalmente (para navegación), elaboración de Planes de Ordenamiento Territorial vinculado a la inversión de infraestructura. • Ampliar la cobertura, implementar los medidores inteligentes de consumo de energía eléctrica generada en el Paraguay. • Fortalecer la transmisión y distribución de energías renovables para asegurar el transporte público eficiente, transporte multimodal. • Promover acciones de reforestación con fines energéticos y maderables en base al Decreto N° 4056.
IMPLEMENTERS	<p>Entidad responsable: Ministerio de Obras Públicas y Comunicaciones (MOPC), SENAVIT, DINAC, INFONA</p> <p>En coordinación con: Secretaría del Ambiente (SEAM), Secretaría de Emergencia Nacional (SEN), Ministerio de Educación y Cultura (MEC), DNNP, Universidad Nacional de Asunción (UNA), Yacyretá, Itaipú, cooperativas, gobiernos regionales y locales.</p>
TIMELINE	n/a
COSTS & SOURCE OF FINANCE	Implementación de convenios y articulación de instituciones públicas privadas.

PROJECT TITLE	PLAN DE ACCIÓN PARA EL SECTOR SALUD Y EPIDEMIOLOGÍA
SECTOR	Salud y epidemiología
OBJECTIVE	Reducir la incidencia de enfermedades sensibles al Cambio Climático que impactan el bienestar de las personas. Garantizar el acceso a la salud (seguro universal) por aseguramiento de todos los grupos poblacionales y reducir el ausentismo laboral como consecuencia de epidemias o enfermedades relacionadas con vectores que responden al cambio climático.

ACTIVITIES	<ul style="list-style-type: none"> • Impulsar programa de valoración y recuperación de los sistemas tradicionales de prevención y tratamiento de salud desde una visión integral. • Promover la investigación y formación para identificar la relación entre enfermedades y el clima. • Prever refugio adecuado en caso de catástrofes a nivel regional. • Establecer un sistema de alerta temprana integral que apoye las acciones sanitarias ante el Cambio Climático. • Mejorar el sistema de información sanitaria (Vigilancia epidemiológica), de la tecnología sanitaria para prevención control y tratamiento. • Planificar el territorial nacional en coherencia con los planes locales (prohibir ordenamiento humano en zonas inundables). • Fortalecer las capacidades locales el sistema de comunicación para la prevención sanitaria a la comunidad (nivel comunitario) para la identificación de impactos en salud del cambio climático. • Promover campaña masiva de difusión de información y prevención de enfermedades sensible al Cambio Climático. • Formar agentes de salud (salud ambiental/educación) capacitación y respuesta ante una situación de emergencia climática nivel distrital. • Promocionar las Redes de Salud (promoción de la salud) con participación de la sociedad civil. • Implementación de planes para asegurar nutrición de la población y acceso a agua segura (fortalecimiento del programa alimentario nutricional integral - PANI). • Incrementar el presupuesto destinado a las acciones de fortalecimiento y prevención ante el Cambio Climático.
IMPLEMENTERS	<p>Entidad responsable: Ministerio de Salud Pública y Bienestar Social (MSPBS).</p> <p>En coordinación con: Secretaría del Ambiente (SEAM), Secretaría de Emergencia Nacional (SEN), Ministerio de Educación y Cultura (MEC), Universidad Nacional de Asunción (UNA), gobiernos regionales y locales.</p>
TIMELINE	n/a
COSTS & SOURCE OF FINANCE	Implementación de convenios y articulación de instituciones públicas privadas.

PROJECT TITLE	PLAN DE ACCIÓN PARA EL SECTOR AMBIENTE, BOSQUES Y ECOSISTEMAS FRÁGILES
SECTOR	Ambiente, bosques y ecosistemas frágiles
OBJECTIVE	Promover el uso sostenible de los recursos naturales manteniendo las capacidades de resiliencia (se usa y se mantienen las funciones). Asegurar la calidad ambiental saludable en áreas urbanas, rurales y comunidades indígenas.

ACTIVITIES	<ul style="list-style-type: none"> • Promover la investigación, estudios y sistematización en relación a los saberes ancestrales y populares. • Elaborar criterios técnicos para la transversalización de la variabilidad climática. • Fortalecer las capacidades locales para un acceso a los bienes y servicios ambientales, que contemple la capacitación y entrenamiento ante eventos extremos y prevención de riesgos. • Incrementar el presupuesto destinado al Sistema Nacional de Áreas Silvestres Protegidas (SINASIP). Potenciar el Fondo de Áreas Protegidas. • Fortalecer el sistema de comunicación para la prevención ante eventos extremos por parte de las comunidades más vulnerables. • Propiciar la implementación efectiva de incentivos económicos como el Pago por los Servicios Ambientales. • Elaborar planes de gestión de riesgos y adaptación al Cambio Climático (nivel distrital) en marco de un Plan Nacional de ordenamiento territorial. • Fortalecer las instituciones y de las organizaciones de base. • Cumplir con las normativas ambientales. • Aprovechar la experiencia actual de adaptación para sobreponerse a cambios futuros en el clima. • Impulsar los sistemas de agroforestería, sistemas silvopastoril y agrosilvopastoril como medidas de adaptación y buenas prácticas productivas. • Fortalecer el Sistema Nacional de Áreas Silvestres Protegidas como medidas de adaptación por sus funciones ecosistémicas. • Promover acciones de reforestación con fines energéticos y maderables en base al Decreto N 4056. • Promocionar acciones conectividad biológica como los corredores o conectores biológicos. • Promover las actividades de Servicios Ambientales en base a la Ley 3001/2006.
IMPLEMENTERS	<p>Entidad responsable: Secretaría del Ambiente (SEAM).</p> <p>En coordinación con: Secretaría del Ambiente (SEAM), Secretaría de Emergencia Nacional (SEN), Ministerio de Educación y Cultura (MEC), Universidad Nacional de Asunción (UNA), Yacyretá, Itaipú, gobiernos regionales y locales.</p>
TIMELINE	n/a
COSTS & SOURCE OF FINANCE	Implementación de convenios y articulación de instituciones públicas privadas.

PERÚ

WATER RESOURCES PRIORITIES

SECTOR	AGUA PARA USO AGRARIO
OVERALL OBJECTIVES	Mejoramiento y construcción de reservorios para la provisión del servicio de agua para uso agrario en cuencas hidrográficas vulnerables al cambio climático
ACTIVITIES	La medida está orientada a promover la implementación de infraestructuras de regulación y almacenamiento con el objetivo de asegurar la provisión de agua superficial para uso agrario durante el año (prioritariamente en época de estiaje) en sistemas de riego ya existentes o para ampliar la cobertura del servicio de provisión en cuencas vulnerables al cambio climático, considerando entre las tareas: i) Plan de trabajo de operadores hidráulicos, organizaciones de usuarios y actores involucrados con estrategias de almacenamiento sostenible de agua considerando los efectos del cambio climático en el ciclo hidrológico y balances hídricos. ii) Desarrollo de estudios hidráulicos, hidrogeológico, identificación zonas/ecosistemas de recarga, entre otros.
OUTCOMES	Sectores hidráulicos incrementan su capacidad de almacenamiento y provisión de agua para uso agrario en cuencas hidrográficas vulnerables al cambio climático.
IMPLEMENTERS	AGRORURAL - Midagri. - CEPLAN. - GORE y GOLO. - PSI - Midagri. -PPII. -Productores.B5
INDICATORS	Volumen de agua superficial almacenada en reservorios para la provisión del servicio de agua para riego en cuencas vulnerables al cambio climático. 2021: 4498,8. 2025: 4550,8. 2030: 4595,8 volumen de agua.
TIMELINE	2021, 2025, 2030

SECTOR	AGUA PARA USO AGRARIO
OVERALL OBJECTIVES	Implementación de intervenciones relacionadas a la siembra y cosecha de agua para la seguridad hídrica agraria en cuencas hidrográficas vulnerables al cambio climático.

ACTIVITIES	La medida consiste principalmente en acciones relacionadas a la siembra y cosecha de agua, aportando a la recarga de acuíferos y la reducción de la escorrentía, atiende los peligros de sequías prolongadas, avenidas, erosión del suelo y arrastre de sedimentos, como mecanismo de seguridad hídrica agraria, que incrementa la capacidad de regulación hídrica de las cuencas, extendiendo el periodo de disponibilidad hídrica y aportando a la cantidad, oportunidad y calidad del recurso hídrico para uso agrario, reduciendo así la vulnerabilidad de la población objetivo en cuencas priorizadas. Esta medida involucra la conservación y recuperación de ecosistemas y fuentes de agua para provisión del servicio de agua para riego como son, por ejemplo, los bofedales o humedales. Entre sus tareas se plantea: i) Establecimiento de mecanismos de conservación de agua por operadores hidráulicos y organizaciones de usuarios; ii) Desarrollo de estudios hidrogeológicos para conocer las características litológicas, geohidrológicas a nivel regional y/o local; iii) Identificar zonas y ecosistemas de recarga; iv) Recuperación y/o conocimiento de saberes ancestrales en la gestión de recursos hídricos.
OUTCOMES	Sectores hidráulicos incrementan su capacidad de almacenamiento y provisión de agua para uso agrario en cuencas hidrográficas vulnerables al cambio climático.
IMPLEMENTERS	<ul style="list-style-type: none"> - AGRORURAL - Midagri. - CEPLAN. - GORE y GOLO. - PSI - Midagri. -PPII. -Productores, entre otros
INDICATORS	Volumen de agua infiltrada para recarga de acuíferos en cuencas vulnerables al cambio climático.
TIMELINE	2021, 2025, 2030

SECTOR	AGUA PARA USO AGRARIO
OVERALL OBJECTIVES	Implementación de infraestructura hidráulica de conducción, distribución y aplicación de agua para riego en cuencas hidrográficas vulnerables al cambio climático.
ACTIVITIES	La medida busca reducir la presión de la demanda de agua a través de la implementación de infraestructura hidráulica de captación, conducción y distribución del recurso agua de forma segura logrando incrementar el porcentaje de superficie bajo riego en áreas de

	secano expuestas a la incidencia de sequías prolongadas y/o con estrés hídrico asociadas al cambio climático, promoviendo por un lado la seguridad alimentaria, asegurando disponibilidad hídrica oportuna según la demanda, y, por otro lado, a mejorar la eficiencia en el riego y la gestión del agua en el uso agrario. Esta medida implica el desarrollo de las siguientes tareas: i) Priorización de zonas a intervenir, ii) Evaluación del estado de la infraestructura hidráulica en las cuencas priorizadas, iii) Diagnóstico de la tecnología más apropiada de riego según ámbitos de intervención y organización social, iv) Sensibilización de actores y difusión de beneficios de la medida como adaptación al cambio climático, v) Operación y mantenimiento de infraestructura hidráulica de riego.
OUTCOMES	Sectores hidráulicos con eficiencia en los sistemas de riego para uso agrario en cuencas vulnerables al cambio climático.
IMPLEMENTERS	<ul style="list-style-type: none"> - AGRORURAL - Midagri. - DGIAR – Midagri. - GORE. - GOLO. - PSI – Midagri. - Fondo Sierra Azul - Midagri. - PPII /productores, entre otros. - Sector privado (Operadores Infraestructura Hidráulica).
INDICATORS	% de superficie irrigada en cuencas vulnerables al cambio climático. 2021: 39,6 %. 2025: 41,8 %. 2030: 44,9 %.
TIMELINE	2021, 2025, 2030

SECTOR	AGUA PARA USO AGRARIO
OVERALL OBJECTIVES	Implementación de infraestructura de protección en los sectores hidráulicos para uso agrario ante impactos de eventos extremos asociados al cambio climático.
ACTIVITIES	La medida reduce el riesgo por inundaciones, derrumbes, deslizamientos y otros eventos asociados al cambio climático que puedan ocasionar daños en las infraestructuras hidráulicas de riego (presas, canales, bocatomas, drenaje, terrenos de cultivo, sistemas de riego, entre otros), provocando la consecuente interrupción del servicio de suministro del recurso hídrico con fines agrarios. Las principales opciones tecnológicas identificadas para esta medida son: reforestación y forestación, bosques de galería (inundaciones), defensas ribereñas (diques de protección, encauzamiento, espigones, enrocado de protección, diques de retención), estructuras de

derivación, retención de sedimentos, descolmatación del cauce, enmallados, recubrimiento de canales. Entre sus tareas se identifican:

- i) Coordinación y plan de trabajo multisectorial y multinivel con actores involucrados.
- ii) Implementación de estudios de base y evaluación de riesgos (riesgo en cuencas hidrográficas, vulnerabilidad recursos hídricos, infraestructuras hidráulicas y sistemas de riego).
- iii) Identificación previa en las zonas vulnerables ante inundaciones para el control de zonas críticas y fajas marginales en cauces de ríos.
- iv) Mantenimiento de cauces, drenajes y estructuras de seguridad física.
- v) Desarrollo de infraestructura de protección, disipación y/o drenaje (defensas ribereñas, espigones, muros de contención, cobertura vegetal, drenaje en ladera y similares).

OUTCOMES	Sectores hidráulicos con eficiencia en los sistemas de riego para uso agrario en cuencas vulnerables al cambio climático.
IMPLEMENTERS	<ul style="list-style-type: none"> - AGRORURAL- Midagri. - ANA- Midagri. - PSI - Midagri. - DGIHR - Midagri. - GORE y GOLO. - PPII /productores, entre otros. - Sector privado (Operadores Infraestructura Hidráulica).
INDICATORS	No de intervenciones en sectores hidráulicos para protección física ante peligros en cuencas vulnerables al cambio climático.
TIMELINE	2021, 2025, 2030

SECTOR	AGUA PARA USO AGRARIO
OVERALL OBJECTIVES	Implementación de sistemas de riego tecnificado en cuencas hidrográficas vulnerables al cambio climático.
ACTIVITIES	La medida consiste en la implementación de riego tecnificado, buenas prácticas de riego y la optimización de sistemas de riego precarios que por su simplicidad producen pérdidas en la conducción y distribución del agua, priorizando su implementación en cuencas hidrográficas con incidencia de sequías prolongadas, estrés y déficit hídrico asociados al cambio climático. Esta medida incrementa la eficiencia en el uso del recurso hídrico y su uso óptimo reduciendo la vulnerabilidad de los agricultores ante sequías,

reduciendo la presión sobre el recurso e incrementando la disponibilidad de uso a partir de una mejor eficiencia en la aplicación del riego, la transferencia de tecnologías apropiadas y la adopción por parte de los productores agropecuarios. La medida incluye entre sus tareas:

- i) Coordinación y planificación de acciones integradas entre actores involucrados de los tres niveles de gobierno.
 - ii) Sensibilización a productores agrarios para el aprovechamiento del recurso hídrico para uso agrario.
 - iii) Diagnóstico y línea base de las unidades productivas bajo riego (cultivos, riego, manejo, etc.).
 - iv) Evaluar las mejores opciones tecnológicas para el mejor aprovechamiento de agua para uso agrario según el tipo de cultivo, aprovechamiento y mercado.
 - v) Desarrollo de capacidades progresivas a los productores/as agrarios en mejorar las prácticas de riego, el uso y mantenimiento de sistemas de riego tecnificado.
 - vi) Asistencia técnica a productores agrarios capacitados en prácticas de riego y operación, mantenimiento de la infraestructura hidráulica.
 - vii) Infraestructura y equipamiento para el sistema de riego tecnificado. Adecuación a sistemas de riego tecnificados mediante la implementación del Programa de riego tecnificado consistente en el desarrollo de capacidades a profesionales de GORE y GOLO.
- Sectores hidráulicos con eficiencia en los sistemas de riego para uso agrario en cuencas vulnerables al cambio climático.

OUTCOMES	
IMPLEMENTERS	<ul style="list-style-type: none"> - DGIHR – Midagri. - PSI – Midagri. - Fondo Sierra Azul - Midagri. - INIA - Midagri. - GORE y GOLO. - PPII /productores, entre otros. - Sector privado
INDICATORS	Intensidad de riego tecnificado para producción agrícola en cuencas vulnerables al cambio climático. 2021: 9,5 %. 2025: 12,5 %. 2030: 16,4 %.
TIMELINE	2021, 2025, 2030

SECTOR	AGUA PARA USO AGRARIO
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OVERALL OBJECTIVES	Fortalecimiento de la institucionalidad de los sectores hidráulicos para la gestión del agua de uso agrario en cuencas hidrográficas vulnerables al cambio climático.
ACTIVITIES	La medida se enfoca en el fortalecimiento de la institucionalidad de las juntas de riego quienes gestionan el agua a nivel parcelario, promoviendo su reconocimiento formal, así como una mejor organización, gestión administrativa, mayor información y conocimiento de la incidencia del cambio climático y medidas de adaptación para su incorporación en los planes de cultivo y mejor distribución del agua. Su implementación considera entre las tareas: i) Establecer mecanismos de articulación y planificación de acciones entre actores involucrados. ii) Fortalecer las competencias de las OUA para su reconocimiento como Operadores Hidráulicos de acuerdo con la Ley N° 29338, Ley de Recursos Hídricos. iii) Sensibilización a los operadores hidráulicos, organización de usuarios del agua orientado al mejor cumplimiento de la normatividad.
OUTCOMES	Operadores de Infraestructura Hidráulica auto gestionan sus sistemas hidráulicos considerando acciones de adaptación ante el cambio climático.
IMPLEMENTERS	- AGRORURAL – Midagri. - ANA (DARH, DOUA) – Midagri. - PSI – Midagri. - DGIHR – Midagri. - GORE y GOLO. Organizaciones de Usuarios de agua. - Operadores de Infraestructura Hidráulica.
INDICATORS	N o de organizaciones de usuarios de riego reconocidos en sectores hidráulicos en cuencas hidrográficas vulnerables al cambio climático. 2021: 7000. 2025: 8500. 2030: 9891. (organizaciones)
TIMELINE	2021, 2025, 2030

SECTOR	AGUA PARA USO AGRARIO
OVERALL OBJECTIVES	Asistencia técnica y fortalecimiento de capacidades para el aprovechamiento sostenible del agua para uso agrario en cuencas hidrográficas vulnerables al cambio climático.

ACTIVITIES	<p>La medida fortalecerá los servicios de asistencia técnica y capacitación dirigidos a los productores y las productoras agrarias de las OUA, a sus directivos y representantes, y en temas relacionados a la distribución y aprovechamiento eficiente y sostenible del agua para riego parcelario tradicional y riego tecnificado en un contexto de cambio climático. Entre sus tareas se plantean:</p> <p>i) Coordinación multisectorial y multinivel y planificación para la implementación de acciones conjuntas de capacitación, y asistencia técnica a las OUA en el ámbito de la jurisdicción priorizadas.</p> <p>ii) Implementar talleres de sensibilización sobre el eficiente uso del recurso hídrico y adaptación al cambio climático dirigido a directivos y profesionales de las OUA.</p> <p>iii) Planificar, organizar y ejecutar eventos de capacitación y entrenamiento a las Juntas de riego, Comisiones y Comités de Usuarios de Agua en temas de distribución de agua, eficiencias y medición del agua que tienda al ordenamiento del manejo del agua y adaptación al cambio climático.</p> <p>iv) Monitorear y evaluar las acciones implementadas.</p>
OUTCOMES	Operadores de Infraestructura Hidráulica auto gestionan sus sistemas hidráulicos considerando acciones de adaptación ante el cambio climático.
IMPLEMENTERS	<ul style="list-style-type: none"> - AGRORURAL - Midagri. - Fondo Sierra Azul – Midagri. - ANA- Midagri. - GORE y GOLO. - DGHAR – Midagri. - MIMP. - Productores/as Operadores de Infraestructura Hidráulica.
INDICATORS	<p>N o de productores y productoras agropecuarias mejoran sus capacidades y conocimiento para la gestión y el aprovechamiento del agua con fines agrarios en cuencas hidrográficas vulnerables al cambio climático.</p> <p>2021: 19 310. 2025: 20 510. 2030: 22 010. (organizaciones)</p>
TIMELINE	2021, 2025, 2030

SECTOR	AGUA PARA USO ENERGÉTICO
OVERALL OBJECTIVES	Promoción del desarrollo de infraestructura que reduzca la vulnerabilidad de la generación hidroeléctrica, especialmente en centrales ubicadas en cuencas vulnerables al cambio climático.

ACTIVITIES	<p>La medida busca promover sistemas de afianzamiento hídrico enfocados principalmente en reservorios para el almacenamiento y regulación de agua (reservorios, pulmones de regulación, presas de almacenamiento de tamaños medios o pequeños, entre otros) para generación eléctrica con el fin de fortalecer e incrementar la seguridad hídrica y, consecuentemente, contribuir a la seguridad energética en el Perú. Entre sus principales tareas se tiene:</p> <p>i) Fortalecimiento de capacidades y sensibilización sobre los beneficios económicos y ambientales del afianzamiento y regulación hídrica.</p> <p>ii) Desarrollo de estudios de costo-beneficio de intervenciones en la producción hidroeléctrica considerando escenarios de cambio climático.</p> <p>iii) Desarrollo de estudios de línea base de la disponibilidad hídrica en cuencas vulnerables al cambio climático.</p> <p>iv) Promoción de portafolios de proyectos de inversión para la construcción de reservorios hidroenergéticos en coordinación con otros usos sectoriales del agua (GORE, GOLO, EPS, Junta de usuarios, entre otros).</p>
OUTCOMES	Agentes del sector en la generación de hidroenergía incrementan su capacidad de regulación de agua para la sostenibilidad del suministro del servicio de electricidad en cuencas hidrográficas vulnerables al cambio climático.
IMPLEMENTERS	<ul style="list-style-type: none"> - Minem. - ANA- Midagri. - Proinversión. - GOLO. - Senamhi - MINAM. - GORE. - COES.
INDICATORS	No. de proyectos hidroenergéticos que incorporan medidas que afianzan su capacidad de regulación de agua para la producción de electricidad en cuencas hidrográficas vulnerables al cambio climático.
TIMELINE	2021, 2025, 2030

SECTOR	AGUA PARA USO ENERGÉTICO
OVERALL OBJECTIVES	Promoción de la implementación de infraestructura de protección en la generación, transmisión y distribución de electricidad ante los impactos de peligros asociados al cambio climático en cuencas hidrográficas vulnerables.

ACTIVITIES	<p>La medida se enfoca en desarrollar las capacidades de los actores, se incluirá la valoración de estas medidas en la promoción de las inversiones que mejorará la disponibilidad de información a escalas locales, entre otros, para garantizar la sostenibilidad del suministro hidroenergético. Entre las principales tareas identificadas para esta medida se pueden mencionar:</p> <p>i) Fortalecimiento de capacidades y sensibilización sobre los beneficios económicos y ambientales de la gestión de riesgos de desastres en un contexto de cambio climático.</p> <p>ii) Desarrollo de estudios de riesgos y vulnerabilidad de las centrales hidroeléctricas ante los peligros asociados al cambio climático.</p> <p>iii) Diagnóstico y análisis de la relación costo/beneficio de las medidas de reducción de riesgos más apropiadas para proteger el sistema de generación, transmisión y distribución de energía.</p> <p>iv) Promoción de portafolios de proyectos de inversión para la protección y reducción de la vulnerabilidad de las centrales hidroeléctricas.</p>
OUTCOMES	Sectores hidráulicos incrementan su capacidad de almacenamiento y provisión de agua para uso agrario en cuencas hidrográficas vulnerables al cambio climático.
IMPLEMENTERS	<ul style="list-style-type: none"> - Minem. - OSINERGMIN. - MINAM. - GOLO. - Senace - MINAM. - GORE. - COES.
INDICATORS	N.º de proyectos hidroenergéticos que incorporan medidas de reducción de riesgos en cuencas hidrográficas vulnerables al cambio climático.
TIMELINE	2021, 2025, 2030

SECTOR	AGUA PARA USO ENERGÉTICO
OVERALL OBJECTIVES	Implementación de buenas prácticas de uso eficiente de energía en los sectores económicos.
ACTIVITIES	La medida tiene como propósito la promoción e implementación de buenas prácticas en el consumo de la energía y la mejora de la productividad, las cuales se entienden como medidas que coadyuvan a la entrega de más servicios con el mismo consumo de energía o menos, poniendo énfasis en el aumento del consumo en horas fuera de punta y por lo tanto más eficiente.

Las principales tareas identificadas para esta medida son:

- i) Promoción de la optimización de la eficiencia energética.
- ii) Fortalecimiento de capacidades y sensibilización sobre los beneficios económicos y ambientales del uso eficiente de la energía.
- iii) Mejoramiento de redes eléctricas de transmisión y distribución. Promover mejorar las instalaciones eléctricas en viviendas con criterios de seguridad y eficiencia.
- iv) Fortalecer la promoción y difusión de las auditorías energéticas en todos los sectores económicos.
- v) Desarrollar sistemas de información amigables para el público general sobre tecnologías eficientes energéticamente.
- vi) Fomentar la publicidad y difusión de tecnologías eficientes y del etiquetado de eficiencia energética.
- vii) Promover las buenas prácticas de eficiencia energética en todos los sectores económicos.

OUTCOMES	Agentes del sector suministran y consumen de manera eficiente y sostenible el servicio de electricidad en cuencas hidrográficas vulnerables al cambio climático.
IMPLEMENTERS	<ul style="list-style-type: none"> - Minem. - GORE. - GOLO. - Empresas de distribución eléctrica
INDICATORS	% de participación de energías renovables (RER y centrales hidroeléctricas) en la hora de máxima demanda del Sistema Eléctrico Interconectado Nacional.
TIMELINE	2021, 2025, 2030

AGRICULTURE PRIORITIES

SECTOR	SUELOS
OVERALL OBJECTIVES	Implementación de buenas prácticas de fertilización de los suelos en zonas vulnerables a peligros asociados al cambio climático.
ACTIVITIES	La medida está orientada a promover buenas prácticas de fertilización de suelos que favorezcan el mantenimiento o incremento de la fertilidad de los suelos, asegurando el reciclaje de sus nutrientes y que permitan incrementar la productividad de los cultivos. Entre las opciones tecnológicas se tienen: estiércol, guano de isla, humus de lombriz, abonos verdes, compost, caldo microbiano de rizosfera. Las principales tareas a implementar son: sensibilización y fortalecimiento de capacidades locales sobre fertilización de suelos; diagnóstico participativo sobre fertilidad, aptitud y vulnerabilidad de suelos a nivel local; selección del paquete tecnológico de

fertilización más adecuado en función de las características del suelo; y estudios técnicos participativos sobre calidad de suelo y rendimientos productivos.

OUTCOMES	Suelos agrarios acondicionados con prácticas de manejo y conservación de suelos mejoran su capacidad productiva en zonas vulnerables a peligros asociados al cambio climático.
IMPLEMENTERS	<ul style="list-style-type: none"> - Comunidades Campesinas. - Helvetas Swiss Intercoop. - IDMA. - RAAA. - Soluciones Prácticas ITDG. - Agroideas - Midagri. - AGRORURAL - Midagri. - DEVIDA. - Midagri. - INIA - Midagri. - Foncodes - Midis. - MINAM. - DGDAA - Midagri. - DGAAA, DGDG -Midagri. - GORE. - GOLO.
INDICATORS	% de productores/as que implementan buenas prácticas de fertilización en cantidad suficiente de los suelos en zonas vulnerables a peligros asociados al cambio climático. 2021: 28,4. 2025: 29,88. 2030: 31,84.
TIMELINE	2021, 2025, 2030

SECTOR	SUELOS
OVERALL OBJECTIVES	Implementación de tecnologías de manejo y control de la erosión de suelos en zonas vulnerables a peligros asociados al cambio climático.

ACTIVITIES	La medida está orientada a fomentar el manejo y control de la erosión consiste en prácticas mecánico - estructurales para reducir la erosión a través del control de escorrentía superficial, modificando la longitud de la pendiente o inclinación, mediante la construcción o habilitación de terrazas de banco o terrazas de absorción, terrazas de formación lenta, rehabilitación de andenes, estabilización de taludes y cárcavas (diques), y zanjas de infiltración. Las principales acciones a realizar son: la sensibilización y fortalecimiento de capacidades locales para el desarrollo de prácticas y tecnologías de mejora de la cobertura vegetal y protección física; realización de diagnósticos participativos sobre topografía, cobertura y vulnerabilidad de suelos ante el cambio climático a nivel local; selección de tecnologías para mejorar la cobertura vegetal e infraestructura física de protección de suelos más adecuada según aptitud productiva y topografía.
OUTCOMES	Suelos agrarios acondicionados con prácticas de manejo y conservación de suelos mejoran su capacidad productiva en zonas vulnerables a peligros asociados al cambio climático.
IMPLEMENTERS	<ul style="list-style-type: none"> - Comunidades Campesinas. - Asociación de productores. - Universidades. - AGRORURAL - Midagri. - DGDAA - Midagri. - DGDG - Midagri. - INIA - Midagri. - GORE. - GOLO.
INDICATORS	N.º de productores agropecuarios que reciben asistencia técnica para la implementación de tecnologías de manejo y control de la erosión de suelos en zonas vulnerables a peligros asociados al cambio climático. 2021: 19 787. 2025: 38 162. 2030: 86 732.
TIMELINE	2021, 2025, 2030

SECTOR	SUELOS
OVERALL OBJECTIVES	Implementación de infraestructura de protección de áreas de cultivo en zonas críticas ante inundaciones.
ACTIVITIES	La medida está orientada a la ejecución de infraestructura de protección de áreas de cultivos en zonas críticas ante inundaciones consideran opciones tecnológicas que sean comparables entre sí, además de usar materiales apropiados para la zona y que estén

	disponibles y accesibles. Las obras de protección comprenden: diques perimetrales, diques longitudinales, muros de encauzamiento y espigones. Las principales acciones a implementar son: el establecimiento de acuerdos con actores locales para la instalación de la infraestructura; el diagnóstico participativo sobre los puntos críticos susceptible a inundaciones en zonas de cultivos; el fortalecimiento de capacidades a productores/as locales en prácticas e instalación e infraestructura física de protección de suelos con cultivos; y, asistencia técnica en el proceso de implementación de prácticas e instalación de infraestructura de protección.
OUTCOMES	Productores agropecuarios que protegen áreas de cultivos en zonas críticas ante inundaciones.
IMPLEMENTERS	<ul style="list-style-type: none"> - Comunidades Campesinas. - Helvetas Swiss Intercooperation. - Soluciones Prácticas ITDG. - Cooperación Internacional (COSUDE, GIZ). - AGRORU RAL - Midagri. - DGDAA - Midagri. - INIA - Midagri. - Midis.
INDICATORS	N.º de intervenciones con tecnologías de protección en áreas de cultivos en zonas críticas ante inundaciones. 2021: 15. 2025: 21. 2030: 31.
TIMELINE	2021, 2025, 2030

SECTOR	SUELOS
OVERALL OBJECTIVES	Implementación de tecnologías de recuperación de suelos agrarios degradados por salinización en zonas vulnerables al cambio climático.
ACTIVITIES	La medida está orientada a la ejecución de tecnologías para la recuperación de suelos agrarios degradados por acidificación, a través de la biorremediación a procesos de contaminación química (fertilizantes, pesticidas), manejo de caudales por fuentes de metales pesados de origen natural, manejo de topsoil, evaluación de bancos semilleros nativos, micrositos de propagación de material vegetativo nativo, fertilización y enmiendas orgánicas, y manejo de cobertura vegetal (resiembras, trasplantes, revegetación). Las principales tareas a realizar son: la caracterización de suelos degradados por salinización; fortalecimiento de capacidades locales en paquetes tecnológicos de recuperación y restauración de suelos degradados; asistencia técnica para la selección e implementación de

	paquetes tecnológicos de recuperación o restauración de suelos para procesos productivos; y evaluaciones técnicas participativas sobre calidad de suelos y rendimientos productivos post implementación de paquetes tecnológicos.
OUTCOMES	Suelos degradados por uso intensivo agrario recuperados para procesos productivos resilientes ante peligros asociados al cambio climático.
IMPLEMENTERS	<ul style="list-style-type: none"> - Comunidades Campesinas. - AGRORURAL - Midagri. - ANA - DGDAA - Midagri. - PSI- Midagri. - INIA - Midagri. - Indeci. - Senasa - Midagri. - GORE y GOLO. - Serfor - Midagri.
INDICATORS	N.o de productores agropecuarios que desarrollan tecnologías de recuperación de suelos degradados en zonas vulnerables al Cambio Climático.
TIMELINE	2021, 2025, 2030

SECTOR	SISTEMAS PRODUCTIVOS AGROPECUARIOS
OVERALL OBJECTIVES	Diversificación productiva en cultivos y crianzas con mayor vulnerabilidad al cambio climático.
ACTIVITIES	La medida está orientada a la combinación del subsistema agrícola con el forestal y el ganadero en un sistema de producción diversificado, a través de implementación de cultivos permanentes junto con transitorios y/o manejo de ganadería familiar de pocas cabezas de ganado con crianzas mixtas (diversas clases), e instalación de cercos vivos y cortinas rompe vientos para protección y generación de microclimas, diversificación productiva (sistemas agroforestales, policultivos, biohuertos a campo abierto, y en invernaderos, crianzas mixtas, agricultura de conservación), otras actividades encaminadas a disponer de un sistema integral de producción.

OUTCOMES	Productores(as) disponen e implementan buenas prácticas agropecuarias considerando los efectos del cambio climático.
IMPLEMENTERS	<ul style="list-style-type: none"> - Helvetas Swiss Intercoop. - IDMA. - Comunidades campesinas. - DEVIDA. - RAAA. - Soluciones Prácticas ITDG. - Cooperación Internacional(COSUDE, GIZ). - DGDG, DGDAA - Midagri. - INIA - Midagri. - Midis (Foncodes). - Senasa. - GORE. - GOLO. - Agroideas - Midagri. - AGRORURAL - Midagri. - Sierra y Selva Exportadora. - Fondo AgroPeru. - Fogasa - Midagri.
INDICATORS	<p>% de productores(as) que diversifican sus sistemas de producción en cultivos y crianzas con mayor vulnerabilidad al cambio climático. 2021: 84,06. 2025: 89,25. 2030: 96,18.</p> <p>N.º de productores que implementan Proyectos de Reversión Productiva Agropecuaria (PRPA). 2021: 2634. 2025: 2634. 2030: 2634.</p>
TIMELINE	2021, 2025, 2030
SECTOR	SISTEMAS PRODUCTIVOS AGROPECUARIOS
OVERALL OBJECTIVES	Manejo integrado de plagas y enfermedades en cultivos y manejo preventivo de enfermedades en crianzas, con mayor vulnerabilidad al cambio climático.

ACTIVITIES	La medida comprende una estrategia que usa una gran variedad de métodos de control: cultural, biológico, etológico, físico y mecánico, genético y químicos, a través del manejo de rastrojo, rotación de cultivos, tratamiento de semillas, establecer un umbral de daño económico, monitoreo de plagas, protección de enemigos naturales de las plagas, selección de los productos adecuados. Las principales acciones a implementar son: sensibilizar y capacitar a productores/as en el manejo integrado de plagas y enfermedades, considerando las condiciones meteorológicas relacionadas; identificar las plagas y enfermedades más recurrentes en los cultivos y crianzas para seleccionar la opción tecnológica; implementar y fortalecer sistemas de alerta temprana de plagas y enfermedades en los cultivos y crianzas; y, dotar de los insumos y equipos necesarios para la implementación y mantenimiento de la medida.
OUTCOMES	Productores(as) disponen e implementan buenas prácticas agropecuarias considerando los efectos del cambio climático.
IMPLEMENTERS	<ul style="list-style-type: none"> - Asociaciones de productores/as. - Comunidades Campesinas. - Universidades - Academia. - DGDAA - Midagri. - DGDG - Midagri. - INIA - Midagri. - GORE y GOLO. - Senasa - Midagri. - Universidad es - Academia.
INDICATORS	<p>% de productores(as) que realizan manejo integrado de plagas en cultivos con mayor vulnerabilidad al cambio climático 2021: 21,61 %. 2025: 41,36 %. 2030: 93,09 %.</p> <p>% de reducción de pérdidas anuales de productos agrícolas por plagas en cultivos con mayor vulnerabilidad al cambio climático. 2021: 15,16 %. 2025: 15,64 %. 2030: 16,26 %.</p> <p>% de reducción de pérdidas de producción en la actividad pecuaria por enfermedades en el País.</p>
TIMELINE	2021, 2025, 2030

SECTOR	SISTEMAS PRODUCTIVOS AGROPECUARIOS
OVERALL OBJECTIVES	Manejo de praderas naturales para asegurar la alimentación de las crianzas y reducir su vulnerabilidad ante al cambio climático.

ACTIVITIES	La medida está orientada al manejo de praderas naturales se refiere a la gestión racional de los pastos naturales a través de la planificación del uso de la pradera, para mantener una buena cobertura vegetal, ayudar a la infiltración del agua, la recarga de acuíferos y a la vez el incremento de alimento para la producción pecuaria. Entre las opciones tecnológicas se encuentran: clausura de praderas, rotación de potreros, abonamiento de pastos naturales, revegetación (resiembra y trasplante) con especies gramíneas y leguminosas nativas e introducida, control de plantas indeseables o invasoras, transformación y almacenamiento de pastos y forrajes, formulación de piensos concentrados, sistemas silvopastoriles, sistema silvopastoril (siembra de pastos perennes o anuales), manejo estabulado de ganado.
OUTCOMES	Productores(as) realizan una gestión adecuada de la alimentación de las crías en zonas vulnerables a peligros asociados al cambio climático.
IMPLEMENTERS	<ul style="list-style-type: none"> - Productores. - Organizaciones de productores. - Soluciones Prácticas ITDG. - DESCO. - Cooperación Internacional (COSUDE) - Universidades: Facultades de Agronomía, Zootecnia, Veterinaria y Biología. - AGRORURAL - Midagri. - DGDG – Midagri. - DGAAA – Midagri. - Fondo Sierra Azul - Midagri. - INIA - Midagri. - Proyecto Haku Wiñay, Foncodes (Midis). - GORE y GOLO.
INDICATORS	N.º de hectáreas de praderas naturales manejadas en zonas vulnerables al cambio climático. 2021: 5 547 004. 2025: 5 691 004. 2030: 5 873 638.
TIMELINE	2021, 2025, 2030

SECTOR	SISTEMAS PRODUCTIVOS AGROPECUARIOS
OVERALL OBJECTIVES	Manejo y conservación de pastos cultivados como suplementación alimentaria de las crías en zonas vulnerables con peligros asociados al cambio climático.

ACTIVITIES	La medida está orientada al manejo y conservación de determinadas variedades de pastos que requieren ser sembrados en condiciones de suelo y agua adecuados para lograr una alta producción de forraje durante determinado tiempo (pastos anuales, pastos permanentes), y ser aprovechados al corte o al pastoreo. Estos pastos pueden ser de la familia de gramíneas o de las leguminosas, y entre ellos pueden asociarse o mezclarse. El uso de pastos cultivados permite incrementar la oferta forrajera en cantidad y calidad y por ende la capacidad de carga, reduciendo la presión de pastoreo sobre la pradera natural, lo que permite incrementar la productividad de los principales productos ganaderos como leche, carne, lana, fibra. Asimismo, comprende la implementación de tecnologías de henificado y ensilado de pastos en la época de mayor oferta de pastos y el ordenamiento de su unidad productiva para destinar áreas específicas para conservar forrajes; a fin de garantizar la sostenibilidad de la producción de leche, carne, fibra y lana.
OUTCOMES	Productores(as) realizan una gestión adecuada de la alimentación de las crías en zonas vulnerables a peligros asociados al cambio climático.
IMPLEMENTERS	<ul style="list-style-type: none"> - Helvetas Swiss Intercoop. - DESCO. - Soluciones Prácticas ITDG. - Cooperación Internacional (COSUDE). - Organizaciones de productores/as. - Productores/as. - Comunidades Campesinas. - Universidades: Facultades de Agronomía, Zootecnia, Veterinaria y Biología. - AGRORURAL - Midagri. - DGDG - Midagri. - DGAAA - Midagri. - INIA - Midagri. - Fondo Sierra Azul - Midagri. - GORE y GOLO. - Proyecto Haku Wiñay, Foncodes (Midis).
INDICATORS	N.o de hectáreas de pastos instalados en zonas vulnerables a peligros asociados al cambio climático. 2021: 797 443. 2025: 1 067 443. 2030: 1 163 24.
TIMELINE	2021, 2025, 2030

SECTOR	SISTEMAS PRODUCTIVOS AGROPECUARIOS
OVERALL OBJECTIVES	Mejoramiento y transferencia de recursos genéticos de cultivos y crías para incrementar su resiliencia frente al cambio climático.
ACTIVITIES	La medida está orientada a la producción y obtención de variedades de alto rendimiento, buena calidad, y con resistencia y/o tolerancia a los factores bióticos y abióticos que son afectados por el cambio climático, mediante el mejoramiento genético para tolerancia al calor y a la sequía. Entre las opciones tecnológicas a implementar se tienen: a) En cultivos: selección in vitro e invernadero de accesiones de cultivos con características tolerantes a heladas, y b) En crías: Programa de mejoramiento genético, prácticas reproductivas, selección genética, incorporación de razas/crías más resistentes a la variabilidad climática, diversificación productiva, mejoramiento ganadero. Sus principales tareas son: sensibilizar sobre la importancia del mejoramiento genético de cultivos y crías en zonas vulnerables a condiciones climáticas adversas, facilitar el acceso de semillas certificadas, apoyar técnicamente para la transferencia e implementación de opciones tecnológicas del mejoramiento genético.
OUTCOMES	Productores(as) agropecuarios que acceden a servicios de mejoramiento y transferencia de recursos genéticos resistentes para adaptarse al cambio climático.
IMPLEMENTERS	<ul style="list-style-type: none"> - Organización de Productores /as. - Laboratorios de mejoramiento o de cultivos y crías. - Helvetas Swiss Intercoop. - DESCO. - Soluciones Prácticas ITDG. - Cooperación Internacional (COSUDE) - Productores/as. - Comunidades Campesinas. - Universidad: Facultades de Biología, Agronomía, Zootecnia, Veterinaria y Biología. - AGRORURAL - Midagri. - DGDAA - Midagri. - GORE y GOLO. - INIA - Midagri. - Proyecto Haku Wiñay, Midis (Foncodes). - DRA. - Senasa.
INDICATORS	N.º de informes de validación de variedades de cultivos tolerantes a condiciones climáticas adversas. 2021: 1. 2025: 2. 2030: 3.

	N.º de razas resistentes a condiciones climáticas adversas de las crías con mayor vulnerabilidad al cambio climático.
TIMELINE	2021, 2025, 2030

SECTOR	SISTEMAS PRODUCTIVOS AGROPECUARIOS
OVERALL OBJECTIVES	Manejo y Conservación in-situ y ex-situ de la agrobiodiversidad (ABD) para incrementar la resiliencia de los cultivos frente al cambio climático.
ACTIVITIES	La medida está orientada al desarrollo de dos componentes principales: i) La conservación in-situ, es la conservación de los ecosistemas y los hábitats naturales y el mantenimiento y recuperación de poblaciones viables de especies domesticadas y cultivadas en sus entornos naturales, con el objeto de lograr su resistencia y/o tolerancia a los efectos del cambio climático; y, ii) La conservación ex-situ se refiere a la conservación de agrobiodiversidad fuera de sus hábitats naturales, como los centros de conservación, bancos de germoplasma, bancos de genes, centros de cultivo de propagación; centros de custodia temporal como los bioterios; viveros; arboretos y jardines botánicos. Las principales acciones son: sensibilizar a los productores(as) así como a GORE y GOLO, sobre la importancia, estrategias y retos de la conservación de la ABD; fortalecer capacidades y brindar asistencia técnica a los productores(as) en conservación de la ABD como estrategia de adaptación al cambio climático; establecer acuerdos y planes de conservación de la ABD; diagnóstico del estado de conservación de los cultivos y agrobiodiversidad; y, apoyo técnico para la transferencia e implementación de tecnologías de conservación de la ABD.
OUTCOMES	Productores(as) agropecuarios que acceden a servicios de mejoramiento y transferencia de recursos genéticos resistentes para adaptarse al cambio climático.
IMPLEMENTERS	<ul style="list-style-type: none"> - Familias campesinas conservacionistas. - Centro Internacional de la Papa. - CCTA. - IDMA. - Universidad: Facultades de Biología, Agronomía e Ingeniería forestal. - DGDG - Midagri. - DGDAA - Midagri. - INIA (PNIA, Estaciones experimentales agrarias) - Midagri. - IIAP - MINAM. - DGDB - MINAM.

	- GORE y GOLO.
INDICATORS	Indicador 1 (conservación in-situ): No de expedientes técnicos de establecimiento de zonas de agrobiodiversidad sensibles al cambio climático evaluados con opinión técnica. 2021: 2. Indicador 2 (conservación ex-situ): Número de variedades resistentes de cultivos a condiciones climáticas adversas conservadas en centros de conservación de germoplasma.
TIMELINE	2021, 2025, 2030

FISHERIES/AQUACULTURE PRIORITIES

SECTOR	PESCA INDUSTRIAL
OVERALL OBJECTIVES	Implementación de un sistema de trazabilidad integrado para la anchoveta.
ACTIVITIES	La medida está orientada a controlar y vigilar la extracción y el desembarque de la anchoveta a lo largo de la cadena productiva para el consumo indirecto a través del Sistema de Trazabilidad de Pesca y Acuicultura, así como la desviación de la pesca de las embarcaciones artesanales hacia el procesamiento ilegal de harina de pescado. Las principales acciones a realizar son: implementar aplicativos informáticos y registrar la data; de igual modo, evaluar, retroalimentar y difundir la información recabada del programa de seguimiento de trazabilidad; asimismo, elaborar un diagnóstico de la situación actual de la trazabilidad del recurso a lo largo de la cadena productiva y fortalecer el control, la vigilancia y sanción de la flota pesquera industrial. Respecto al alcance geográfico de la medida, esta se desarrolla en el ámbito marítimo a lo largo de la franja costera del país.
OUTCOMES	Pesquería de anchoveta para el consumo humano indirecto aprovechada de manera sostenible en un escenario de cambio climático.
IMPLEMENTERS	<ul style="list-style-type: none"> - SNI. - SNP. - Empresas armadoras y empresas procesadoras. - DGSFS-PA - Produce. - DGPCHDI - Produce. - OGEIEE - Produce.

	<ul style="list-style-type: none"> - Imarpe - Produce. - Produce.
INDICATORS	% de plantas de procesamiento de productos pesqueros del recurso anchoveta implementadas con el sistema de trazabilidad integrado (SITRAPESCA). 2021: 40 %. 2025: 70 %. 2030: 100 %.
TIMELINE	2021, 2025, 2030

SECTOR	PESCA INDUSTRIAL
OVERALL OBJECTIVES	Fortalecimiento del sistema de cuota de pesca del recurso anchoveta bajo un enfoque ecosistémico.
ACTIVITIES	La medida está orientada a emplear sistemas de modelado de la abundancia y distribución de los stocks de anchoveta en escenarios de cambio climático para fortalecer los protocolos de cálculo para las cuotas de pesca. Dicha medida permitirá regular el nivel de explotación de los recursos en función a las condiciones ambientales vigentes y su impacto en los recursos (positivo o negativo), modulando así la intensidad de las actividades humanas a efecto de conservar los recursos en niveles adecuados. Respecto al alcance geográfico de la medida, esta se desarrolla en el ámbito marino situado en el stock Centro-Norte y stock Sur.
OUTCOMES	Pesquería de anchoveta para el consumo humano indirecto aprovechada de manera sostenible en un escenario de cambio climático.
IMPLEMENTERS	<ul style="list-style-type: none"> - Centros de investigación. - Cooperación internacional. - DGPARPA - Produce. - DGSFSPA - Produce. - DGPCHDI - Produce. - Imarpe.
INDICATORS	% de embarcaciones pesqueras asociadas dedicadas a la extracción del recurso anchoveta para CHI que no excedan la cuota de pesca del recurso anchoveta. 2021: 0 %. 2025: 94 %. 2030: 95 %.
TIMELINE	2021, 2025, 2030

SECTOR	PESCA INDUSTRIAL
OVERALL OBJECTIVES	Fortalecimiento de los sistemas de alerta temprana para respuestas anticipadas ante los eventos climáticos extremos.
ACTIVITIES	La medida está orientada a fortalecer los sistemas de alerta temprana existentes ante eventos climáticos extremos incorporando los escenarios de cambio climático a fin de proveer información preventiva para una adecuada y anticipada toma de decisiones por parte de los pescadores/as del ámbito marítimo. Asimismo, los sistemas de alerta temprana contribuirán a tomar medidas preventivas sobre la pesca y acuicultura (por ejemplo, cambio de artes de pesca, zonas de pesca, seguros climáticos, especies idóneas para el cultivo, entre otros, contribuyendo así a la reducción de la vulnerabilidad de las poblaciones costeras. Respecto al alcance geográfico, la medida se implementa a nivel nacional; tanto en el ámbito marítimo como continental.
OUTCOMES	Agentes de la actividad pesquera y acuícola acceden a servicios de información preventiva para el aprovechamiento sostenible de los recursos hidrobiológicos ante las oportunidades y peligros asociados al cambio climático.
IMPLEMENTERS	<ul style="list-style-type: none"> - DGAAMPA - Produce. - Indeci. - Imarpe- Produce. - DHN - Marina de Guerra. - Senamhi - MINAM. - DGPARPA - Produce. - DGPCHDI - Produce. - GORE. - GOLO.
INDICATORS	N.º de sistemas de alerta temprana para responder anticipadamente ante los eventos climáticos extremos que incorporan el cambio climático articulados a la RNAT. 2021: -. 2025: 2. 2030: 3.
TIMELINE	2021, 2025, 2030

SECTOR	PESCA INDUSTRIAL
OVERALL OBJECTIVES	Implementación de sistemas de alerta temprana para olas de calor marinas, floraciones algales nocivas y eventos sulfurosos como peligros asociados al cambio climático.

ACTIVITIES	La medida está orientada a implementar un sistema de alerta temprana, el cual proveerá información preventiva a los agentes de pesca sobre la ocurrencia de floraciones algales y eventos sulfurosos para la toma de decisiones preventivas y correctivas, como por ejemplo: i) la reubicación de cultivos; ii) el uso de alguicidas; y, iii) la depuración de productos hidrobiológicos, entre otros, contribuyendo a la reducción de la vulnerabilidad ante el cambio climático. Respecto al alcance geográfico, la medida se implementa a nivel nacional, tanto en el ámbito marítimo como continental.
OUTCOMES	Agentes de la actividad pesquera y acuícola acceden a servicios de información preventiva para el aprovechamiento sostenible de los recursos hidrobiológicos ante las oportunidades y peligros asociados al cambio climático.
IMPLEMENTERS	<ul style="list-style-type: none"> - SNP. - Gremios acuicultores. - Universidades. - Imarpe- Produce. - Sanipes- Produce.
INDICATORS	N.º de sistemas de información para olas de calor, floraciones algales nocivas y eventos sulfurosos para responder anticipadamente ante los peligros asociados al cambio climático. 2021: -. 2025: 2. 2030: 3.
TIMELINE	2021, 2025, 2030

SECTOR	PESCA INDUSTRIAL
OVERALL OBJECTIVES	Fortalecimiento del sistema de información de mercado y condiciones oceanográficas en tiempo real.
ACTIVITIES	La medida está orientada a fortalecer el Sistema de Información de Mercados (SIM), de tal forma, que los agentes de la pesca artesanal accedan a información en tiempo real en, y fuera de, los DPA mediante el uso de un aplicativo de internet accesible por el celular. Esta información gira en torno a la distribución de los recursos hidrobiológicos y su influencia en el mercado y las condiciones oceanográficas y climáticas del mar peruano para la planificación anticipada de las faenas pesqueras. Respecto al alcance geográfico, la medida se implementa a nivel nacional; no obstante, en una primera etapa se ha priorizado las regiones ubicadas en el ámbito marino, y en una segunda etapa, las regiones ubicadas en el ámbito continental.
OUTCOMES	Agentes de la actividad pesquera y acuícola acceden a servicios de información preventiva para el aprovechamiento sostenible de los recursos hidrobiológicos ante las oportunidades y peligros asociados al cambio climático.

IMPLEMENTERS	<ul style="list-style-type: none"> - Cooperación internacional. - DGPA - Produce. - Imarpe- Produce. - DIREPRO - GORE. - OGEIEE - Produce. - OGTI - Produce. - DHN – Marina de Guerra del Perú. - Fondepes - Produce.
INDICATORS	N.o de reportes del sistema de información de mercado y condiciones oceanográficas difundidos. 2021: -. 2025: 365. 2030: 1825.
TIMELINE	2021, 2025, 2030
SECTOR	PESCA ARTESANAL
OVERALL OBJECTIVES	Fortalecimiento de capacidades en buenas prácticas de diversificación económica y actividades complementarias para la pesca artesanal.
ACTIVITIES	La medida está orientada a fortalecer las capacidades de los agentes de pesca artesanal en buenas prácticas de diversificación pesquera (conocimiento y aprovechamiento de las especies asociadas al cambio climático y actividades complementarias a la pesca artesanal, como el turismo y la acuicultura) y cadenas de valor (agregado de valor al recurso extraído) tanto en periodos de abundancia como de escasez de los recursos hidrobiológicos ante los peligros asociados al cambio climático. Respecto al alcance geográfico, la medida se implementa a nivel nacional; no obstante, se priorizan las regiones de Piura, Ancash, Lima, Ica y Arequipa.
OUTCOMES	Agentes de la pesca artesanal aplican buenas prácticas pesqueras en un contexto de cambio climático.
IMPLEMENTERS	<ul style="list-style-type: none"> - Pescadores y armadores artesanales. - Cooperación internacional. - OSPA. - Cites Pesqueros - ITP - Produce. - PNIPA. - Sanipes - Produce.

	<ul style="list-style-type: none"> - IIAP - MINAM. - DGPA - Produce. - DIREPRO - GORE - GOLO.
INDICATORS	N o de agentes de la pesca artesanal capacitados en temas de diversificación económica y actividades complementarias bajo escenarios de cambio climático. 2021: 1500. 2025: 2500. 2030: 5000.
TIMELINE	2021, 2025, 2030

SECTOR	PESCA ARTESANAL
OVERALL OBJECTIVES	Fortalecimiento de capacidades en buenas prácticas en la pesca artesanal.
ACTIVITIES	La medida está orientada a fortalecer las capacidades de los agentes de pesca artesanal en la aplicación de buenas prácticas sanitarias que aseguren la inocuidad de los productos hidrobiológicos y permitan el cumplimiento de los requisitos sanitarios y de calidad de mercados. Respecto al alcance geográfico, la medida se implementa a nivel nacional; no obstante, se priorizan las regiones de Piura, Ancash, Lima, Ica y Arequipa.
OUTCOMES	Agentes de la pesca artesanal aplican buenas prácticas pesqueras en un contexto de cambio climático.
IMPLEMENTERS	<ul style="list-style-type: none"> - OSPA. - Pescadores y armadores artesanales. - Cooperación internacional. - Dicapi. - DIREPRO - GORE. - IIAP-MINAM. - GOLO. - SANIPES-Produce. - DGPA - Produce. - DGPCHDI - Produce. - OGEIEE - Produce.

	- Fondepes - Produce.
INDICATORS	N.o de agentes de la pesca artesanal capacitados en buenas prácticas en inocuidad. 2021: 3000. 2025: 6000. 2030: 12 000.
TIMELINE	2021, 2025, 2030

SECTOR	PESCA ARTESANAL
OVERALL OBJECTIVES	Fortalecimiento de capacidades para la utilización de técnicas selectivas de pesca y artes de pesca mejoradas.
ACTIVITIES	La medida está orientada a fortalecer las capacidades de los agentes de pesca artesanal para la utilización de técnicas selectivas de pesca y de artes mejoradas para hacer frente al cambio climático. Respecto al alcance geográfico, la medida se implementa a nivel nacional; no obstante, se priorizan las regiones Piura, Ancash, Lima, Ica y Arequipa.
OUTCOMES	Agentes de la pesca artesanal aplican buenas prácticas pesqueras en un contexto de cambio climático.
IMPLEMENTERS	<ul style="list-style-type: none"> - OSPA. - CiteS Pesqueros - Pescadores y armadores artesanales. - Cooperación internacional. - DIREPRO - GORE. - GOLO. - Fondepes - Produce. - PNIPA - Produce. - Imarpe – Produce. - DGPA - Produce. - DGPARPA - Produce. - Fondepes - Produce.
INDICATORS	N.o agentes de la pesca artesanal capacitados para la utilización de técnicas selectivas de pesca y artes de pesca mejoradas. 2021: 1500. 2025: 3000. 2030: 6000.

TIMELINE	2021, 2025, 2030
SECTOR	PESCA ARTESANAL
OVERALL OBJECTIVES	Ordenamiento de la pesca artesanal marino y continental incorporando el cambio climático.
ACTIVITIES	La medida está orientada a implementar intervenciones orientadas al manejo y a la regulación de los recursos hidrobiológicos que fortalezcan el ordenamiento pesquero artesanal y la sensibilización vinculada a proveer información sobre el estado de vulnerabilidad (biológica, ecológica y social) de los bancos naturales y de los recursos hidrobiológicos de mayor interés comercial ante el cambio climático. Respecto al alcance geográfico, la medida se implementa a nivel nacional; no obstante, se priorizan las regiones colindantes al ámbito marino - costero.
OUTCOMES	Recursos hidrobiológicos para el consumo humano directo regulados para el aprovechamiento sostenible en un contexto de cambio climático.
IMPLEMENTERS	<ul style="list-style-type: none"> - Pescadores y armadores artesanales. - Cooperación internacional. - DGPA - Produce. - DGAAMPA - Produce. - Imarpe - Produce. - DGPARPA - Produce.
INDICATORS	N.o de recursos pesqueros para la pesca artesanal con medida de ordenación pesquera establecida que incorporan el cambio climático. 2021: 4. 2025: 13. 2030: 21.
TIMELINE	2021, 2025, 2030

SECTOR	PESCA ARTESANAL
OVERALL OBJECTIVES	Control, vigilancia y fiscalización de las medidas de ordenamiento, regulación y conservación de los recursos hidrobiológicos para la pesca artesanal.

ACTIVITIES	La medida está orientada a reducir la sobreexplotación de los recursos hidrobiológicos en estado de vulnerabilidad mediante la implementación de acciones de control, vigilancia y fiscalización de la flota pesquera artesanal y de la extracción de los recursos. De esta forma, se podrá garantizar el cumplimiento de las tallas mínimas, las vedas y las normas de protección. Respecto al alcance geográfico, la medida se implementa a nivel nacional; no obstante, se priorizan las regiones colindantes al ámbito marino - costero.
OUTCOMES	Recursos hidrobiológicos para el consumo humano directo regulados para el aprovechamiento sostenible en un contexto de cambio climático.
IMPLEMENTERS	<ul style="list-style-type: none"> - OSPA. - Pescadores y armadores artesanales. - Cooperación internacional. - DGPA - Produce. - DGPARPA - Produce. - DGAAMPA - Produce. - DGSFS - Produce. - DIREPRO - GORE.
INDICATORS	N.o de reportes de control, vigilancia y fiscalización de las medidas de ordenamiento, regulación y conservación difundidas. 2021: 12. 2025: 60. 2030: 120.
TIMELINE	2021, 2025, 2030

ECOSYSTEM SERVICES PRIORITIES

SECTOR	ECOSISTEMAS
OVERALL OBJECTIVES	Implementación de prácticas ancestrales en comunidades campesinas y nativas en el uso sostenible de los bienes y servicios de los ecosistemas para adaptarse a los efectos del cambio climático.
ACTIVITIES	La medida busca la implementación de prácticas ancestrales en adaptación y su correspondiente sistematización y elaboración de guías o lineamientos metodológicos para promover su ejecución en comunidades campesinas y nativas del ámbito de las ANP. Esto se pretende realizar mediante: i) el diagnóstico y análisis de vulnerabilidad de los ecosistemas ante los efectos del cambio climático; ii) la sensibilización y capacitación a las comunidades campesinas y nativas en prácticas ancestrales para adaptación ante el cambio climático; iii) la participación equitativa de hombres y mujeres; y, iv) el seguimiento y monitoreo de la implementación de prácticas ancestrales en comunidades campesinas y nativas.

OUTCOMES	Ecosistemas gestionados con enfoque de paisaje para garantizar la provisión de bienes y servicios de los ecosistemas en un contexto de cambio climático en las ANP del Sinanpe con bosque.
IMPLEMENTERS	<ul style="list-style-type: none"> - Comunidades Nativas. - Sernanp - MINAM. - Midagri. - Mincul. - GORE - GOLO.
INDICATORS	N.o de comunidades campesinas y/o nativas implementan prácticas ancestrales para el uso sostenible de los bienes y servicios de los ecosistemas para adaptarse a los efectos del cambio climático. 2021: 40. 2025: 100. 2030: 150.
TIMELINE	2021, 2025, 2030

SECTOR	ECOSISTEMAS
OVERALL OBJECTIVES	Restauración de ecosistemas en el ámbito del Sistema Nacional de Áreas Naturales Protegidas por el Estado (Sinanpe) para mantener la conectividad del paisaje y reducir los impactos ante los efectos del cambio climático.
ACTIVITIES	La medida busca la restauración de ecosistemas en el ámbito del Sistema Nacional de ANP mediante: i) el diagnóstico de la degradación de los ecosistemas en el ámbito de las ANP; ii) el análisis de los factores de degradación de los ecosistemas, incorporando el análisis de riesgo y vulnerabilidad de ecosistemas ante los efectos del cambio climático en ANP; iii) el mapeo, identificación y priorización de ecosistemas degradados por efectos del cambio climático a restaurar de tal manera que contribuyan a la conectividad de paisajes mayores; y, iv) el monitoreo y evaluación de la implementación de las acciones asociadas a la restauración. Para ello se requiere de programas de educación, sensibilización y concertación con la población involucrada para complementar acciones en el marco de la implementación de las acciones asociadas a restauración de ecosistemas en el ámbito del Sinanpe, incorporando a la población local en los procesos de restauración para involucrarlos en la reducción de los riesgos.
OUTCOMES	Ecosistemas gestionados con enfoque de paisaje para garantizar la provisión de bienes y servicios de los ecosistemas en un contexto de cambio climático en las ANP del Sinanpe con bosque.
IMPLEMENTERS	<ul style="list-style-type: none"> - Comunidades Campesinas y nativas. - Empresas privadas. - Sernanp - MINAM.

	<ul style="list-style-type: none"> - GORE. - GOLO.
INDICATORS	N.o de hectáreas de las ANP del Sinanpe con bosque en proceso de restauración reducen los impactos de los eventos climáticos extremos.
	2021: 4656. 2025: 11 031. 2030: 19 630.
TIMELINE	2021, 2025, 2030

SECTOR	ECOSISTEMAS
OVERALL OBJECTIVES	Implementación de un programa nacional de monitoreo de la dinámica del bosque para medir el impacto del cambio climático y adaptarse a sus efectos.
ACTIVITIES	La medida busca diseñar y planificar el sistema de monitoreo del impacto del cambio climático con el establecimiento de umbrales por tipos de ecosistemas boscosos, mediante: i) el diagnóstico de la situación actual del sistema de monitoreo de parcelas permanentes e identificación de fuentes sostenibles de financiamiento y aliados académicos; ii) la organización y arreglos institucionales con aliados como el Instituto de Investigaciones de la Amazonía Peruana (IIAP), el Jardín Botánico de Missouri (JBM) y la Universidad Nacional Agraria La Molina, para la implementación de la red de parcelas y con Senamhi e IGP para obtener los datos climáticos; iii) la instalación de nuevas parcelas de monitoreo; y, iv) el diseño de una plataforma interinstitucional que contenga información actualizada del sistema de monitoreo, seguimiento y evaluación del funcionamiento del sistema de monitoreo.
OUTCOMES	Ecosistemas gestionados con enfoque de paisaje para garantizar la provisión de bienes y servicios de los ecosistemas en un contexto de cambio climático en las ANP del Sinanpe con bosque.
IMPLEMENTERS	<ul style="list-style-type: none"> - Cooperación Internacional. - Universidades. - MINAM. - PNCBCC - MINAM. - Senamhi - MINAM. - Sernanp - MINAM. - IGP - MINAM. - IIAP- MINAM.
INDICATORS	% de implementación de un programa nacional de monitoreo de la dinámica del bosque para medir el impacto del cambio climático y adaptarse a sus efectos.

	2021: 15 %. 2025: 30 %. 2030: 100 %.
TIMELINE	2021, 2025, 2030

SECTOR	ECOSISTEMAS
OVERALL OBJECTIVES	Implementación de prácticas sostenibles para la conservación de ecosistemas en cuencas hidrográficas del ámbito de las Áreas Naturales Protegidas vulnerables ante los eventos climáticos extremos.
ACTIVITIES	La medida busca la implementación de prácticas de conservación como la formalización para el aprovechamiento de recursos naturales, a través de: i) títulos habilitantes y el seguimiento de prácticas adecuadas para el aprovechamiento de recursos naturales que garantice la no afectación de los ecosistemas y la provisión de sus servicios ecosistémicos; ii) la elaboración de Planes de manejo integral por recurso por cada Área Natural Protegida; iii) el análisis socio - ecológico del impacto del aprovechamiento del recurso en la población y ecosistemas; y, iv) el monitoreo y evaluación de la sostenibilidad.
OUTCOMES	Ecosistemas gestionados con enfoque de paisaje para garantizar la provisión de bienes y servicios de los ecosistemas en un contexto de cambio climático en las ANP del Sinanpe con bosque.
IMPLEMENTERS	<ul style="list-style-type: none"> - Comunidades Locales. - Proyectos de Cooperación. - Sernanp - MINAM. - ANA - Midagri. - AGRORURAL - Midagri. - GORE - GOLO.
INDICATORS	N.o de hectáreas de ecosistemas en cuencas hidrográficas del ámbito de las ANP con prácticas sostenibles de conservación para reducir la vulnerabilidad ante los eventos climáticos extremos. 2021: 186 000. 2025: 242 000. 2030: 312 000.
TIMELINE	2021, 2025, 2030

SECTOR	ECOSISTEMAS
OVERALL OBJECTIVES	Implementación del sistema de vigilancia y control en Áreas Naturales Protegidas para reducir la vulnerabilidad ante los efectos climáticos y no climáticos.
ACTIVITIES	La medida busca la planificación, organización e implementación de las acciones de vigilancia y control en el ámbito de las ANP, mediante: i) el diagnóstico de vulnerabilidad ante las amenazas climáticas y no climáticas para priorizar las zonas de intervención en ANP; ii) la capacitación y asistencia técnica a los miembros de las comunidades locales para que apoyen al Sernanp en las actividades de vigilancia y control de las ANP; iii) la operación y mantenimiento de infraestructura instalada, patrullajes y otras acciones de vigilancia; y, iv) la participación e incorporación de la sociedad civil para la protección de las ANP.
OUTCOMES	Ecosistemas gestionados con enfoque de paisaje para garantizar la provisión de bienes y servicios de los ecosistemas en un contexto de cambio climático en las ANP del Sinanpe con bosque.
IMPLEMENTERS	<ul style="list-style-type: none"> - Comunidades Locales. - Proyectos de Cooperación. - Sernanp - MINAM. - GORE - GOLO. - Serfor - Midagri. - FEMA. - PNP.
INDICATORS	N.o de hectáreas en ANP que implementan acciones de vigilancia y control para reducir la vulnerabilidad ante los efectos climáticos y no climáticos. 2021: 11 673 891,0. 2025: 12 646 715, 6. 2030: 13 619 539,9.
TIMELINE	2021, 2025, 2030

SECTOR	ECOSISTEMAS
OVERALL OBJECTIVES	Implementación de un sistema de vigilancia y control de plagas en bosques naturales y plantaciones forestales con riesgo ante eventos extremos climáticos.
ACTIVITIES	La medida busca implementar un sistema de vigilancia y control de plagas en bosques naturales y plantaciones forestales, mediante: i) el análisis de riesgos de plagas en bosques naturales y plantaciones forestales, considerando escenarios de cambio climático; ii) la

	implementación de un sistema de información operativo y accesible para los productores forestales con el objetivo de reducir los riesgos ante plagas en bosques naturales y plantaciones forestales; iii) la implementación de acciones de manejo integrado de plagas en bosques naturales y plantaciones forestales; y, iv) la evaluación y seguimiento al sistema de vigilancia y control de plagas en bosques naturales y plantaciones forestales con riesgo ante eventos climáticos extremos.
OUTCOMES	Usuario(as) del bosque implementan acciones de manejo integrado de plagas en bosques naturales y plantaciones forestales para reducir los riesgos ante eventos extremos climáticos.
IMPLEMENTERS	<ul style="list-style-type: none"> - Concesionarios Forestales. - Serfor - Midagri. - Senasa - Midagri. - GORE. - IIAP-MINAM. - INIA - Midagri.
INDICATORS	N.o de hectáreas con acciones de vigilancia y control de plagas en bosques naturales y plantaciones forestales con riesgo ante eventos extremos climáticos. 2021: 372. 2025: 816. 2030: 1372.
TIMELINE	2021, 2025, 2030

SECTOR	ECOSISTEMAS
OVERALL OBJECTIVES	Fortalecimiento de procesos de la gestión del riesgo de incendios forestales con enfoque de paisaje en un contexto de cambio climático.
ACTIVITIES	La medida busca identificar los arreglos institucionales a nivel nacional y subnacional para implementar la gestión de riesgo ante incendios forestales a escala de paisaje en las políticas, instrumentos de planificación y legal del gobierno nacional y subnacionales. Ello mediante: i) la elaboración de instrumentos y herramientas para la implementación de acciones integrales a escala de paisaje; ii) la identificación y planificación de acciones de rehabilitación y restauración de socioecosistemas afectados por incendios forestales; iii) la sensibilización y organización de la población para responder a los riesgos ambientales y de origen antrópico; y, iv) la evaluación y el seguimiento de la operatividad del sistema de gestión de riesgo por incendios forestales.
OUTCOMES	Gobierno Nacional, GORE y GOLO, implementan los procesos de la gestión del riesgo con enfoque de paisaje para reducir los incendios forestales en un contexto de cambio climático.

IMPLEMENTERS	<ul style="list-style-type: none"> - Universidades - Serfor - Midagri. - Sernanp - MINAM. - PNCBMCC - MINAM. - Cenepred. - Indeci. - GORE. - Senamhi - MINAM. - PCM.
INDICATORS	% de disminución de la superficie de cobertura vegetal impactada por incendios forestales en un contexto de cambio climático. 2021: 95 %. 2025: 75 %. 2030: 50 %.
TIMELINE	2021, 2025, 2030

SECTOR	SOCIEDAD
OVERALL OBJECTIVES	Implementación de acciones de control, vigilancia y fiscalización, para reducir la vulnerabilidad ante los efectos climáticos y no climáticos.
ACTIVITIES	La medida busca implementar un sistema de información operativo para ayudar en las acciones de control y vigilancia de bosques, priorizando acciones en áreas con mayor vulnerabilidad ante los efectos del cambio climático. Ello mediante: i) la elaboración de protocolos y/o marcos para el control, vigilancia y fiscalización de los bosques; ii) la conformación de las mesas regionales para implementar acciones de control y vigilancia; iii) la implementación de acciones de control in-situ como control permanente mediante vigilancia, monitoreo e intervención respecto del patrimonio que comprendan, la realización de visitas de evaluación de acciones requeridas a fin de garantizar la reposición del patrimonio forestal y de fauna silvestre, recoger información de recuperación natural y la implementación de acciones de prevención o control contra la caza furtiva, comercio ilegal, etc; iv) la evaluación del sistema de control, vigilancia y fiscalización de bosques; v) la sensibilización de la población local respecto de los impactos que ocasiona la sobre explotación de los recursos provenientes del bosque y su repercusión en la disminución de los servicios ambientales que podrían recibir de bosques sosteniblemente manejados; y, vi) la identificación de líderes comunales comprometidos con la conservación y uso sostenible de los bosques, que contribuyan con la vigilancia comunal.
OUTCOMES	Áreas forestales conservadas y recuperadas cuentan con un adecuado manejo forestal y de fauna silvestre, reducen los riesgos ante los efectos del cambio climático y garantizan los servicios ecosistémicos de ecosistemas forestales y otros de vegetación silvestre.

IMPLEMENTERS	<ul style="list-style-type: none"> - Comunidades Locales. - Serfor. - OSINFOR. - PNP. - FEMA. - GORE. - DICAPE.
INDICATORS	% de cobertura de bosques que implementan acciones de control, vigilancia y fiscalización para reducir la vulnerabilidad ante los efectos climáticos y no climáticos. 2021: 50 %. 2025: 70 %. 2030: 100 %.
TIMELINE	2021, 2025, 2030

SECTOR	SOCIEDAD
OVERALL OBJECTIVES	Implementación de opciones de restauración de ecosistemas forestales y otros ecosistemas de vegetación silvestre para garantizar la funcionalidad del paisaje, servicios ecosistémicos y reducir los riesgos ante los efectos del cambio climático.
ACTIVITIES	La medida pretende mapear e identificar áreas, ecosistemas o paisajes degradados a fin de evaluar las oportunidades de restauración. Ello mediante: i) el diagnóstico de la degradación de los ecosistemas y análisis de vulnerabilidad de los ecosistemas ante los efectos del cambio climático; ii) la identificación del ecosistema de referencia; para caracterizarlos de acuerdo a su composición, estructura, funcionalidad y servicios ecosistémicos; iii) la concertación con actores involucrados; y, iv) el diseño e implementación de acciones asociadas a la restauración con la participación de todos los actores claves, principalmente los tomadores de decisiones, a fin de garantizar la efectividad de la misma.
OUTCOMES	Áreas forestales conservadas y recuperadas cuentan con un adecuado manejo forestal y de fauna silvestre, reducen los riesgos ante los efectos del cambio climático y garantizan los servicios ecosistémicos de ecosistemas forestales y otros de vegetación silvestre.
IMPLEMENTERS	<ul style="list-style-type: none"> - Empresas de distribución eléctricas. - Minem. - GORE. - GOLO.
INDICATORS	N.o de hectáreas en proceso de restauración de ecosistemas forestales y otros ecosistemas de vegetación silvestre para mantener la funcionalidad del paisaje y reducir los riesgos ante los efectos del cambio climático.

	2021: 4240. 2025: 21 200. 2030: 42 400.
TIMELINE	2021, 2025, 2030
SECTOR	SOCIEDAD
OVERALL OBJECTIVES	Fortalecer el uso de tecnologías por parte de los productores(as) forestales y manejadores(as) de fauna, que contribuyan al manejo y aprovechamiento sostenible de los bosques, reduciendo la vulnerabilidad de los mismos frente a los efectos del cambio climático.
ACTIVITIES	La medida pretende fortalecer el uso de tecnologías existentes en el manejo y aprovechamiento sostenible de los bosques, y del potencial de los recursos aprovechables. Esto a través de: i) la identificación de brechas sobre conocimiento de tecnologías de manejo y aprovechamiento sostenible de los bosques; ii) el desarrollo de investigación para formular nuevos paquetes tecnológicos sobre potenciales recursos existentes, que incluyan el manejo y aprovechamiento sostenible de los bosques, así como la condición de cambio climático; iii) el desarrollo de módulos de capacitación con paquetes tecnológicos en manejo y aprovechamiento sostenible de los bosques; y, iv) la evaluación y seguimiento in-situ, de los avances en el fortalecimiento de capacidades a los productores forestales y manejadores de fauna en el uso de tecnologías para el manejo y aprovechamiento sostenible de los bosques.
OUTCOMES	Áreas forestales conservadas y recuperadas cuentan con un adecuado manejo forestal y de fauna silvestre, reducen los riesgos ante los efectos del cambio climático y garantizan los servicios ecosistémicos de ecosistemas forestales y otros de vegetación silvestre.
IMPLEMENTERS	<ul style="list-style-type: none"> - Serfor - Midagri. - INIA - Midagri. - IIAP - MINAM. - GORE.
INDICATORS	N.o de usuarios(as) fortalecen capacidades en uso de tecnologías apropiadas para el manejo y aprovechamiento sostenible de los bosques ante los efectos del cambio climático. 2021: 12 865. 2025: 64 326. 2030: 128 654.
TIMELINE	2021, 2025, 2030

HEALTH PRIORITIES

SECTOR	POBLACIÓN
OVERALL OBJECTIVES	Implementación de acciones de planificación e inversión en gestión del riesgo asociado al cambio climático.
ACTIVITIES	La medida está orientada a integrar aspectos relacionados a la adaptación al cambio climático en la formulación, actualización, implementación y/o monitoreo de los diversos instrumentos y/o herramientas que rigen el accionar del sector, a fin de que se incluyan los riesgos asociados al cambio climático en la salud pública, y a la vez, se prioricen intervenciones sostenibles y para beneficio de las poblaciones vulnerables a corto, mediano y largo plazo. Respecto al alcance geográfico, la medida se implementa en la ciudad de Lima a nivel de los órganos de línea, los órganos de apoyo, los órganos de asesoramiento y los órganos desconcentrados del Minsa.
OUTCOMES	Gestión del riesgo en un contexto de cambio climático en la planificación e inversión sectorial para el desarrollo sostenible en la salud pública.
IMPLEMENTERS	- DGPNSP - Minsa. - OGPPM - Minsa.
INDICATORS	N.o de unidades orgánicas con capacidad en gestión del riesgo en un contexto de cambio climático en la planificación e inversión en la salud pública. 2021: 2. 2025: 4. 2030: 8.
TIMELINE	2021, 2025, 2030

SECTOR	POBLACIÓN
OVERALL OBJECTIVES	Acceso a fuentes de financiamiento para la salud pública para gestión del riesgo asociado al cambio climático.
ACTIVITIES	La medida está orientada a acceder, optimizar y/o priorizar diversos mecanismos de financiamiento que permitan al sector a través de sus diferentes unidades orgánicas y desconcentradas, implementar las condiciones habilitantes y las medidas de adaptación al cambio climático. Respecto al alcance geográfico, la medida se implementa a nivel de la Gerencia Regional de Salud de La Libertad, las Direcciones Regionales de Salud de Lima, Ayacucho, Huancavelica, Loreto, Pasco, Piura, Puno y Tumbes, la Dirección Regional de Salud Sub Región de Bagua y las Direcciones de Redes Integradas de Salud.

OUTCOMES	Gestión del riesgo en un contexto de cambio climático en la planificación e inversión sectorial para el desarrollo sostenible en la salud pública.
IMPLEMENTERS	- OGPPM - Minsa. - OGCAI - Minsa. - Diresa. - Geresá.
INDICATORS	N.o de instituciones del sector salud que acceden a fuentes de financiamiento para reducir los riesgos en un contexto de cambio climático. 2021: 1. 2025: 3. 2030: 5.
TIMELINE	2021, 2025, 2030

SECTOR	POBLACIÓN
OVERALL OBJECTIVES	Fortalecimiento de los Sistemas de Alerta en Salud Pública para la gestión del riesgo asociado al cambio climático.
ACTIVITIES	La medida está orientada a fortalecer los sistemas de vigilancia epidemiológica y ambiental, a través de la vinculación de la información epidemiológica con los escenarios climáticos para el monitoreo y vigilancia de los efectos del cambio climático en la salud pública, así como para la toma de decisiones relacionadas a acciones de prevención y preparación ante situaciones de enfermedades. Respecto al alcance geográfico, la medida se implementa a nivel nacional a un total de 9 039 establecimientos de salud, de los cuales 175 son hospitales, 1504 son centros de salud, 6358 son puestos de salud, 248 son institutos privados y 754 son otros, los cuales forman parte de Renace.
OUTCOMES	Establecimientos de salud del Minsa utilizan información sobre escenarios climáticos en vigilancia epidemiológica y sanitaria para la gestión del riesgo en un contexto de cambio climático en la salud pública.
IMPLEMENTERS	- CDC - INS. - Renace.
INDICATORS	N.o de reportes del sistema de vigilancia sobre enfermedades asociadas al cambio climático difundidos. 2021: 4. 2025: 20. 2030: 40.
TIMELINE	2021, 2025, 2030

SECTOR	POBLACIÓN
OVERALL OBJECTIVES	Transferencia de prácticas saludables ante el incremento de enfermedades vectoriales relacionadas a los efectos del cambio climático.
ACTIVITIES	La medida está orientada a fortalecer la capacidad de adaptación de las poblaciones vulnerables a través de la transferencia de conocimientos y capacidades relacionadas a la preparación, control y adopción de prácticas saludables de acuerdo a la proliferación y distribución geográfica esperada de enfermedades vectoriales asociadas al cambio climático. Respecto al alcance geográfico, en el caso del dengue, la medida se implementaría en regiones endémicas priorizadas: Piura, La Libertad, Ica, Tumbes y Lambayeque. Mientras que, en el caso de la malaria, la medida se implementa en las regiones endémicas priorizadas: Loreto, Junín, Cusco y San Martín.
OUTCOMES	Poblaciones vulnerables adoptan prácticas saludables ante el incremento de enfermedades transmitidas por vectores por efectos del cambio climático.
IMPLEMENTERS	<ul style="list-style-type: none"> - DGPROM - Minsa. - Digesa - Minsa. - DGE - Minsa. - Diresa - GORE. - Geresas - GORE.
INDICATORS	N.o de familias que desarrollan prácticas saludables ante el incremento de enfermedades transmitidas por vectores. 2021: 20 000. 2025: 30 000. 2030: 40 000.
TIMELINE	2021, 2025, 2030

SECTOR	POBLACIÓN
OVERALL OBJECTIVES	Transferencia de prácticas saludables a la población vulnerable ante el incremento de enfermedades por alimentos contaminados y agua por efectos del cambio climático.
ACTIVITIES	La medida está orientada a fortalecer la capacidad de adaptación de las poblaciones vulnerables a través de la transferencia de conocimientos y capacidades relacionadas a la preparación, control y adopción de prácticas saludables que permitan asegurar la provisión de agua de calidad y la inocuidad de los alimentos por efectos del cambio climático. Respecto al alcance geográfico, la

	medida se implementa en las regiones de Piura, La Libertad, Ica, Lambayeque, Junín, Cusco, San Martín, Loreto, Ucayali y Tumbes, debido a que presentan los mayores casos de incidencia de las enfermedades diarreicas agudas.
OUTCOMES	Poblaciones vulnerables adoptan prácticas saludables ante el incremento de enfermedades transmitidas por alimentos y agua por efectos del cambio climático.
IMPLEMENTERS	<ul style="list-style-type: none"> - DGE - Minsa. - Digesa - Minsa. - DPROM - Minsa. - Geres - GORE. - Diresa - GORE.
INDICATORS	N.o de familias que desarrollan prácticas saludables ante el incremento de enfermedades transmitidas por alimentos contaminados y agua. 2021: 69 000. 2025: 138 000. 2030: 200 000.
TIMELINE	2021, 2025, 2030

SECTOR	POBLACIÓN
OVERALL OBJECTIVES	Transferencia de prácticas saludables ante la exposición a temperaturas extremas provocadas por efectos del cambio climático.
ACTIVITIES	La medida está orientada a fortalecer la capacidad de adaptación de las poblaciones vulnerables a través de la transferencia de conocimientos y capacidades relacionadas a la preparación, control y adopción de prácticas saludables que permitan la reducción del nivel de riesgo ante la temporada de altas y bajas temperaturas. Respecto al alcance geográfico, la medida se implementa en las regiones de Cusco, Huancavelica, Puno, Pasco, Junín, Apurímac, Arequipa, Ayacucho, Huánuco, Moquegua y Tacna, las cuales presentan mayores casos de este tipo de enfermedades respiratorias agudas.
OUTCOMES	Poblaciones vulnerables adoptan prácticas saludables ante la exposición a temperaturas extremas provocadas por efectos del cambio climático.
IMPLEMENTERS	<ul style="list-style-type: none"> - DIGERD - Minsa. - DPROM - Minsa. - Geres - GORE. - Diresa - GORE.

INDICATORS	N.o de familias que desarrollan prácticas saludables ante la exposición a temperaturas extremas. 2021: 45 000. 2025: 45 000. 2030: 45 000.
TIMELINE	2021, 2025, 2030

SECTOR	POBLACIÓN
OVERALL OBJECTIVES	Fortalecimiento de las acciones de información y difusión de prácticas saludables ante riesgos asociados al cambio climático en la salud pública.
ACTIVITIES	La medida está orientada a empoderar, sensibilizar y educar a la población vulnerable a través del acceso y difusión de información asociados a los impactos y efectos del cambio climático en la salud pública a fin de que adopte prácticas saludables que contribuyan con la adaptación al cambio climático. Respecto al alcance geográfico, la medida se implementa en las regiones de Lima, Piura, La Libertad, Cajamarca, Puno, Arequipa, Lambayeque, Junín y Cusco.
OUTCOMES	Población vulnerable sensibilizada sobre prácticas saludables ante riesgos asociados al cambio climático.
IMPLEMENTERS	<ul style="list-style-type: none"> - DPROM – Minsa. - DIGERD - Minsa. - DIGIESP - Minsa. - Geresá - GORE. - Diresa - GORE.
INDICATORS	N.o de acciones de información y difusión sobre prácticas saludables desarrolladas. 2021: 10. 2025: 10. 2030: 10.
TIMELINE	2021, 2025, 2030

SECTOR	SERVICIOS DE SALUD
OVERALL OBJECTIVES	Implementación de acciones de respuesta en los servicios de salud vulnerables ante la ocurrencia de peligros asociados al cambio climático.

ACTIVITIES	La medida está orientada a implementar acciones relacionadas a: i) la dotación de personal especializado; ii) el suministro de medicamentos; iii) la instalación de un sistema de atención móvil; iv) el mantenimiento de los establecimientos de salud; y, v) la provisión de servicios básicos, ante la posible ocurrencia de eventos climáticos extremos. Estas acciones permitirán que los establecimientos atiendan oportuna y adecuadamente las necesidades de prevención, control y atención médica de las poblaciones vulnerables, tanto urbanas como rurales. Respecto al alcance geográfico, la medida se implementa a nivel nacional; no obstante, se han priorizado las regiones de La Libertad, Lima, Loreto, Lambayeque, Piura, Tumbes, Cajamarca, Ica y Ancash, debido a que son zonas con mayor recurrencia de peligros asociados al cambio climático.
OUTCOMES	Servicios de salud vulnerables mejoran su capacidad de prevención, preparación y respuesta ante la ocurrencia de peligros asociados al cambio climático.
IMPLEMENTERS	<ul style="list-style-type: none"> - DIGERD - Minsa. - Geresá - GORE. - Diresa - GORE. - Redes de Salud. - Pronis - Minsa. - OGPMI - Minsa.
INDICATORS	N.o de servicios de salud vulnerables que implementan acciones de prevención, reducción, preparación y respuesta ante la ocurrencia de peligros asociados al cambio climático. 2021: 5. 2025: 13. 2030: 27.
TIMELINE	2021, 2025, 2030

SECTOR	SERVICIOS DE SALUD
OVERALL OBJECTIVES	Implementación de acciones para el funcionamiento y la operatividad de los servicios de salud ante la ocurrencia de peligros asociados al cambio climático.
ACTIVITIES	La medida está orientada a implementar acciones correspondientes a: i) la limpieza y el mantenimiento de los sistemas de drenaje; ii) el mejoramiento de la infraestructura crítica; iii) el mantenimiento de los servicios de agua y energía; iv) el desarrollo de simulacros; v) la planificación para el desplazamiento hacia lugares de refugio con las condiciones sanitarias mínimas durante las emergencias; vi) el desarrollo de acciones de vigilancia, prevención y control; y, vii) la planificación para la instalación de módulos de atención y hospitales de campaña. Estas acciones permitirán garantizar el funcionamiento y la operatividad de los servicios de salud ante la ocurrencia de peligros asociados al cambio climático. Respecto al alcance geográfico, la medida se implementa a nivel nacional; no obstante, se han

	priorizado las regiones de La Libertad, Lima, Loreto, Lambayeque, Piura, Tumbes, Cajamarca, Ica y Ancash, debido a que son zonas con mayor recurrencia de peligros asociados al cambio climático.
OUTCOMES	Servicios de salud vulnerables mejoran su capacidad de prevención, preparación y respuesta ante la ocurrencia de peligros asociados al cambio climático.
IMPLEMENTERS	<ul style="list-style-type: none"> - DIGERD - Minsa. - Geresá - GORE. - Diresa - GORE. - DGIEM - Minsa. - Redes de salud. - Indeci.
INDICATORS	N.o de servicios de salud vulnerables que implementan medidas para el funcionamiento y operatividad ante la ocurrencia de peligros asociados al cambio climático. 2021: 5. 2025: 13. 2030: 27.
TIMELINE	2021, 2025, 2030

SECTOR	SERVICIOS DE SALUD
OVERALL OBJECTIVES	Acceso a mecanismos de financiamiento en salud para garantizar la continuidad de la atención a la población vulnerable ante la ocurrencia de peligros asociados al cambio climático.
ACTIVITIES	La medida está orientada a establecer arreglos institucionales a nivel sectorial a fin de identificar, canalizar y acceder a diferentes mecanismos de financiamiento que permitan la implementación de las medidas de adaptación al cambio climático.
OUTCOMES	Servicios de salud mejoran el acceso a la cobertura y atención a la población vulnerable ante la ocurrencia de peligros asociados al cambio climático.
IMPLEMENTERS	<ul style="list-style-type: none"> - Pronis- Minsa. - Geresá - GORE. - Diresa - GORE. - OGPPM - Minsa.
INDICATORS	N.o de servicios de salud que implementan mecanismos financieros para garantizar la continuidad de la atención a la población vulnerable. 2021: 7. 2025: 23. 2030: 47.

TIMELINE

2021, 2025, 2030

SAINT LUCIA

WATER RESOURCES PRIORITIES

SECTOR	OUTCOMES	OBJECTIVE	ACTIVITIES	INDICATORS	COSTS
Water resources	Enhanced enabling environment and improved behavior for water-related climate adaptation action	Improve the national policy, legal and regulatory framework to facilitate climate adaptation in the water and water-dependent sectors	Develop a new 20-year Integrated Water Resources Management Strategy for Saint Lucia (incorporating water conservation and allocation strategies and climate change and other priorities in the Water SASAP).	New 20-year Water Resources Management Strategy for Saint Lucia formulated, integrating climate change considerations and including water conservation and allocation strategies as defined in the Water SASAP).	n/a
			Revise development standards / guidelines and integrate climate adaptation considerations for the water sector (“make them climate-smart” e.g. river/ravine buffers; requirements for open spaces and conservation reserves).	Development standards/guidelines revised and including climate change adaptation considerations.	
			Revise the current Water, land and other policies to address climate change challenges and integrate coherently climate adaptation considerations.	Water, Land and other policies (which may affect water resources or their management) revised and addressing both, climate change challenges and climate adaptation considerations.	
			Revise government policy on water conservation incentives and water price controls to increase water use efficiency.	Government policy on water conservation incentives and water price controls to increase water use efficiency revised, approved and enforced	

		Scale-up national human capacity for the design and implementation of water-related climate adaptation projects	Establish human resource and training expertise in NGOs and CBOs to support natural resource management, and water quality monitoring.	Training workshops, courses and hands-on learning activities for NGOs and CSOs to support government-led and other water resource management and water monitoring activities.	
		Increase public awareness to integrated water resource management	Design and implement a communications strategy for raising awareness and sparking action on integrated water resource management under a changing climate at all levels of the Saint Lucian Society.	Communications and awareness raising strategy to raise public awareness on integrated water resource management, including integrated watershed management, water efficiency, wastewater management and other relevant thematic areas designed, in alignment with the Climate Change Communications Strategy (2018), funded, implemented and reaching all levels of the Saint Lucian Society.	
Increased water access, availability and quality	Strengthen integrated watershed management to build climate resilience	Conduct a Feasibility Study to establish river usage zoning to reduce water use conflicts and secure the integrity of river water quality.	Feasibility study establishing river usage zoning.		
		Undertake a comprehensive study of the 37 watersheds and all water resources in Saint Lucia to develop a comprehensive water resources database, hydrological models and a reporting system.	Study report of Saint Lucia's water resources including all relevant information on the country's watersheds. Water resources database Reporting system		
		Improve riverbank management and water quality by introducing and maintaining riparian buffer zones/strips and/or selectively re-introducing river reserves	Riparian buffer zones introduced and maintained. River reserves introduced.		

			State acquisition and maintenance of private water catchments and intact natural forests	Plan for State acquisition of private water catchments and intact natural forests formulated, including funding mechanisms for its implementation. Plan implementation initiated. Private water catchments and natural forests purchased by the state and maintained	
			Expand reforestation programmes, prioritising the reforestation of critical watersheds (with selection of appropriate mixes of species for reforestation/ afforestation where needed)	New or expanded existing reforestation programmes in critical watersheds implemented and or planned	
			Adopt forest management plans to reduce and control soil erosion, sedimentation of water sources and to minimise the risk of landslides	Forest management plans in place and implemented	
			Identify new and expand sustainable forest-based livelihood opportunities for securing forest cover and ecosystem health	Study on sustainable forest livelihoods for Saint Lucia, identifying marketable products (including non-timber forest products) and services (e.g. eco-tourism), value chain and market analyses. Training on the identified sustainable forest livelihoods for beneficiaries	
			Activate or reactivate Community-based Organisations for integrated watershed / natural resource management	CBOs mobilised, informed and trained on sustainable natural resource management practices (including	

			Phase out inappropriate activities (for example agricultural, commercial, industrial, domestic, etc.) which compromise water quality and take place adjacent to water sources.	sustainable land management practices). Mechanisms to phase out activities which compromise water quality and take place next to water sources	
			Mobilise communities to implement sustainable land use practices in water catchments.	identified and agreed with CBOs and communities. Mobilised CBOs actively participate in designing and planning natural resource management and sustainable land use projects in their watersheds CBOs mobilise watershed communities to implement sustainable natural resource management projects and to adopt sustainable land management practices in water catchments.	
			Continue/accelerate the selective relocation of water intakes	Water intakes relocated to suitable areas, taking into consideration climate change and land/agricultural use (pollution)-related risks.	
			Use engineering measures for river bank and channel protection, where necessary	Technical feasibility study identifying priority areas for engineering solutions to flooding along river banks and channels. Implementation of engineering solutions in identified priority areas.	
			Review the National Land Use Plan to ensure that it: a) addresses watershed degradation, saline intrusion, sea level rise and groundwater use and, b) encourages a well-planned intensive use of land vs. the lateral spread of	National Land Use Plan reviewed and addressing watershed degradation, saline intrusion, sea level rise and groundwater and providing guidance on the intensive use of land for development.	

			development, to secure increased land availability for conservation purposes	Execution of the Revised National Land Use Plan.	
	Promote the sustainable use of alternative water resources to ensure water availability under a changing climate		Promote the use of communal Rain Water Harvesting (RWH) and storage systems for non-potable uses and the retrofitting of private homes and domestic/commercial buildings to include rain water harvesting and storage	Public campaigns to raise awareness of the benefits of RWH systems. Training on RWH system construction and maintenance delivered to CBOs and other interested community representatives. Public buildings retrofitted (including RWH and water storage systems) and used as demonstration projects/sites	
			Expand storage capacity through the strategic placement of bulk water storage tanks (rainwater and potable water)	Strategic locations for the installation of bulk water storage tanks across the island identified. Installation of bulk water storage tanks initiated.	
			Raise awareness and develop/extend training on the correct maintenance of private water storage	Training delivered to technical officers, local government officials, CBOs and suppliers on the correct maintenance of private water storage	
			Test and implement approaches for enhancing water availability, such as dam and reservoir establishment/construction in the south (Troumassee River), desalination plants, micro-dams and the establishment of satellite water storage tanks within the forest reserve to feed rural communities	Pilot projects to test alternative water sources, storm water management and re-use systems designed, funded, implemented and evaluated in terms of effectiveness, applicability, cost-effectiveness and scalability	
			Continue groundwater resource mapping and exploration for use	New groundwater exploration for use project designed and funded.	

		<p>Improve wastewater management to reduce pollution and increase water availability under a changing climate</p>	<p>Extend Public Sanitation Programmes and improve/upgrade sanitation facilities in vulnerable communities/poor households</p>	<p>Sanitation facilities in vulnerable communities upgraded.</p>	
			<p>Revise current regulations to ensure that connections are made to the central sewer where possible and that the construction and maintenance of private septic tanks is appropriate. Develop mechanisms for the enforcement of regulations and establish training sessions (in conjunction with the Police) for the training of enforcement officers</p>	<p>Regulations revised, and enforcement mechanisms formulated and approved. Training sessions on the regulations and their enforcement mechanisms delivered to enforcement officers.</p>	
			<p>Conduct a Feasibility Study to determine the infrastructural requirements for tertiary level municipal sewage treatment facilities to cover the island's needs.</p>	<p>Feasibility study conducted to determine the infrastructural requirements for tertiary level municipal sewage treatment facilities to cover the island's needs.</p>	
			<p>Raise awareness and develop training on the correct use of grey water</p>	<p>Training sessions on the correct use of greywater delivered to local government officials, CBOs, community leaders and industry representatives.</p>	
			<p>Install new, upgrade and extend existing waste water treatment facilities</p>	<p>Plan for installing new and upgrading existing wastewater treatment facilities. Feasibility studies and Environmental Impact Assessments (EIAs) for the installation of new wastewater treatment facilities. Existing wastewater treatment facilities</p>	

				<p>upgraded. New wastewater treatment facilities designed</p>	
			Upgrade EIA for tourism waste water plants to include hazard risk assessments and vulnerability analyses	EIAs updated and integrating hazard risk assessments and vulnerability assessments (including climate change risk and vulnerability considerations).	
		Set and scale-up water quality and pollution control in a changing climate	Develop and enforce potable water quality standards	Potable water quality standards developed and approved. Standard enforcement mechanisms formulated and implemented.	
			Build capacity for water quality monitoring by improving and staffing the Water Resources Monitoring Programme to identify yield and water quality issues in each supply area and by reestablishing the Water Testing Laboratory	<p>Plan for strengthening water resource monitoring in Saint Lucia formulated and including: a) an analysis of existing technical, financial, infrastructural (equipment) and logistical and limitations in the Water Resource Monitoring Program; b) an analysis of the cost-effectiveness of re-establishing the Water Testing Laboratory vs. other alternatives; and c) implementation mechanisms (including funding sources) and timeline for action.</p> <p>Capacity building activities to strengthen the identified technical weaknesses in water monitoring delivered.</p>	
			Implement waste-to energy projects to increase the availability of non-polluted water (through reduction in water pollution/contamination by	Proposal for implementing waste-to energy pilot projects designed and submitted for funding. Pilot projects undertaken	

			liquid/organic waste) and to reduce the compounded effects of flooding by solid waste		
			Develop guidelines for the handling, transportation and storage of chemicals and chemical waste; managing accidents and spills; and the use and disposal of chemicals in order to safeguard water resources	Guidelines for the handling, transportation and storage of chemicals and chemical waste; managing accidents and spills; and the use and disposal of chemicals.	
			Conduct an assessment of hazardous chemical storage facilities of the Saint Lucia Air and Sea Ports Authority (SLASPA) with options for improvement of storage infrastructure	Assessment conducted, taking into consideration climate change concerns and report produced, including a plan for enhancing climate resilience and improving inadequate storage infrastructure	
Increase water efficiency and conservation	Improve water infrastructure to build climate resilience		Facilitate investment and invest in major water system infrastructural upgrades, including the construction of new pipelines to reduce water loss	A comprehensive assessment of all water system infrastructure upgrades and extension required across Saint Lucia conducted. The assessment should: a) analyse current and projected future demand and place emphasis on interventions required in areas lacking individual connections and in areas with significant leaks; b) integrate climate change considerations and recommendations based on climate change projections (climate proofing of existing and new water infrastructure); c) include a Plan of Action (including water infrastructure improvements and extension, leak	
			Increase customer base with individual connection and reduce standpipes and communal supplies		
			Improve leak detection and alleviation to reduce losses including an improvement of WASCO's operational plans and institutional capacity to reduce line losses.		
			Install water meters for all consumers (bulk and low volume)		

				<p>control measures -meter installation and capacity building for leak detection- and improvement of WASCO's operational plans); d) provide a budget and potential (national and international) funding sources for the Plan's (full or partial) execution. The assessment report and Plan of action is considered in national budgets, and additional funding is secured to start and advance the Plan's implementation. Priority infrastructural interventions undertaken. WASCO's Operational Plans updated and under execution. Meters purchased and installed Capacity building activities for reducing leaks undertaken. Customer base with individual connection increased. Standpipes and communal supplies reduced. Leaks reduced.</p>	
			Conduct water audit of government buildings and government occupied buildings to determine where there are high leakages/wastage	<p>Audit performed. Key public and community buildings retrofitted and used as demonstration sites.</p>	
		Encourage water efficiency under a changing climate by improving water	Design and implement an adequate water and wastewater tariff system (adjusting rates to accurately reflect costs of water supply)	<p>Study analysing Saint Lucia's water service tariff and revenue collection system. The study should consider current and forecasted demand and</p>	

		pricing, water utility revenue and water conservation incentives	Implement dry season premium water charge for excessive use of water	water supply and treatment costs (including climate change-related variation in demand and costs). The study should propose adequate adjustments to the water and wastewater tariff system, including the potential adjustment of dry season charges and provide recommendations on a more effective revenue collection system. Adjusted water and wastewater tariff and revenue collection systems approved and implemented.	
			Establish water conservation incentives for private and community-based water conservation programmes	Most effective water conservation incentives for private and communitybased conservation programmes identified and approved. Incentive system established implemented.	
		Promote climate smart agriculture	Document best practices in dryland agriculture in the Caribbean	Comprehensive document on Caribbean dryland and climate-smart agriculture prepared. The document reviews soil and water conservation measures, includes case studies and offers crop production recommendations for Saint Lucia, considering climate change projections.	
			Change management practices such as planting dates to compensate for crop /water cycle modifications	Climate-smart agricultural practices tested and adopted.	
			Improve farm drainage infrastructure, cultivation and harvesting practices to	A programme for improving farm drainage infrastructure and	

			<p>reduce impacts of soil water stress during heavy precipitation periods</p> <p>Extend drip irrigation use and develop irrigation networks that allow for the recycling of waste water</p> <p>Extend the use of soil and water conservation measures (mulching, appropriate terracing, etc.) to reduce water losses and erosion</p>	<p>developing climate-smart irrigation systems (allowing for the recycling of wastewater) is designed and submitted for funding. Pilot testing of soil and water conservation and water-efficient agricultural practices in demonstration plots takes place. Farmer field schools design and offer training on climate-smart agricultural practices to farmers, using the demonstration plots and in an ongoing basis</p>	
Strengthened preparedness to climate variability and extremes	Improve hydrometeorological monitoring, emergency planning and decision making	Undertake country-wide hazard mapping (flooding, drought, wildfires, landslides, digital elevation modelling) to inform land use and infrastructure development planning	Multi-hazard risk maps for Saint Lucia developed and in use		
		Enhance existing monitoring/alert networks on sea level rise through effective training and outreach mechanisms	Capacity building programme for improving sea-level rise monitoring and alert networks designed and delivered.		
		Continue expanding the network of automatic rainfall stations and stream gauges with data loggers to remotely transmit readings to a central office and improve early warning systems	Automatic rainfall stations and stream gauges with data loggers installed and transmitting readings to a central office. Existing early warning systems adjusted accordingly.		

			Identify and acquire appropriate predictive rainfall and flood (coastal and inland) models and provide in-depth training and capacity building on their use and analysis complementary to, and beyond, the Hydromet Rehabilitation component of the Disaster Vulnerability Reduction Project (DVRP)	Adequate flood and rainfall predictive models for Saint Lucia acquired. Training on the use of the models and the analysis of derived data delivered to Meteorology Office staff.	
			Train staff in GIS, satellite image analysis, meteorological data analysis, predictive analysis, and use of satellite and remote sensed data and systems	Comprehensive capacity building programme designed for technical officers of relevant ministries and departments. Capacity building programme delivered.	
	Minimise water-related climate change risks by adopting ecosystem-based adaptation solutions	Maintain existing vegetative buffers – mangroves, coastal vegetation, river banks - through regulations and enforcement	Protect wetland ecosystems, most of which are coastal and have been targeted as landfill sites or earmarked for development	Wetlands and main vegetative buffers along riverbanks and coasts are protected and restored through regulations and enforcement.	
	Promote climate resilient business development	Encourage the development of business continuity plans (including water supply considerations) for dealing with the impacts of climate change through the creation of certification schemes for businesses that have implemented business continuity measures	Encourage the development of business continuity plans (including water supply considerations) for dealing with the impacts of climate change through the creation of certification schemes for businesses that have implemented business continuity measures	Certification schemes designed and implemented. Meetings held with private sector associations and leaders to inform them about the schemes.	

AGRICULTURE PRIORITIES

SECTOR	OUTCOMES	OBJECTIVE	ACTIVITIES	INDICATORS	COSTS
Agriculture	Enhanced enabling environment for climate adaptation action in the agriculture sector	Improve the national policy, legal and regulatory framework to facilitate climate adaptation in the agriculture sector	Integrate SLR and land use strategies into the Agriculture Policy Framework and Strategy (2016 to 2021).	Assessment study on expected sea-level rise impacts and associated land use strategies for Saint Lucia conducted and used to inform appropriate changes to the draft Agriculture Policy Framework and Strategy SLR and land use strategies incorporated into the Agriculture policy and Strategy	n/a
			Implement Land Policy to enable land zoning to safeguard quality agricultural lands and identify lands best suited for the production of specific crops.	Study to determine land suitability for key crops conducted and used to inform the implementation of the Land Policy. Roadmap to implement the Land Policy developed and endorsed. Lobby undertaken for the endorsement and implementation of the Land Policy	
			Relocate production areas/farms to lands with high agricultural capability and productivity	Assessment on the needs, gaps, opportunities and challenges for the relocation of production areas/farms to lands with good agricultural capability conducted and endorsed. Trials conducted with farmers to relocate production areas/farms to lands with good agricultural capability.	
			Revise, update and enforce regulations to govern the production of crops and livestock adjacent to aquifers and waterways based on best practices	Regulation to govern the production of crops and livestock adjacent to waterways assessed, revised, updated and enforced.	

		<p>Strengthen research and development in climate resilient agriculture to improve access to climate resilient varieties and local inputs (organic fertilizer and natural pesticides)</p>	<p>Establish an “Enhanced-Value Chain Business Development Centre” to develop and promote Climate Resilient Agriculture (CRA) best practices and businesses (e.g. Soufriere, Region 6)</p>	<p>Enhanced-Value Chain Development Centre to develop and promote CRA best practices and businesses (e.g. Soufriere) selected, established and operational.</p>	
			<p>Study and implement agro-biodiversity benefits (e.g. mixed species planting, intercropping, beneficial plants that attract beneficial insects)</p>	<p>Study on the agro-biodiversity benefits in strengthening farm resilience, yield and farmers’ income conducted, published and disseminated. Awareness raising campaigns on the benefits of agro-biodiversity, based on the study conducted. Communication products and services developed and published to train farmers on agro-biodiversity practices and raise awareness of the benefits of their benefits among value chain actors.</p>	
			<p>Conduct research on environment friendly and integrated pest/disease management systems for crops and livestock. Research produce and market natural pesticides (e.g. indigenous entomo* 10 -pathogenic fungi) as alternative to imported chemicals</p>	<p>Research on environment friendly and integrated pest/disease management systems for crops and livestock and the production and marketing of natural pesticides (e.g. indigenous entomopathogenic fungi) conducted. Best environment-friendly pest/disease management systems identified piloted and commercialised. Awareness raising campaign on the hazards of chemical pesticides conducted.</p>	

			<p>Introduce/adapt and promote the cultivation and conservation of alternative/diversified and climate resilient varieties of crops, animals and pastures</p>	<p>Alternative/diversified and climate resilient varieties of crops, animals and pastures identified or developed/introduced and tested. Production and marketing strategies for the best alternative crops, animals and pastures developed and implemented.</p>	
			<p>Introduce alternative heat and drought tolerant crop varieties; crop varieties with a higher harvest index (improving water use and irrigation efficiency); non-transgenic, where possible</p>	<p>Alternative heat and drought resistant crop varieties; crop varieties with a higher harvest index (making irrigation more effective) introduced, tested and promoted. Risk assessment conducted, and regulations established if genetically modified varieties are used. Production and marketing strategies for the best alternative crops, animals and pastures developed and implemented.</p>	
			<p>Introduce/adapt for cultivation of more salt-tolerant/resistant crops and pastures</p>	<p>Study to identify, multiply and market more salt-tolerant/resistant crops and pastures conducted, endorsed and published. Risk assessment conducted, and regulations established if genetically modified varieties are used. Production and marketing strategies developed and operational.</p>	

			Improve soil testing and apply corresponding soil amelioration measures (e.g. leaching with fresh water)	Facilities for soil testing equipped and staffed - Technical and financial feasibility study on the research to apply on soil amelioration measures (e.g. leaching with fresh water) conducted and reported	
		Enhance human and institutional capacity for the design, implementation, monitoring and evaluation of agriculture-related climate adaptation projects	Set up demonstration plots showcasing climate resilient farming techniques. Facilitate farmers training on climate resilient agriculture through farmer field schools. Develop training for new and existing extension officers using non-private lands or Memoranda of Understanding.	Demonstration plots showcasing climate resilient farming techniques established and operational. Farmers training on climate resilient agriculture facilitated through farmer field schools. Knowledge and communication products and services developed and promoted. Training for new and existing extension officers conducted and certified.	
Enhanced nutrition, food availability, quality and security through adaptation in the agriculture sector	Promote climate resilient crop production	Strengthen implementation of Good Agriculture Practices (GAP) and permaculture best practices to strengthen climate change resilience	- Best climate resilience-building permaculture and GAP identified, developed, improved and adopted by farmers. - Knowledge and communication products and services to train and raise awareness on these practices among farmers and value chain actors developed and published.		
		Adopt CRA best practices to extend the use of soil and water and energy-efficient conservation measures (mulching, appropriate terracing, drip irrigation, solar pump, wind power, etc.) to reduce water losses and erosion	- CRA best practices to extend the use of soil and water conservation measures (mulching, appropriate terracing, drip irrigation, solar pump, etc.) and reducing water losses and soil erosion identified, tested, promoted and adopted by farmers		

				<ul style="list-style-type: none"> - Knowledge and communication products and services to train and raise awareness for value chain actors developed and used 	
			Develop, test and scale up (through viable financial business models) technologies for controlled environment production (e.g. cold frames*,12greenhouses/polytunnel**13with plastic and polycarbonate)	<ul style="list-style-type: none"> - Controlled environment production technologies appropriate for Saint Lucia, identified, developed/adapted, tested and adopted. - Viable business models established for engaging the private sector in the production/import of the elements required for the technologies. - Competitive financial products and services established to scale up the adoption of technologies by farmers. 	
			Adopt, cultivate and market alternative cash crops (e.g. fat poke, cashew, beets, dwarf coconuts)	<ul style="list-style-type: none"> - Study for the identification of promising alternative cash crops conducted. - Most promising alternative cash crops tested and promoted for farming livelihood diversification, and income. 	
			Improve cropping sequences for short term crops in collaboration with farmer networks	Study to test various cropping sequences for short term crops undertaken, best results disseminated and promoted.	
		Promote climate resilient livestock production	Develop, adopt and scale up feed conservation techniques e.g. zero grazing for livestock (use of “cut and carry” technique or imported feed) and fodder banks to reduce need for extensive grazing and potential for soil erosion	<ul style="list-style-type: none"> - Feed conservation techniques e.g. zero grazing for livestock (use of “cut and carry” technique or imported feed) identified and promoted. - Fodder banks to reduce need for extensive grazing and potential for soil erosion established and operational. 	

			Develop, promote and implement the most cost effective semi intensive production systems (e.g. rotational grazing) to encourage pasture growth and organic matter production for improved pasture productivity and heat stress reduction (shade trees/shed, sprinklers)	<ul style="list-style-type: none"> - Study conducted to identify the most appropriate and cost-effective efficient semi intensive production systems (e.g. rotational grazing) to encourage pasture growth and organic matter production in Saint Lucia. - Most appropriate production systems promoted and adopted by farmers for improving productivity of pasture lands and reducing heat stress (shade trees/shed, sprinklers). 	
		Strengthen resilience and ecosystem services through integrated sustainable land and watershed management	Adopt a watershed management planning approach for zoning (e.g. within agroforestry system)	Watershed management planning approach for zoning (e.g. within agroforestry system) adopted, promoted and scaled up	
		Advance water supply side management by improving rainwater harvesting and water storage infrastructure	Construct climate resilient infrastructure to improve water supply and storage for crops and livestock production (e.g. dams, water storage tanks) and improve farm drainage infrastructure, storm drains, cultivation and harvesting practices to reduce impacts of soil waterlogging stress during heavy precipitation periods	Infrastructure to improve water supply and storage for crops and livestock production (e.g. dams, water storage tanks) constructed/installed and operational through programmes designed to promote climate resilient farming. The programmes should also consider improving farm drainage infrastructure.	
		Scale up water demand side management by improving water and soil conservation best practices	Scale up irrigation systems with high water efficiency and waterconserving technologies	Irrigation systems with high water efficiency and water-conserving technologies assessed, developed, installed, operational and scaled up.	

		Promote sustainable wastewater management by reducing, reusing and recycling of agro-waste resources	Scale-up and develop sustainable waste management system for crop and livestock production	Sustainable Waste Management Systems to reduce, recycle, reuse waste from crop and livestock production developed, operational and scaled up.	
Strengthened partnerships for scaling up climate resilient agriculture		Forge a strong public private partnership to scale up climate resilient agriculture best practices and business	Facilitate the development of partnerships for active involvement of the private sector in community climate resilience building (e.g. agriculture insurance)	Assessment study on the needs, gaps, opportunities and challenges in leveraging private sector resources and investment in community climate resilience building (e.g. agriculture insurance) conducted, with recommendations taken up and partnership models tested	
	Leverage private sector resources by improving access to resilient financial and business supports and best practices for scaling up crop and livestock production		Improve access to the Climate Change Adaptation Financing Facility and other such initiatives designed to assist farmers (and other vulnerable groups) in building climate resilience and addressing climate change	Study to improve the Climate Change Adaptation Financing Facility and the challenges to scale up to a Climate Change Trust Fund in the context of proposed Environmental Trust Fund conducted and endorsed.	
			Develop a system to support agriculture enterprises that integrate climate change considerations in their processes through incentives/disincentives. Access to competitive financial products and services	Feasibility study on the needs, gaps, opportunities and challenges to develop a system to support enterprises that integrate climate change considerations in their processes through incentives/disincentives conducted and endorsed.	
			Provide assistance for technology and innovation development for the agriculture private and public sectors	Study to identify assistance needed to develop new technology and innovation for the private and public sectors conducted and endorsed.	

			Support changes in business processes for increased climate and business resilience (e.g. business continuity planning)	Assess the needs, gaps, opportunities and challenges to support changes in business processes for increased climate and business resilience (e.g. business continuity planning) conducted and endorsed.		
Strengthened preparedness to climate variability and extremes in the agriculture sector	Improve agro-meteorological data monitoring, emergency planning and informed decision-making		Strengthen existing facilities for soil and water quality testing	- Needs of existing facilities for conducting soil and water quality testing studied and analysed. - Existing facilities for conducting soil and water quality testing improved and operational.		
			Set up agro-meteorological and forecasting system for the planning of farm activities	Agro-meteorological and forecasting systems established and operational to enable farmers and value chain actors to make informed decisions to adapt to climate change.		
		Scale up climate resilient agricultural infrastructure to reduce climate risks		Establish emergency systems and infrastructure for food storage, packaging, processing and food import and distribution in the event of emergency	Emergency systems and infrastructure for food storage, packaging, processing, food import and distribution to cover food shortages during emergencies established and operational.	
				Improve systems to reduce post-harvest losses and improve processing, including storage facilities	Systems to reduce post-harvest losses assessed, developed/constructed, improved and operational, including storage facilities	
				Improve, strengthen, adapt, relocate agricultural infrastructure to provide for continuity in services during and post extreme conditions	Climate resilient agricultural infrastructure assessed, costed, improved, strengthened, adapted and relocated to suitable location to provide services during and post extreme conditions.	

			Develop national database to store all data on the agriculture sector for decision-making	National agricultural database designed and established.	
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FISHERIES PRIORITIES

SECTOR	OUTCOMES	OBJECTIVE	ACTIVITIES	INDICATORS	COSTS
Fisheries	Enhanced enabling environment for climate adaptation action in the fisheries sector	Improve the national policy, legal and regulatory framework to facilitate climate adaptation in the fisheries sector	Enhance marine and terrestrial spatial planning to help balance fishery and aquaculture needs, terrestrial development and shoreline protection with rising sea level.	Marine and terrestrial spatial planning assessed, improved and endorsed to help balance aquaculture needs, terrestrial development and shoreline protection with rising sea level.	n/a
			Integrate climate change considerations into fisheries and aquaculture policy and national development planning.	Fisheries and aquaculture policy reviewed, analysed and integrated into climate change adaptation and national development planning.	
			Regulate entry into selected fisheries to improve opportunities for increasing economic yield and productivity	Legislation to regulate entry into selected fisheries to improve opportunities for increasing economic yield and productivity developed and enforced	
		Enhance human and institutional capacities for the design, implementation, monitoring and evaluation of fisheries-related climate adaptation projects	Develop and implement capacity building and outreach programmes for fisheries and aquaculture actors in the value chain (e.g. fishers, vendors, business service providers and management agencies) to facilitate holistic climate change adaptation planning and implementation.	Capacity building programmes for value chain actors in the fisheries sector (e.g. fishers, vendors, business service providers and management agencies) regarding climate change, expected impacts and adaptation strategies and to facilitate holistic climate change adaptation planning and implementation, developed and implemented.	

	Enhanced nutrition, food availability, quality and security through adaptation in the fisheries sector	Improve productivity through climate resilient fisheries management systems	Enhance maritime and coastal fisheries habitats to build resilience (e.g. mangroves restoration, by establishing artificial reefs, propagating and replanting using coral reefs species that are more tolerant to increasing temperature and acidity).	Maritime and coastal fishery habitats restored or artificially enhanced to withstand climate change impacts. Enhancement programmes could include mangroves restoration, artificial reef establishment, propagation and replanting of coral reef species that are more tolerant to increasing temperature and acidity, among others.	
			Design and implement a programme of best practices to increase fishing vessel stability and safety at sea e.g. by investing in appropriate vessels that are safer in increasingly rough conditions.	Programme of best practices to increase stability and safety at sea e.g. by investing in appropriate vessels that are safer in increasingly rough conditions developed and operational.	
			Improve knowledge and communication products, services, platforms, networks to raise awareness on fisheries, aquaculture and climate change for risk reduction action	Knowledge and communication products, services, platforms and networks to raise awareness on fisheries and climate change developed and published and disseminated.	
			Evaluate and enhance fisheries management and development policies and plans for climate responsiveness (e.g. based on the changing status of the fish populations due to climate change)	Climate resilient fisheries management and development policies and plans for climate responsiveness (e.g. based on the changing status of the fish populations due to climate change) evaluated, developed, tested, improved and promoted	

			<p>Improve access to higher-value markets to promote greater benefits from fisheries and aquaculture production to compensate for reduced yields due to climate change (e.g. through the enhancement of Sanitary and Phytosanitary Standards (SPS), innovative infrastructure, supply-demand surveys, value chain analysis, and market intelligence)</p>	<p>Access to higher-value markets evaluated and improved to promote greater benefits from fisheries and aquaculture production to compensate for reduced yields due to climate change (e.g. through the enhancement of sanitary and phytosanitary standards, innovative infrastructure, supply-demand surveys, value chain analysis, and market intelligence).</p>	
			<p>Reduce capital, operation and other costs in fisheries and aquaculture by introducing and promoting fuel efficient technologies in response to declining yield and productivity in a changing climate</p>	<p>Fuel efficient technologies and best practices assessed, identified, tested and promoted to reduce capital and operation costs in fisheries and aquaculture in response to declining yield and productivity.</p>	
		<p>Promote climate resilient aquaculture production in response to a changing climate</p>	<p>Enhance the screening and control of emerging disease in aquaculture in response to changing climate</p>	<p>System for the screening and control of emerging disease in aquaculture developed and promoted.</p>	
			<p>Replace fishmeal and fish oil in aquaculture feed with alternative sources of protein to maintain growth rate in the face of declining wild fish stocks (e.g. research into insect proteins such as black army worm).</p>	<p>Feasibility study to replace fishmeal and fish oil in aquaculture feed with alternative sources of protein to maintain growth rate in the face of declining wild fish stocks (e.g. research into insect proteins such as black army worm) conducted, endorsed and disseminated.</p>	
			<p>Diversify and expand aquaculture to include non-carnivorous commodities and new climate-smart technologies</p>	<p>Programme with business models to diversify and expand aquaculture to include non-carnivorous commodities</p>	

			such as aquaponics, intensive aquaculture and marine cage culture. Study the growth and lifecycle of native aquaculture species (e.g. fish, crab, freshwater shrimp, etc.)	and new climate-smart technologies such as aquaponics, intensive aquaculture and marine cage culture assessed, developed, tested and promoted.	
	Promote alternative livelihoods creation and development and strengthen climate resilience in fishery-dependent businesses		Provide support for capitalising on new business opportunities that arise in response to climate change	Programme to support fisherfolk to capitalise on new business opportunities that arise in response to climate change assessed, developed and promoted.	
			Enhance research and investments into creating new and alternative fisheries for underutilised wild-caught species and associated strategies for market penetration to support marine-based sustainable livelihood opportunities e.g. Diamond back squid fishery.	Research on, and investments into, creating new and alternative fisheries for underutilised wild-caught species and associated strategies for market penetration to support marine-based sustainable livelihood opportunities e.g. Diamond back squid fishery conducted and promoted.	
			Enhance gear and establish programmes to reduce ghost fishing due to losses during more severe storms (e.g. biodegradable panels)	- Enhanced gear to reduce ghost fishing, due to losses during more severe storms (e.g. biodegradable panels) assessed, developed, tested and promoted. - Programmes to reduce ghost fishing designed and implemented.	
Strengthened partnerships for building sustainable and resilient fisheries in a changing climate	Improve access to financial and business support for leveraging private sector investment into the fisheries sector		Develop sustainable financial mechanisms to support livelihood investments to diversify and adapt e.g. education fund, infrastructure support etc.	Financial mechanisms and schemes to support livelihood investments to diversify and adapt e.g. education fund, infrastructure support etc. evaluated, developed, tested and rolled out	
			Develop and expand social benefits, insurance (life, medical and livelihood protection insurance schemes), pension	Social benefits, insurance (life, medical and livelihood protection insurance schemes), pension and compensation	

			and compensation schemes for climate related impacts for fishers and their families	schemes for climate related impacts for fishers and their families assessed, developed, tested, improved and rolled out.	
			Enhance the 'ease of doing business' to support business development utilising climate smart food production systems e.g. fiscal incentives and improved access to competitive and affordable financial products and services (loans, favourable interest rate and terms)	The 'ease of doing business' to support business development utilising climate smart food production systems e.g. fiscal incentives and improved access to competitive and affordable financial products and services (loans, favourable interest rate and terms) studied, formulated and promoted	
Stenghtened preparedness to climate variability and extremes in the fisheries sector	Strengthen climate monitoring and communication for emergency planning and informed decision making		Enhance data collection, research (including modelling) and monitoring of fish stocks to make appropriate investment decisions in the fisheries sector (e.g. SMART FADs) (be aware of the risks of overexploitation and potential climate impacts)	Data collection, research (including modelling) and monitoring of fish stocks assessed, tested and improved for making appropriate investment decisions (e.g. SMART FADs), being aware of the risks of overexploitation and potential climate impacts.	
			Develop hazard and risk maps on impacts of climate change for informing fisheries, coastal land and marine use planning	Climate-related hazard and risk maps relevant to fisheries developed and utilised in coastal land and marine planning.	
			Develop emergency plans for the fisheries sector, with Early Warning Systems (EWS) and associated sensitisation to reduce losses and provide timely rehabilitation and disaster response and timely post-disaster recovery support (e.g. speed up vessel repairs, access to new tools and equipment)	- Study conducted to identify mechanisms for improving climaterelated and fisheries-relevant information services to help fishers minimise climate risks in their daily activities, including their time at sea. The assessment should cover, among others, existing climatological data collection and information services, EWS, changes in fish stocks, sea weed	

				and invasive species, and an analysis of how improving the services could enable fishers to make informed decisions on where to fish, hazardous areas to avoid and location of SMART FADs, among others.	
			Screen, monitor and alert on offshore seaweed movement to decrease the risk of damage to engines, fishing gear and other fisheries infrastructure	System to screen, monitor and alert on offshore seaweed movement to decrease engine and fishing gear damage developed, tested, improved and operational.	
		Scale up climate resilient fisheries infrastructure to reduce climate risks	Strengthen, retrofit, and/or relocate fisheries and aquaculture infrastructure and assets to better withstand climate impacts	Study conducted to: a) identify fisheries and aquaculture infrastructure that is weak and at high risk of climate impacts; b) suggest solutions to increase the resilience of the identified weak infrastructure, including structural improvements and relocation. Solutions could include the protection of harbour and landing sites; building aquaculture facilities to withstand increased storm damage (e.g. using geo-membrane linings, water recirculating systems and raised banks/dykes in flood-prone pond systems); c) design a plan to increase the resilience of weak but crucial fisheries and aquaculture infrastructure, using the solutions identified in the study.	
			Deploy hard defences (e.g. sea walls) to protect fisheries livelihoods and infrastructure to reduce climate impacts	Needs for hard defences (e.g. sea walls) to protect fisheries livelihoods and infrastructure from climate impacts	

			on local ecosystem services and/or local livelihoods	assessed, infrastructural solutions costed, designed, funded and implemented.	
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INFRASTRUCTURE AND SPATIAL PLANNING

SECTOR	OUTCOMES	OBJECTIVE	ACTIVITIES	INDICATORS	COSTS
Infrastructure and spatial planning	Enhanced enabling environment for climate adaptation action in infrastructure and spatial planning	Accelerate policy, legislative and regulatory processes indispensable for adaptation planning and implementation	Accelerate the approval of the revised Land Use Policy	Land use policy approved, providing risk-based guidance to planning processes, including those related to housing development and critical infrastructure.	n/a
			Draft/Review comprehensive Land Use Plan	- Land use plan drafted/reviewed, including clear zoning of areas not apt for any type of development when in locations highly exposed to direct climate impacts (e.g. most exposed coastal areas) and establishing building setbacks for river bank properties (to reduce vulnerability and facilitate river channel maintenance).	
			Regulate entry into selected fisheries to improve opportunities for increasing economic yield and productivity	Legislation to regulate entry into selected fisheries to improve opportunities for increasing economic yield and productivity developed and enforced	
			Periodically reassess all building codes in light of new climate change issues and advances in building material and technology to ensure climate resilience	Revising building codes more frequently officially mandated for setting climate resilient standards for public property and new property developments. The building codes	

				should be updated in terms of hurricane resistance, energy efficiency, flood resistance and site improvements, including drainage improvement, among other factors.	
			Develop legislation reforms to link property insurance, construction quality and climate risk level of the property location	- Potential reforms analysed. - Appropriated legislative reforms endorsed.	
			Plan and initiate phased relocation of settlements and vital infrastructure to less vulnerable areas	- Feasibility studies for the relocation of the most vulnerable settlements and vital infrastructure conducted. - Long-term relocation plans elaborated, discussed and approved. - Regulatory and enforcement mechanisms for relocation set-up. - Plan implementation initiated.	
			Facilitate access to assistance and resources/incentives for the most socio-economically vulnerable groups to retrofit their properties	Create incentives for retrofitting for the poor and other vulnerable groups.	
			Eliminate maladaptive incentives and revise and strengthen enforcement mechanisms to development in hazardous and vulnerable areas	- Maladaptive incentives identified and communicated. - Enforcement mechanisms strengthened. - New development in hazardous areas and vulnerable areas minimised.	
Strengthened infrastructure to withstand climate impacts	Retrofit existing and build climate resilience of new infrastructure	Create and start the implementation of a Plan for the retrofitting of existing public infrastructure most at risk from climate impacts (e.g. Roads, buildings	- Climate change vulnerability and risk assessments conducted for public infrastructure in the various development sectors and geographic		

			<p>(schools, health facilities, government buildings, community centres), water infrastructure,).</p>	<p>regions. The studies should a) assess needed retrofitting interventions, b) provide recommendations on building climate resilience of planned new infrastructure, c) establish feasibility of retrofitting and climate resilience options and, d) propose plans of action for both (including relocation when absolutely necessary).</p> <ul style="list-style-type: none"> - Plan analysed and endorsed - Financial resources to start the implementation of the plan secured. <p>Some of the actions to be contemplated include:</p> <ul style="list-style-type: none"> - Reinforcement of existing coastal structures e.g. jetties and landing docks. - Increasing the elevation of future coastal developments. - Upgrading public buildings with RWH and water recycling systems. - Increased septic tank volumes to compensate for flooding 	
			<p>Promote the retrofitting and enhanced climate resilience of private property and infrastructure</p>	<ul style="list-style-type: none"> - Awareness raising campaigns on the benefits of simple private retrofitting solutions designed and implemented. - Programme of technical assistance/advice for the retrofitting/climate-proofing of private property established and prioritising attention to the most vulnerable groups (identified through the national climate vulnerability assessment). 	

	Enhanced infrastructure-based climate adaptation	Promote infrastructural upgrades for climate adaptation	Encourage developers and homeowners to install RWH systems and/or sufficient water storage for appropriate uses and as a backup during dry periods and water cuts	<ul style="list-style-type: none"> - Public awareness and capacity building activities conducted to encourage infrastructure strengthening and upgrades, including the installation of RWH systems. - Incentives for RWH in place. - Increased installation of RWH systems and water tanks 	
			Encourage developers and homeowners to strengthen and upgrade guttering, drainage and other infrastructure that may be damaged during heavy rain events.		
		Enhance port operations and safety under a changing climate	Assess and strengthen the resilience and operational thresholds in the coastal infrastructure	<ul style="list-style-type: none"> - More flexible seaport operations analysed and planned, to take advantage of suitable operating conditions (and in anticipation of increased downtime). - Quay and wharf levels including infrastructure revised. 	
	Strengthened preparedness to climate variability and extremes	Increase emergency response capacity	Ensure that all buildings designated as emergency shelters are not in vulnerable areas; increase the number of shelters on higher ground either near the coast or inland	<ul style="list-style-type: none"> - Increased number of shelters in less vulnerable locations 	
		Increase national capacity to assess and address climate-related vulnerability and risk	Develop/update national emergency plans based on a comprehensive assessment of human settlements and related infrastructure at risk of climate change. Develop psycho-social support network for dealing with post-disaster stress.	<ul style="list-style-type: none"> - National climate vulnerability assessment and mapping conducted and used to develop/update national emergency plans. - The psycho-social support network for dealing with post-disaster stress is created, integrated in the general emergency strategy and operating. 	

NATURAL RESOURCE MANAGEMENT (TERRESTRIAL, COASTAL AND MARINE)

SECTOR	OUTCOMES	OBJECTIVE	ACTIVITIES	INDICATORS	COSTS
Natural resource management (Terrestrial, coastal and marine)	Enhanced enabling environment for ecosystem-based adaptation and natural resource management under a changing climate	Improve the national legal and regulatory framework to facilitate natural resource management and ecosystem-based adaptation under a changing climate	Revise and implement an Integrated Coastal Zone Management Plan	- Integrated coastal zone management plan revised with a welldefined authority and budget and implemented	n/a
			Increase regulation and monitoring of coastal and river bank setbacks for all types of development	- Revised Land Use Policy approved (including coastal setback protection) and enforced	
			Provide incentives to encourage appropriate development or relocation by land owners of environmentally sensitive and/or high climate risk areas	- Potential incentives analysed, consulted on, and approved (e.g. land swap, tax breaks).	
			Legislate to establish a network of protected areas	Legislation developed and approved.	
			Enact and enforce legislation to prohibit beach and river sand mining and removal of river stone	- Beach sand mining legislation approved and enforced	
	Set-up and enhance existing environmental monitoring systems	Establish air quality monitoring systems	Air quality monitoring systems designed, operationg and linked to health warning systems		
	Increased ecosystem quality and coverage	Increase coverage of sustainably managed and protected ecosystems	Protect water catchments, riparian zones and natural forests	- Riparian buffer zones introduced and maintained. - River reserves introduced. - Plan for State acquisition of private water catchments and intact natural forests formulated - Plan implementation initiated	

			Expand reforestation programmes, prioritising the reforestation of critical watersheds	- Reforestation programmes in critical watersheds expanded and new programmes implemented.	
			Establish river usage zoning and regulations to reduce water use conflicts and secure the integrity of riverine ecosystems and water quality.	Feasibility study establishing river usage zoning and required regulations/guidelines conducted.	
			Maintain existing vegetative buffers – mangroves, coastal vegetation, river banks - through regulations and enforcement	Wetlands and main vegetative buffers along riverbanks and coasts are protected and restored through regulations and enforcement.	
			Enhance fish nursery habitats	- Mangrove and coral reef restoration and artificial reef programmes scaled up.	
			Restore degraded coastal ecosystems (including beaches)	- Beach nourishment programmes amended and accelerated. - Buffer zones for coastal habitats to allow for natural regeneration promoted	
		Reduce the impact of ecosystem degradation factors	Control the risk of chemical pollution (and other types of pollution) of water sources	- Guidelines elaborated for the handling, transportation and storage of chemicals and chemical waste; managing accidents and spills; and the use and disposal of chemicals. - Red-flagging of pesticides and chemical products at customs implemented	

			Scale-up strategies for the prevention, monitoring and control of invasive species	<ul style="list-style-type: none"> - Study on improved monitoring and control of invasive species in terrestrial, marine (e.g. lionfish) and coastal ecosystems conducted and communicated. - Plan to improve control of invasive species elaborated (including communications campaign) and implemented. 	
	Strengthened ecosystem-based adaptation	Enhance ecosystem services to reduce climate risks	Include green spaces in urban planning to increase vegetation cover and reduce the heat island effect	<ul style="list-style-type: none"> - Urban planning operations including green spaces are scaled up. - Urban afforestation programme planned and implemented. - Green roofs tested and introduced. 	
			Evaluate the costs and benefits of hard infrastructure vs. various natural buffers on reducing exposure to climate impacts island-wide	<ul style="list-style-type: none"> - Study conducted. Results analysed and presented in report and recommendations used in land use planning decisions. - Programme for restoring natural buffer ecosystems designed and approved. 	
			Reduce the risks and impacts of wildfires to forests	Analysis of most fire-prone areas conducted, and including suggested measures, that are locally appropriate to reduce the risk of fires and control forest burning (e.g. break zones).	

HEALTH PRIORITIES

SECTOR	OUTCOMES	OBJECTIVE	ACTIVITIES	INDICATORS	COSTS
Health	Enhanced enabling environment for health related climate adaptation action	Improve the national legal and regulatory framework to facilitate adaptation in the health sector	Inclusion of climate change-related health considerations in EIAs	Climate change related-health considerations integrated in EIAs.	n/a
			Develop and enforce air quality standards (including indoor air quality standards)	Air quality standards developed and enforcement mechanisms setup and operating.	
			Enact legislation for the protection of vulnerable groups, including the young and elderly	- All elements to be considered in the legislation analysed. - Legislation enacted and enforced.	
		Generate climate, environmental and socioeconomic data and science-based information critical to adaptation in the health sector	Map and model high resolution climate-related hazard maps (including landslide, flood and fire hazard maps) and the risk of disease with climate change scenarios to support long-term planning	- Hazard assessments conducted information analysed in reports and communicated. - High resolution flood risk maps produced. - High resolution major climate-associated disease maps produced. - High resolution fire risk maps produced. - High resolution landslide risk maps produced. - Study conducted for modelling and mapping the risk of disease under various climate change scenarios, based on improved data, up-to-date climate projections and epidemiological information; results of the study analysed, presented in a report and communicated.	

				- Disease risk maps with climate change scenarios elaborated.	
			Improve data collection and analysis for modelling and mapping disease occurrence	- Analysis of current data collection systems for disease conducted, with recommendations on how the different sectors can contribute to decrease risks (e.g. modifications in land-use, landplanning, construction, water storage, etc.) and on how to improve disease outbreak surveillance systems. - Improved data collection and surveillance systems for disease outbreaks set-up - Public health data systems incorporate the monitoring of vector and waterborne diseases.	
			Standardise information collected after disasters to more accurately measure morbidity and mortality.	- Study to set-up an effective information standardisation system conducted. - Standardisation procedures and system in place and operating.	
			Establish systems for monitoring ultraviolet (UV) and air pollutants of concern	UV and air pollutant monitoring equipment and systems established and operating	
			Analyse existing primary basic core and secondary health care data, including morbidity data, hospital admissions, and emergency attendance.	- Systems for the capture and rapid exchange of health surveillance data established and operating.	

			Establish more effective and rapid electronic exchange of surveillance data across sectors.	<ul style="list-style-type: none"> - Systems for the analysis of basic health care data established and operating. - Training on health care data analysis delivered. - Health care information continuously updated. 	
Improved public health under a changing climate	Reduce the risk of climate-sensitive vector-borne disease outbreaks and improve outbreak management	Assess effectiveness of current vector control measures and management systems and address limitations.	<ul style="list-style-type: none"> - Assessment study conducted on the effectiveness of current vector control measures and management systems. The study should highlight gaps and weaknesses in surveillance and response systems, including regulatory limitations and provide a set of recommendations and a plan for improvement, inclusive of a programme for cross-sectoral participation in vector control and monitoring. - Plan to address effectiveness issues identified in the assessment, elaborated, submitted for funding and initiated. - Cross-sectoral programme on vector control designed and funded, including institutional capacity building and public awareness activities. - Measures to increase effectiveness taken, including the elaboration of guidelines/regulations for mosquito breeding in constructed water bodies. - Awareness raising campaigns on vector-borne diseases designed 		
		Establish and enforce regulations/guidelines for control of mosquito breeding in constructed water body habitats (e.g. domestic containers rainwater tanks, sewage ponds)			
		Establish a cross-sectoral programme on vector control, with the engagement of the health, planning, agricultural, forestry and environment sectors			
		Build human capacities for the surveillance of vector density and disease transmission			
		Raise awareness on climate change diseases, the risks associated with living or recreating near vector breeding habitats.			

				and implemented. - All relevant sectors engaged in vector control.	
		Reduce health risks during heat waves	Set-up a heat event response plan	Heat event response plan set up and including: a) provisions for increased hospital and nursing home staffing during heat events, b) extreme heat alerts, c) awareness raising campaigns on heat avoidance procedures and management of health impacts, d) recommendations to government and private sector to modify work schedules to avoid exposure to maximum heat, e) guidelines for school attendance and public events (e.g. sporting events)	
			Plan to allow an increase in hospital and nursing home staff during heat- events		
			Implementation of education campaigns on heat reduction/avoidance procedures and management of health impacts.		
		Improve health surveillance systems	Monitor hazard management measures to reduce health risks (e.g. fire breaks, fuel loads, flood management, trees near power lines, etc.)	- Assessment of existing management systems for the hazards most relevant to health conducted, limitations identified and a mechanism for monitoring hazard management systems identified. - Monitoring system of hazard management systems set-up and operating	
			Improve epidemic forecasting for climate sensitive diseases	Assessment of epidemic forecasting systems applicable in Saint Lucia conducted. - Recommendations of the assessment included in projects and implemented.	
			Improve active laboratory-based disease surveillance and prevention systems.	- Evaluation of the effectiveness of current laboratory-based disease	

				<p>surveillance and prevention systems conducted.</p> <ul style="list-style-type: none"> - Recommendations from the evaluation included in programmes and, if necessary, in projects to be submitted - Measures to improve laboratory-based disease surveillance and prevention systems implemented 	
			<p>Establish new or improve existing monitoring of:</p> <ul style="list-style-type: none"> - Seasonal patterns of respiratory disease. - Veterinary disease - UV radiation 	<p>Monitoring systems developed or improved and operating and linked to warning systems.</p>	
		<p>Improve health care and information for vulnerable groups</p>	<p>Strengthening climate-sensitive vector-borne disease public health infrastructure to ensure access to treatment in vulnerable communities.</p>	<ul style="list-style-type: none"> - Plan established to improve health care for vulnerable groups. The plan identifies vulnerable groups based on up-to-date poverty and other socioeconomic factors, but also considering their exposure to climate risks. The plan outlines mechanisms for ensuring, easing and increasing access to health care and health related information by vulnerable groups and for strengthening health infrastructure in vulnerable communities - Plan approved, and implementation initiated 	
			<p>Regional assessments of water-related health issues and identification of vulnerable communities</p>		
			<p>Conduct awareness raising campaigns on hygiene, and water- disease after extreme events to vulnerable communities</p>		<p>Awareness raising campaigns developed and delivered on a cyclical basis</p>

	Strengthened preparedness to climate variability and extremes	Strengthened health system emergency planning and response	Evaluate health system response to, and health outcomes of, extreme weather events to improve emergency preparedness, response and recovery plans	- Study evaluating health system response to, and health outcomes of, extreme weather events conducted, identifying key limitations (including data gaps) and providing concrete recommendations and measures to improve emergency preparedness and recovery plans and systems.	
			Improve contingency planning for allowing access of emergency personnel and equipment to isolated regions.	Measures to facilitate the access of emergency personnel and equipment to isolated regions and to reach vulnerable groups identified and integrated in contingency planning	

TOURISM PRIORITIES

SECTOR	OUTCOMES	OBJECTIVE	ACTIVITIES	INDICATORS	COSTS
Tourism	Viable and productive tourism sector through direct interventions and collaborations and synergies with all other sectors	n/a	Improve recommended guidelines to tourism operators to more effectively address climate change	Guidelines for tourism operators improved and including recommendations on how to more effectively address climate change	n/a
			Use more energy efficient cooling systems as well as proper maintenance	<ul style="list-style-type: none"> - Cost benefit analysis of the cost of inefficient air conditioning systems performed and results used to inform an awareness raising campaign for the tourism sector - Awareness raising campaigns for the tourism sector to use more efficient cooling systems designed and implemented 	

			Develop public awareness programmes for tourists; develop pilot projects to encourage participation of tourists (in reducing carbon emissions while supporting climate change adaptation)	Easy or creative ways for tourists to “offset” their vacation carbon emissions developed and established (e.g. by donating money to fund local reforestation or renewable energy initiatives or by spending a few hours engaged in reforestation work locally etc.)	
			Put in place new attractions and implement alternative tours (to adapt to changing environmental conditions) and develop alternative underwater attractions to reduce the stress on reef systems.	New attractions identified and tested.	
			Develop a programme that will determine the impacts of coastal hotel development along the coastline in Saint Lucia	Programme developed and implemented	
			Monitor and collect data to reduce lionfish populations and use the data to guide decision-making	Program to monitor lionfish populations developed and implemented	
			Sensitise boat and yacht users about anchorage locations and use the buoy system (to reduce damage and stress on reefs)	Sensitisation campaign designed and implemented	
			Install mooring buoys to provide alternative anchoring systems and protect the reef	Mooring buoys installed	
			Utilise existing data to conduct a sea level rise model and use in decision-making	SLR model developed for Saint Lucia	

			Identify the significantly utilise tourism attractions (e.g. Soufriere, beaches) and execute a project to determine the carrying capacity for three priority areas.	Project to identify the carrying capacity of three tourism key attractions areas conducted	
			Establish a learning relationship with Guadeloupe to facilitate knowledge transfer for new technology to use Sargassum as an alternative energy source (biofuel). The possibility of this should be explored prioritising tourism entities located on such beaches as priority for use of biofuel.	Study visits conducted, and technology transfer agreements implemented for transforming Sargassum into biofuel.	
			Develop a public awareness programme for tourism sector stakeholders regarding climate change issues and threats.	Public awareness programme about climate change issues and threats to the tourism sector developed and implemented.	

SAINT VINCENT AND THE GRENADINES

The development of sectoral adaptation strategies for other priority sectors (forestry, tourism, health and public infrastructure) will be finalized by 2022.

PROJECT TITLE	ELABORATION OF A PORTFOLIO OF CCA PRIORITY ACTIONS FOR THE KEY SECTORS (AGRICULTURE, WATER, FORESTRY, TOURISM, HEALTH AND PUBLIC INFRASTRUCTURES) FOR THE MEDIUM TERM WITH VERIFICATION THAT EACH MEASURE ALIGNS WITH THE NESDP AND SECTORAL STRATEGIES AND PLANS
SECTOR	n/a
OVERALL OBJECTIVES	Implement adaptation actions towards increased resilience among the most vulnerable Vincentians
ACTIVITIES	<p>Based on the evaluation of implementation of the actions included in the first phase of the NAP and sectorial strategies, perform the identification and prioritisation of pertinent needs and gaps</p> <p>Development of a portfolio of additional adaptation actions to implement in phase II, including the elaboration of feasibility studies and concept notes for planning and resource mobilisation</p> <p>Replication of the REEF protection and marine rehabilitation, update building code to avoid discharges of wastewater in the coast and protect reefs</p> <p>Replication of relocation of pipelines to less vulnerable areas, increasing of water storage capacity, implementation of solar desalination plants in the Grenadines, general improvement of watershed management plans including nurseries for trees and crops and provision of mobile water purification systems</p> <p>Improvement of early warning systems</p> <p>Small resilient hospitals and national green hospital</p> <p>Housing compensation scheme</p> <p>Increase the resilience of power lines</p>
TARGET ID (TARGET AREAS; BENEFICIARIES)	Most vulnerable groups
OUTCOMES	12 concept notes, at least 2 for each sector identified

IMPLEMENTERS	Lead: SDU; Implementation Partners: NCCC
INDICATORS	No. project concept notes developed
TIMELINE	2020 to 2023
COSTS	USD 250 thousand
FINANCIAL RESOURCES	n/a

SIERRA LEONE

SECTOR	OBJECTIVE	ACTIVITIES	IMPLEMENTERS	COSTS
Agriculture and food security	Promote climate-smart agriculture and climate resilient food security practices	<ol style="list-style-type: none"> 1. Adoption and application of climate smart and conservation agriculture through best agricultural practices that enhance soil fertility and improve crop yield. 2. Integrated management of crops and livestock management. 3. Develop and maintain seed banks to provide a variety of seed types that preserve biological diversity and enable farmers to make informed choices 4. Promote innovative and adaptive approaches such as irrigation and water harvesting to protect farmers from variability in rainfall. 5. Provide appropriate infrastructure, social services and mechanization of agriculture in the rural areas to slowdown massive movements of youths into urban areas. 6. Mainstream climate change into agricultural development strategies. 	Ministry of Agriculture and Forestry; Environment Protection Agency	n/a
Agriculture and food security	Improve research and knowledge management capacities to support climate smart agriculture and resilient land management	<ol style="list-style-type: none"> 1. Support the establishment of adequate weather stations around the country to provide reliable and adequate weather data to farmers 2. Provide adequate support to the Sierra Leone Agricultural Research Institute as well as Njala University to develop appropriate crop varieties and production practices that will enhance resilience to adverse weather conditions 3. Develop modelling approaches and tools to allow assessment of impacts of climate change on export and domestic crops and meat production 4. Develop regional links to fund and promote plant breeding programmes for common crops 5. Review approaches to integrated pest management under climate change 	Sierra Leone Meteorological Agency; Sierra Leone Agricultural Research Institute; Environment Protection Agency; Ministry of Agriculture and Forestry	n/a

		6. Conduct a feasibility study to gather information on community perceptions of climate smart agriculture techniques		
Water resources and energy	Improve institutional and functional capacities for integrated water management	<ol style="list-style-type: none"> 1. Improve planning and coordination of the use of the river basin, which may provide solutions to problems of water quality and supply. 2. Increase and maintain investment in hydrological monitoring and water use through a national database. 3. Fund research on adopting a water resources and water supply planning method under climate change. 4. Develop appropriate modelling tools to assist strategic planning of water resources. 5. Investigate shifting focus from ground water to surface water storage for water supply to reduce the reliance on vulnerable coastal aquifers. 	National water resources management agency; Ministry of water resources	n/a
Water resources and energy	Enhance universal access to energy by promoting renewables and energy efficiency	<ol style="list-style-type: none"> 1. Establish and operationalize a National Centre for Renewable Energy and Energy Efficiency (NaCREEE) to promote off-grid tand-alone solar (SAS) investments through technical advice and knowledge sharing in the areas of policy and regulation, technology development and transfer and public education. 2. Increase awareness of off-grid SAS and strengthen market knowledge by improving market intelligence 3. Strengthen local institutions and empower the private sector through capacity, network and partnership building 4. Provide up to date market information through research and awareness raising campaigns. 5. Align technology development and knowledge transfer goals with regional goals set for 2030. 6. Technically support the Energy Planning Unit in creating a pipeline of off-grid SAS projects. 7. Introduce solar technology management in school curricula and technical and vocational education at the tertiary level. 8. Develop guidelines for the standardization of off-grid solar systems including technical equipment, design and assessment 	Ministry of Energy; Ministry of Technical and Higher Education; Standards Bureau; Renewable Energy association of Sierra Leone	n/a

		<p>methods, operations and maintenance procedures and environmental compliance.</p> <p>9. Mobilize financial institutions to create investment packages and counterpart funding.</p>		
Water resources and energy	Mainstream considerations of gender equality and social inclusion into sectoral plans and strategies	<ol style="list-style-type: none"> 1. Expand women's and youth employment opportunities and participation in the management of off-grid solar energy interventions. 2. Build women-led partnerships at the local level to facilitate knowledge exchange, resource mobilization and sustained quality of services. 3. Bridge the gap in the proportion of women to men employment as solar technicians, engineers and project managers by promoting the entry of more women into jobs delivered within the sector through information, communication, education campaigns, scholarships and job placements. 4. Build the capacities of youth, women, PWDs, and other disadvantaged groups in using off-grid solar energy resources safely and productively (including for livelihood and business development or improvement). 	Ministry of Energy/Ministry of Gender; Ministry of Youth Affairs	n/a
Infrastructure (including WASH, transportation, and urban development)	Improve climate change adaptation infrastructure across priority sectors	<ol style="list-style-type: none"> 1. Enhance waste management systems at all levels to reduce pollution and greenhouse gas emissions to improve health of both humans and animals and reduce climate change. 2. Support the construction of appropriate roads particularly feeder roads in rural areas as a climate resilience strategy. 3. Diversify economic growth through a strengthened transport sector, particularly infrastructure to contribute to the reduction of greenhouse gas emissions. 	Municipal councils; Ministry of local government and rural development; Sierra Leone roads authority/Road maintenance fund administration; Ministry of	n/a

			Transport and aviation	
Infrastructure (including WASH, transportation, and urban development)	Mainstream climate change adaptation considerations into sectoral plans and strategies	<ol style="list-style-type: none"> 1. Strengthen integration of climate change adaptation into the health sector 2. Monitor and control WASH activities in informal settlements 	Ministry of Health and sanitation	n/a
Infrastructure (including WASH, transportation, and urban development)	Develop local institutional capacity to support coastal resources management	<ol style="list-style-type: none"> 1. Monitor academic and public news media to keep informed about changes in climate change science and adaptation tools, technologies and success stories. 2. Operationalize a Coastal Chiefdoms Natural Resources Management Network (CCNRMN) and various co-management committees. 3. Support the development, validation and enforcement of by-laws on mangrove wood harvesting, fishing and sand mining, at local and regional levels to promote mangrove conservation and adaptation to climate change. 4. Collect physical and socioeconomic data to better understand vulnerabilities and impacts. 5. Train relevant coastal institutions on climate change adaptation and mangrove conservation. 	Ministry of Fisheries and Marine resources; Coastal chiefdoms natural resources management network; National protected area authority/Institute of Marine Biology and Oceanography	n/a
Coastal zone management (including fisheries, marine resources, and coastal ecosystems)	Management of coastal and fisheries resources	<ol style="list-style-type: none"> 1. Promotion of non-destructive fishing techniques to maintain resilience of marine ecosystems. 2. Promotion of monitoring, control and surveillance of fishing grounds and fish stocks for sustainable exploitation. 3. Promotion of climate change related education and awareness programmes. 4. Improve productivity and sustainable management of fisheries and the marine sector. 5. Develop and operationalize an integrated coastal zone 	Ministry of Fisheries and Marine resources; Environment Protection Agency; Coastal district councils	n/a

		<p>management plan.</p> <p>6. Adopt an adaptive management approach for the governance of coastal management institutions and interventions.</p> <p>7. Improve fisheries governance through awareness raising and law enforcement to regulate fishing practices.</p> <p>8. Mainstream climate change adaptation into coastal development plans, using local development funds managed by councils to build resilience.</p>		
Coastal zone management (including fisheries, marine resources, and coastal ecosystems)	Increase human (social) development through technology transfer and livelihood support	<p>1. Strengthen the adaptive capacity of the most vulnerable groups and communities through social safety nets and insurance schemes.</p> <p>2. Undertake research to assess local uptake potential of livelihood techniques and technologies.</p> <p>3. Promote agri-sylvicultural practices and sustainable rice cultivation in coastal landscapes.</p>	Coastal chiefdoms natural resources management network; Ministry of Fisheries and Marine resources	n/a
Coastal zone management (including fisheries, marine resources, and coastal ecosystems)	Provide information and improve knowledge on climate risks and vulnerabilities	<p>1. Delineate hazard (flood and erosion prone) areas along the coastline.</p> <p>2. Improve the quality of topographic data for the coastal zone</p> <p>3. Establish robust and long-term mangrove ecosystem health surveillance, monitoring and analysis to develop insights into their current state and map future risks and vulnerabilities.</p>	Ministry of Fisheries and Marine Resources	n/a
Environment (including forestry, mining, tourism and land management)	Improve natural resources management in critical biodiversity hotspots	<p>1. Manage rangelands and pastures by managing grazing systems and grazing intensity, fire management and pasture rehabilitation.</p> <p>2. Restore degraded lands with high production potential.</p> <p>3. Establish new forest reserves, national parks and protected areas</p>	Ministry of the Environment; National Protected Area Authority	n/a

Environment (including forestry, mining, tourism and land management)	Improve the resilience of environmental value chains across the sector	Enhance the resilience of the tourism value chain.	Ministry of Tourism and Culture/National Tourist Board	n/a
Environment (including forestry, mining, tourism and land management)	Develop local institutional capacity to support coastal resources management	<ol style="list-style-type: none"> 1. Integrate climate change adaptation into the mining/extractive sector. 2. Mainstream climate change adaptation into land reforms, including establishment of a land commission and revision of the land policy 	Environment Protection Agency	n/a
Environment (including forestry, mining, tourism and land management)	Improve institutional and functional capacities for environmental governance	<ol style="list-style-type: none"> 1. Adopt the Draft Climate Policy into a comprehensive Climate Act 2. Establish the enabling legislative framework to implement the NCCS&AP actions 3. Establish and/or strengthen the high-level National Climate Change Council (NCCC), in the Office of the President 4. Establish a Sierra Leone Climate Fund as a financing mechanism for priority climate change actions and interventions 5. Institutionalize coordination, monitoring, reporting and verification of climate change issues by strengthening the Environment Protection Agency for effective and efficient provision of technical policy advice to the Government and people of Sierra Leone. 	Environment Protection Agency; Ministry of the Environment	n/a
Disaster management	Establish early warning systems to improve local understanding of risks	<ol style="list-style-type: none"> 1. Promotion and facilitation of early warning and disaster preparedness system. 2. Transformation of the National Meteorological Services of Sierra Leone. 3. Build capacity in observations and monitoring of climate 	Disaster Management Agency, Sierra Leone	n/a

		<p>systems, and in developing, packaging and communicating weather and climate information.</p> <p>4. Develop deeper insight into climate related hazards, vulnerability and risks.</p> <p>5. Promote climate related research, modelling and prediction of weather and climate events.</p>	Meteorological Agency	
Disaster management	Improve regulatory frameworks for disaster management	<p>1. Adopt the current disaster risk reduction policy into a comprehensive Disaster Management and Emergency Response Policy.</p> <p>2. Establish the enabling legislative framework to implement the DMD policy and action plan</p> <p>3. Establish and/or strengthen the high-level National DMD Council (NDMC), in the Office of the Vice President</p> <p>4. Establish a national disaster management agency as the primary national government agency for disaster management response.</p>	National disaster management agency	n/a

SOUTH AFRICA

SECTOR	OBJECTIVE	ACTIVITIES	COSTS
Human resilience and adaptive capacity	Increase human resilience and adaptive capacity	Strengthen local organisations to support individuals (male and female) and community adaptation; Identify individuals (male and female) and communities at most risk from climate change within municipalities and deliver targeted climate change vulnerability reduction programmes for these individuals and communities; Develop a list of resilience-building projects that can easily be replicated; Capacitate and operationalise South Africa’s National Disaster Management Framework to strengthen proactive climate change adaptive capacity, preparedness, response and recovery; Equip and capacitate emergency response departments, such as health and fire, to prepare for and manage climate-related disasters; Invest in knowledge and capacity building for the public, especially vulnerable groups (male and female), to prepare and adapt to climate change; Invest in knowledge and capacity building for climate-resilient rural livelihoods; Launch an enhanced climate change public flagship programme to build a healthier, more resilient society; Equip and capacitate healthcare facilities to manage climate changerelated health effects and climatesensitive diseases; Support small-scale fishers (male and female) to become more climate resilient through use of early warning systems and sea safety training; Support farmers (male and female) to implement more efficient climatesmart and conservation agricultural practices; Promote the expansion of food garden programmes outside of land classified as agricultural land or farmland to reduce food insecurity and hunger; Enhance the role of agricultural extension officers in supporting the most vulnerable farmers (male and female); Invest in knowledge and capacity building for climate-resilient rural homestead gardening; Support the integration of climate smart and ecosystem-based approaches in forestry practices.	n/a

Economic resilience and adaptive capacity	Increased economic resilience and adaptive capacity	Develop training programmes in effective saving methodologies and access to financial education to better manage meagre resources in vulnerable communities; Investigate the potential for expanding sectors and kick-starting new industries that are likely to thrive as a direct or indirect result of climate change effects; Educate both informal and formal businesses on the potential economic implications of climate change risks and provide support on how to better prepare for these risks in advance; Encourage businesses to relocate to less hazardous areas through incentives and tax rebates	n/a
Environment and ecological infrastructure resilience	Increased environment and ecological infrastructure resilience and adaptive capacity	Adopt climate resilient approaches to natural resource management to restore and maintain ecosystem goods and services; Conduct research into the value of ecosystem services and the economic benefits of restoring these services in comparison to the development of hard infrastructure; Protect and conserve South Africa's most vulnerable ecosystems, landscapes and wildlife, and monitor and control the spread of alien invasive species; Monitor and control the spread of alien invasive species that benefit from climate change; Promote the expansion of tree cover, forests and forest plantations in order to maintain the production of wood raw materials, and help reduce temperatures in cities, amongst other benefits; Investigate the potential effects of an expanded forestry sector on water availability; Support farmers (male and female) to use and manage water more sustainably; Ensure that water management institutions incorporate adaptive management responses; Provide training for the public and private sectors on the value of ecosystem services and the benefits of restoring them	n/a
Physical infrastructure	Increase physical infrastructure resilience and adaptive capacity	Invest in high-quality, climate resilient and eco-sustainable / reduced impact/ public infrastructure and materials; Encourage the private sector to build in low climate risk areas, using resilient materials, through incentives and tax rebates; Create a more adaptive energy system to reduce dependence on a centralised system and increase distributed generation, especially in rural areas; Adopt water-wise water management practices in urban areas	n/a

SOUTH SUDAN

SECTOR	OBJECTIVE	ACTIVITIES	TIMELINE	COSTS
Water resources	Integrate climate change adaptation into water resources management	Enhance access to water considering growing climate threats through integrated watershed management, wetland management and improved waste management; Establish pilot program for climate-smart integrated water resource management, including capacity development and demonstration project; Promote the formulation of water resource management plans at all levels of government; Build institutional capacity in water resources management; Introduce and expand water reservoir water management approaches	1-5 years	n/a
Water resources	Improving management and climate resilience of community and household resources	Establish/strengthen/build capacity of community-based micro-watershed committees to lead planning and management of community water resources; Promote harvesting and retention of water for different users through community-based watershed management (e.g., contour/assess hydropower dams, channel maintenance, afforestation); Improve ground water recharge and soil moisture retention through community-based soil and water conservation measures; Enhance resilience to drought through creation of water points; Introduce rainwater harvesting, recycling and water savings techniques and technologies to communities and households; Establish regulatory and monitoring measures to prevent water pollution and to discourage wetland encroachment by settlement; Establish pilot, demonstration and incentive programs to encourage the use of solar and wind powered water provision technologies	1-5 years	n/a
Water resources	Strengthen data, information and knowledge management capabilities to inform climate-	Develop digital watershed atlas showing hydrological delineations and major land-uses identifying the most vulnerable catchment areas; Progressively develop aquifer maps and local-scale water vulnerability information to inform siting	1-5 years	n/a

	smart water resources management	of haffirs and boreholes for human and livestock use; Develop system to monitor water quality in flood-prone areas to ensure the safety of drinking water during and after flooding		
Energy	Incorporate climate resilience into energy sector planning	Conduct analysis to determine potential climate impacts under different scenarios on electricity demand and generation capacity to inform National Electricity Policy; Establish regulatory framework, procedures and guidelines to ensure climate resilience is incorporated into the design of new energy generation and transmission infrastructure and the retrofitting of existing infrastructure; Promote the generation and use renewable energy and distributed energy generation to enhance local resilience; Promote energy saving technologies, such as improved charcoal stoves, biogas and solar; Establish incentives program to promote LPG and electrical cars and associated infrastructure;	1-5 years	n/a
Ecosystems, environment and biodiversity conservation	Incorporate climate change adaptation into environment and biodiversity conservation sector policy and planning frameworks	Establish and incorporate mechanism for coordination with NAP in National Biodiversity Coordination Framework; Incorporate projected effects of climate change on invasive species spread into Strategy on Invasive Alien Species; Incorporate EbA considerations into national policy review and regulatory/policy revisions conducted under NBSAP; Identify appropriate targets, indicators and means of verification for climate change into Integrated National Biodiversity Monitoring, Assessment and Reporting System. Incorporate data needs into expansion of hydrometeorological monitoring network; Incorporate data needs for Integrated National Biodiversity Monitoring, Assessment and Reporting system into hydrometeorological network; Develop and implement procedures to incorporate climate change adaptation functions (e.g., avoided costs and losses due to future climate change shocks and stressors) into national biodiversity and ecosystem valuation system; Integrate Ecosystem-based Adaptation (EbA) into Ministry of Wildlife,	1-5 years	n/a

		Conservation and Tourism (MWCT) plans and guidance for capacity development and mainstreaming biodiversity values into national policies and plans		
Ecosystems, environment and biodiversity conservation	Improve sectoral capacity to mainstream and implement climate change adaptation	Establish and capacitate climate change and resilience unit within South Sudan Wildlife Service; Conduct research on high conservation value wildlife habitat vulnerability to changing climate conditions; Conduct climate change analyses to inform expansion of the protected area network of South Sudan; Promote conservation measures that protect biodiversity and increase ecosystem resilience; Establish waterpoints for wildlife in protected areas to reduce the negative impacts of drought on animal populations; Incorporate climate change considerations into forest reserve management plans to protect watersheds	1-5 years	n/a
Ecosystems, environment and biodiversity conservation	Implement community led EbA and NRM measures	Support community-based sustainable utilization and management of wetlands in selected parts of South Sudan; Promote afforestation of degraded landscapes and watersheds using multi-use forest species (agroforestry) to increase community safety nets and diversify livelihoods; Introduce and scale up climate change resilient, participatory and sustainable community-led forest management	1-5 years	n/a
Human Settlements	Urban and regional planning for climate change adaptation improved	Identify vulnerabilities and create resilience for communities living in montane areas in the face of climate change; Reduce vulnerability of population by integrating climate change considerations into land use planning; Ensure that building codes reflect the expected impacts of climate change; Develop improved flood risk maps for urban areas; Create map and buffer zones and relocate vulnerable communities away from flood prone areas;	1-5 years	n/a
Human Settlements	Payam and Boma Development Committees empowered to lead local adaptation efforts	Ensure capacity building and participation of the society, local communities, indigenous peoples, women, men, youth, civil organizations and private sector in national and subnational climate change planning by developing formal and mandatory inclusive stakeholder participation procedures; Strengthen the	1-5 years	n/a

		<p>adaptative capacity of the population through transparent and inclusive mechanisms of social participation in the implementation of adaptation interventions, designed with gender and human rights approaches incorporated throughout;</p> <p>Develop capacity building program for communities on use of weather and climate data generated by weather stations;</p> <p>Promote and upscale traditional conflict management systems to address projected increase in conflicts due to climate change;</p> <p>Develop and implement community-based adaptation plans</p>		
Human Settlements	Climate change considerations incorporated into WASH system investments	<p>Develop risk maps and regulatory codes to inform solid and liquid waste disposal site selection and management;</p> <p>Develop regulatory codes and guidance materials based on future climate change scenarios to ensure new investments in water and sanitation infrastructure are resilient to climate shocks and stresses;</p> <p>Build climate resilient WASH infrastructure in regional capital cities;</p> <p>Establish demonstration sites and provide training programs for small scale WASH innovations for rural towns;</p>	1-5 years	n/a
Disaster Risk Reduction	Climate-smart disaster risk reduction practices	<p>Utilize climate data and projections to develop disaster risk maps for flooding, drought, earthquakes and crop pests;</p> <p>Establish toolkit and capacity development/demonstration program for ecosystem-based disaster management and climate change adaptation;</p> <p>Implement reforestation and tree planting (including fruit trees and indigenous species) to reduce land degradation and soil erosion in South Sudan</p>	1-5 years	n/a
Disaster Risk Reduction	Improving early warning systems and capabilities	<p>Rehabilitate and expand hydrometeorological monitoring network to support improved early warning capabilities;</p> <p>Design and implement communications and information management protocols for national and state level EWS;</p> <p>Establish capacity development program for decision makers for effectively using DRR and EWS data and information;</p> <p>Establish and implement locally appropriate end user notification systems so that all South Sudanese have access to EWS notifications;</p> <p>Coordinate/negotiate with cellular service providers to offer no-</p>	1-5 years	n/a

		cost EWS notifications to telecom subscribers; Increase investments in disaster prevention mechanisms, such as EWS, rather than disaster response mechanisms		
Disaster Risk Reduction	Enhancing community awareness and preparedness for climate shocks and disasters	Increase knowledge of climate change and environmental issues through a national awareness raising campaign and inclusion in school curricula; Reduce water-borne diseases due to flooding and river overflow resulting from climate extremes. Develop mechanisms to reduce water-borne diseases with complementary awareness raising program; Promote development of grassroots informal social networks. Household reliance on borrowing and gift receiving from members of self-help groups, relatives, neighbors, families and communities is a highly relevant coping strategy in South Sudan and strongly determines the ability of households to better cope with shocks. These informal social networks should be promoted; Improve and enhance community-based disaster management plans and preparedness and response capability for climate related disasters; Educate communities on disaster management at national, subnational and grassroots levels; Increase awareness of disaster risks through media outreach and cultural heritage; Enhance the development of community-based disaster management action plans	1-5 years	n/a
Disaster Risk Reduction	Strengthening national level disaster preparedness and response capabilities	Establish formalized protocols and procedures for activating People's Defense Force during emergency declarations. Develop coordination procedures for subnational governments and the People's Defense Force; Establish and implement training program for People's Defense Force for disaster preparedness, response and recovery. Strengthen special units such as the fire brigade and the Mercy Corp branch; Formulate prepositioning plan based on international best practice to establish supply caches in vulnerable locations to improve disaster response; Establish system for conducting disaster simulations at the	1-5 years	n/a

		national and state level to improve coordination and preparedness and community-based disaster drills to improve community preparedness and awareness		
Tourism and recreation	Establishing Enabling Conditions for Climate-smart Tourism Development	Conduct research on wildlife species habitat and ecosystem vulnerability to changing climate conditions focusing on Sudd wetland, Boma-Jonglei landscape and Imotong, Didinga and Dongotono mountains; Establish regulatory framework to promote climate-smart tourism and to avoid maladaptive investments in tourism sector; Develop targeted knowledge products on climate change impacts on tourism potential and sustainable tourism business models for investment community; Improve coordination, planning linkages and knowledge sharing on climate change between tourism and biodiversity sectors; Establish specific regulations on climate sensitive wildlife tourism and explore community enforcement mechanisms	1-5 years	n/a
Tourism and recreation	Supporting ecotourism development for increasing rural resilience	Establish and disseminate principles for climate-adaptive sustainable ecotourism development; Develop capacity building program for rural communities to support nature-based (ecotourism) and cultural tourism; Develop licensing and branding framework to register and promote rural ecotourism ventures; Establish community grants program to catalyze community-based tourism businesses; Develop climate resilient and sensitive road infrastructure and tourism facilities in national parks and game reserves; Identify local and regional human drivers of ecosystem degradation and wildlife exploitation and develop strategies for shifting behaviors to support ecosystems and biodiversity	1-5 years	n/a
Health	Improve health sector capacities to address climate change related health threats	Conduct comprehensive vulnerability assessments in the health sector under current and future climate change scenarios; Mainstream climate change, including future climate scenarios, into health sector strategies, plans and policies; Establish research program to understand the impacts of climate change on the health of vulnerable groups; Establish a training program	1-5 years	n/a

		on climate change related health risks for health sector workers, with special focus on community health workers (CHW); Develop action plans and strategies to control infectious diseases and vectors		
Health	Establish early warning capabilities for climate change related health threats	Establish surveillance system for tracking current and emerging disease risks; Develop monitoring guidelines and train CHWs to monitor climate change related health threats; Expand capacity for modelling and forecasting climate related health effects; Develop risk maps to identify areas and populations most susceptible to climate change related health hazards (e.g., heat, disease); Develop health hazard forecasting products for early warning based on climate and meteorological data; Develop and implement preparedness and response plans for health threats (e.g., heat waves, diseases);	1-5 years	n/a
Health	Improve public awareness of health threats and adaptive capacity to address threats	Develop, disseminate and implement guidance and provide capacity building support to state and local health sector officials on health effects of climate change at national and subnational levels; Promote climate health education in school curricula; Establish targeted public information and messaging campaign to promote risk reducing behavior change in communities and to raise awareness on climate change induced diseases, with special emphasis on highly vulnerable groups; Build capacity to consider climate change related health threats in urban, rural and regional planning; Develop low-cost, user friendly blueprints for latrines, hand washing stations and other public facilities to minimize vector promotion of diseases;	1-5 years	n/a

Health	Establish partnerships to address health threats from climate change	Develop, disseminate and implement health guidelines for other line agencies to encourage multifunctional use of new buildings to provide public health benefits (e.g., cooling centers); Work with cellular companies to explore partnerships to provide early warning messages and other information via SMS; Coordinate with Department of Climate Change to develop risk indicators, data/information sources and data management protocols for monitoring and early warning systems; Incorporate innovative architectural designs into new schools and develop siting guidelines to reduce adverse impacts of climate change (e.g., heat) on students; Establish learning and knowledge sharing partnerships with other countries in the region for health adaptation and innovation	1-5 years	n/a
Industry and Infrastructure	Improve institutional capacities for climate resilient infrastructure planning	Conduct vulnerability assessments of existing infrastructure under current and projected climate change conditions to inform planning and design; Compile hazard maps (e.g., flooding, earthquakes and landslides) featuring current and projected exposure zones; Compile best practices and develop climate proofing/resilience guidelines for infrastructure design, construction and maintenance; Develop sectoral standards and regulations to ensure new infrastructure investments incorporate climate proofing guidance; Formulate list of priority sector infrastructure upgrades and retrofits and incorporate into development partner pipelines; Promote transfer and piloting of transportation technologies that are resilient to the adverse effects of climate change for roads and large-scale transportation of goods and technologies for the protection of infrastructure, particularly in flood prone areas	1-5 years	n/a
Industry and Infrastructure	Construct new and retrofit existing critical infrastructure for climate resilience	Improve environmental management in the oil industry to reduce the impacts of floods and droughts on industry infrastructure and operations; Build flood protection infrastructure including, improved drainage systems, flood barriers and retention areas;	1-5 years	n/a

Agriculture, Livestock and Fisheries	Agriculture infrastructure supports climate resilience	Introduce and expand irrigated agriculture for crop and livestock production; Improve agricultural infrastructure and facilities to support climate-smart multi-cropping systems; Establish and improve facilities to reduce post-harvest waste and to enhance value-added food processing (e.g., pasta, biscuits and bread) in market centres; Improve storage and conservation of seeds and introduce early maturing varieties	1-5 years	n/a
Agriculture, Livestock and Fisheries	Climate adaptive land and resource management	Enhance resilience to rainfall variability through rangeland rehabilitation; Encourage soil erosion control measures, including early adoption in areas susceptible to increased rainfall under climate change scenarios; Promote water technologies for water savings, recycling, harvesting, irrigation and sustainable management for agricultural purposes; Improve community and farm-level water resources management and incorporate projected moisture availability and variability into local-level water management and planning	1-5 years	n/a
Agriculture, Livestock and Fisheries	Supporting climate resilient agriculture practices	Strengthen agriculture extension services to support community-based climate-smart agriculture including improved seed and crop management practices; Improve animal health systems to reduce the vulnerability of pastoral communities to climate change; Identify and introduce drought and disease resistant varieties of crops with shorter maturity and higher yields; Provide insurance to help farmers, especially smallholder agriculturalists and pastoralists by enhancing their resilience and reducing risk when investing in agriculture and animal husbandry; Establish and strengthen farmers' organizations and CBOs and establish capacity building, demonstration and support programs to encourage climate-smart agriculture; Support local seed production and private sector led seed development system; Undertake innovative and integrated pest and disease control for crop pests and diseases; Improve post-harvest crop handling and resilience of value chains, including improved regulations and phytosanitary procedures	1-5 years	n/a

<p>Agriculture, Livestock and Fisheries</p>	<p>Promote climate resilient fisheries management</p>	<p>Provide fingerlings, feed production and the appropriate tools and equipment for community managed fisheries and aquaculture ventures; Conduct studies on potential climate impacts on fisheries and formulate climate-smart strategies to increase fisheries productivity; Conduct studies and research to support the commercialization of fisheries and establish capacity building program to empower fisheries entrepreneurs and to utilize climate resilient fisheries management practices, climate resilient inland and village pond management; Promote sustainable value chain development to utilize climate resilient fisheries management practices, climate resilient inland and village pond management; Conduct research on and promote traditional fishing regulations that contribute to resilience and sustainable use; Incorporate observed and projected climatic changes into fishery policies, regulations and institutions to improve resilience fish production</p>	<p>1-5 years</p>	<p>n/a</p>
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SRI LANKA

SECTOR	OBJECTIVE	ACTIVITIES	INDICATORS	IMPLEMENTERS	TIMELINE	COSTS
Food security	Enhance the resilience of crops, animals, fish and agroecosystems against heat and water stress	Screen existing varieties/breeds for heat and water stress. Develop tolerant varieties (paddy, OFC, horticulture) - Heat tolerant - Drought tolerant - Short age (early maturing) Develop heat tolerant breeds (Focus: livestock and poultry)	<ul style="list-style-type: none"> · Number of existing varieties/breeds gone through the screening process · Number of tolerant varieties developed · Number of heat tolerant breeds developed 	DOA; DAPH; AFoU; VRI; NLDB	3-10 years	RS 20 million
Food security	Develop and promote water efficient farming methods	<ul style="list-style-type: none"> · Reduce field-level irrigation water losses · Promote micro-irrigation techniques · Develop water efficient farming methods · Promote on-farm rainwater harvesting · Promote reuse of wastewater 	<ul style="list-style-type: none"> · % of reduction in irrigation water losses · Number of micro-irrigation initiatives · Number of water efficient farming methods developed · Number of on-farm rainwater harvesting initiatives 	DOA; AFoU; DI; DAD; MASL	4 years	RS 15 million
Food security	Adjust cropping calendars according to climate forecasts	<ul style="list-style-type: none"> · Develop a system for timely issuing of seasonal and medium-term weather forecasts (Focus: mobile and internet alert systems) · Adjust cropping calendars according to the seasonal weather forecasts 	<ul style="list-style-type: none"> · System is developed · Cropping calendars adjusted 	DM; DOA; DAPH	7-10 years	RS 35 million

Food security	Develop systems for timely issuing and communicating of climate information to farmers	<ul style="list-style-type: none"> · Develop a system for timely issuing of short-term weather forecasts · Strengthen the early warning systems · Strengthen fishing Vessel monitoring and tracking system (Focus: Coastal and deep sea fishing) · Develop mobile phone based communication systems · Develop safety plans and promote use of safety equipment 	<p>Forecasting system developed</p> <ul style="list-style-type: none"> · Money allocated for strengthening the early warning system · Fishing Vessel monitoring and tracking system established · Mobile phone based communication system developed · Safety plans are developed · Number of awareness programs on the use of safety equipment 	DM; DOA; DFAR; DAPH	4 years	RS 195 million
Food security	Develop research institute capacity for conducting research on tolerant varieties/breeds and climate resilient farming methods	Develop research institutes' capacity for conducting research on tolerant varieties and water efficient farming methods.	Number of training programme	NSF; DOA; VRI; SLCARP; AFoU	7 years	RS 100 million
Water resources	Develop and implement watershed management plans for critical watershed areas	<ul style="list-style-type: none"> · Identify and map critical watersheds · Develop and implement watershed management plans for critical upper watersheds - Declare critical catchments as reserves - Incorporate water safety plans 	<ul style="list-style-type: none"> · Number of watershed plans developed · % of canopy cover increased in the catchment areas of irrigation and water supply reservoirs · Number of conservation framing methods adopted · Amount of money 	ID; MASL; DAD; CEB; NWSDB; WRB; PCs	10 years	RS 220 million

		<ul style="list-style-type: none"> · Increase the canopy cover in catchment areas of - Irrigation reservoirs - Water supply reservoirs - Hydropower reservoirs · Promote conservation farming methods in reservoir catchments · Launch participatory cascade management programmes in selected village tank catchments · Incorporate climate impact assessment for the future water resources development plans 	<ul style="list-style-type: none"> allocated/spent on promotion of conservation farming methods · Number of workshops carried out in promotion · Number of villages covered by the participatory cascade management programmes · Amount of money allocated/spent on participatory 			
Water resources	Increase the efficiency of use and reduce losses of irrigation water	<ul style="list-style-type: none"> · Promote efficient domestic water use practices: <ul style="list-style-type: none"> - Domestic rain-water harvesting systems (e.g. ferro-cement tanks; roof top) - Domestic water treatment facilities · Increase the efficiency of use and reduce losses of irrigation water <ul style="list-style-type: none"> - Re-use of drainage (waste) water - Water saving irrigation applications: micro irrigation, drip irrigation - Efficient use of groundwater: Production wells , boreholes - Rainwater harvesting: Pathaha · Improve maintenance of existing reservoirs 	<ul style="list-style-type: none"> Number of awareness campaigns launched to promote efficient domestic water use practices · Money allocated/spent on promoting efficient domestic water use practices · Number of awareness campaigns on promoting means of reducing wastage and losses in irrigation · Money allocated/spent on promoting means of reducing wastage and losses in irrigation · Money allocated/spent on improving the maintenance of existing reservoirs · Number of village tanks rehabilitated · Number of village tanks with improved conveyance efficiency 	ID; MASL; DAD; IWMI; NWSDB; DOA	7 years	RS 100 million

		<ul style="list-style-type: none"> - Improve the water conveyance efficiency - Rehabilitation of village tanks to design capacity · Promote wastewater recycling for industrial and aquaculture water uses 				
Water resources	Assess the current practices of water management for climate resilience and identify ways to improve them	<ul style="list-style-type: none"> · Assess short-, medium- and long-term impacts of climate change on water resources management in the country · Screen current practices of water management for climate resilience and identify ways to improve them · Explore climate resilient indigenous practices of water management and identify ways to integrate them into modern practices 	<ul style="list-style-type: none"> · An assessment report completed and published · Number of screened water management practices for climate change resilience · Number of indigenous practices of water management identified and integrated 	ID; MASL; DAD DM; IWMI; AFoU/SFoU; NSF; NRC; CARP	4 years	RS 45 million
Water resources	Identify and map areas vulnerable to droughts and flood hazards and prepare disaster risk management plans	<ul style="list-style-type: none"> · Identify, map and collect information on areas most vulnerable to flood , drought and land slide hazards · Develop disaster risk management plans for vulnerable areas · Establish necessary facilities for improvement of drainage in susceptible areas · Develop dam safety plans and promote use of safety measures and equipment 	<ul style="list-style-type: none"> · Number of areas identified and completed with data collection · Number of areas completed with finalized flood risk management plans · Number of areas with established facilities for improvement of drainage · Number of dam safety plans developed 	DMC; NBRO; ID; MASL; DAD; NWSDB; DM	4-7 years	RS 90 million

Water resources	Design rational intra-basin and trans-basin strategies to harness periodic surpluses of water in storage facilities	<ul style="list-style-type: none"> · Design rational strategies to harness excess water in storage facilities (Focus: Intra-basin and trans-basin approaches) 	<ul style="list-style-type: none"> · Number of strategies designed to harness the excess water in storage facilities. · Number of workshops/training programmes on designing strategies to harness the excess water in storage facilities 	ID; MASL; DAD; AFoU; NWSDB; DM	4 years	RS 20 million
Coastal and marine sector	Implement a continuous programme for monitoring shore line changes	<ul style="list-style-type: none"> · Identify critical shoreline parameters for regular monitoring · Implement continuous monitoring of shore line changes · Prepare maps on low-lying areas vulnerable to inundation · Prepare a data base on existing coastal habitats · Promote participation of coastal communities in monitoring sea level rise · Establish the mean sea level 	<ul style="list-style-type: none"> · Number of parameters identified · Regular (Quarterly) monitoring reports produced on shore line changes · Number of area maps developed/produced on inundation · A fully functioning data base is created · Number of participants from coastal communities who are enlisted 	CC&CRMD; NARA; SD	4-10 years	RS 203 million
Coastal and marine sector	Develop shore shoreline management plans including M&E programmes	<ul style="list-style-type: none"> · Develop shoreline management plan including M & E programme · Update CZMP to ensure greater concern over climate change impacts · Prepare SMA plans to vulnerable areas · Revise set back limits considering the sea level rise · Undertake physical protection measures in critical areas 	<ul style="list-style-type: none"> · Number of shoreline management plans developed · CZMP is updated to ensure greater concern over climate change impacts · Number of vulnerable areas with completed SAM plants · % of the shoreline areas with established set back limits to take account of sea level rise 	CC&CRMD	4-10 years	RS 2.9 billion

		<ul style="list-style-type: none"> - Establish green belts and increase vegetation covers - Undertake sand nourishment - Build coastal defense structures in strategic locations (Focus: off-shore breaks, revetment, sea walls, break waters etc.) 	<ul style="list-style-type: none"> · % shoreline with established of physical protection measures 			
Coastal and marine sector	Study impacts of sea level rise on costal habitats over short-, medium and long-term horizons	<ul style="list-style-type: none"> Study impacts of sea level rise on coastal habitats over short-medium- and long-term horizons · Study erosion trends and identify appropriate protection measures · Conduct research studies on coastal water quality and hydrodynamics in relation to climate change · Establish regional collaborations on research and monitoring 	<ul style="list-style-type: none"> · Number of studies completed/published · Amount of money allocated/spent on research studies · Number of regional collaborative studies undertaken/completed/published · Number of collaborative workshop conducted · Amount of money allocated/spent on regional collaborative studies 	NARA; CC&CRMD; MEPA; DFAR; EFoU/SFoU	7-10 years	RS 128 million
Coastal and marine sector	Identify, declare, collect information and prepare maps on vulnerable areas to extreme events and inundation	<ul style="list-style-type: none"> · Identify and declare vulnerable coastal areas to extreme events · Collect information and prepare maps on vulnerable areas to extreme events · Prepare emergency response/contingency plans and guidelines for vulnerable areas · Establish physical protection measures in critical areas - Establish green belts and increase vegetation covers 	<ul style="list-style-type: none"> · Number of coastal areas identified that are vulnerable to extreme events · Number of vulnerable coastal areas where data collection has completed · Number of coastal areas where completed vulnerability maps are developed · Number of vulnerable coastal areas with completed emergency response/contingency plans · % of identified vulnerable shore 	CC&CRMD; DMC; NARA	7-10 years	RS 100 million

			line areas with completed physical protection measures			
Coastal and marine sector	Conduct awareness programmes on sea level rise and extreme events to coastal communities to empower them for facing the risks of climate change	<ul style="list-style-type: none"> · Conduct awareness programmes on sea level rise and extreme events to coastal communities to empower them for facing climate change impacts · Prepare and implement participatory management plans for the conservation and rehabilitation of sensitive coastal habitats with the collaboration of local communities and CSOs - Conservation of mangrove, salt marshes and sea grass beds - Sand dune rehabilitation - Restoration of mangroves - Restoration of coral reefs 	<ul style="list-style-type: none"> Number of awareness programmes conducted on sea level rise to coastal communities · Number of coastal communities with fully developed participatory management plans for the conservation and rehabilitation of sensitive coastal habitats 	CC&CRMD; NARA; MEPA; DWLC; FD	10 years	RS 215 million
Health	Establish a surveillance programme for detection and monitoring of climate induced diseases	<ul style="list-style-type: none"> Establish a surveillance program for detection and monitoring of climate-induced diseases · Prepare vulnerability maps on climate related health hazards · Establish a mechanism for sharing meteorological , clinical and entomological information (Focus: central and provincial data) 	<ul style="list-style-type: none"> · Surveillance programme established · Number of vulnerability maps produced · Money allocated for establishing a mechanism for sharing meteorological , clinical and entomological information 	MOH; MRI	4 years	RS 33 million
Health	Conduct research studies on impact of	<ul style="list-style-type: none"> Conduct research studies on impact of climate change on prevalence and spread of - Vector bone diseases 	<ul style="list-style-type: none"> Number of research studies conducted Amount of money allocated/utilized for doing 	MOH MRI NSF	4-10 years	RS 50 million

	climate change prevalence and spread of vector borne and pathogenic diseases	<ul style="list-style-type: none"> - Pathogenic diseases Assess critical factors for controlling climate induced disease incidents Identify plausible strategies for management of climate-induced disease incidents 	<p>research</p> <ul style="list-style-type: none"> · Assessment on the critical factors for controlling climate-induced disease incidents finalized · Number of plausible strategies identified for management of climate-induced disease incidents 	NRC MFoU/SFoU		
Health	Strengthen the mechanisms for sharing information between disaster management and health management agencies	<p>Strengthen early warning systems of extreme events</p> <p>Strengthen the mechanism for sharing information between disaster management and health management agencies</p>	<ul style="list-style-type: none"> · Amount of money allocated/spent on the activities on the early warning system · Number of activities initiated to strengthen the early warning system · Amount of money allocated/spent on establishment of the mechanism · Number of information sharing workshops conducted 	DMC DM MOH MRI	4-10 years	RS 80 million
	Launch awareness programmes on climate and health risks for healthcare workers and the public	<p>Strengthen the alertness of health system against climate-induced disease incidents</p> <ul style="list-style-type: none"> · Launch an awareness programme on climate and health risks for <ul style="list-style-type: none"> - Healthcare workers - Public · Develop/review guidelines for management of climate-induced disease incidents · Develop research institutes' capacity for conducting research on climate and health 	<p>Amount of money allocated/spent for Strengthening the alertness of health system against climate-induced disease incidents</p> <ul style="list-style-type: none"> · Number of awareness programme conducted · Guidelines are developed and published · Amount of money allocated for the development · Number of training programme conducted 	MOH MRI NSF NRC MFoU/SFoU	4-7 years	RS 60 million

		issues including multidisciplinary collaborative research	· Amount of money spent on purchasing laboratory equipment			
Human settlements and infrastructure	Promote climate resilient building designs	<p>Mainstream climate resilience in physical and urban planning and incorporate them for planning for development projects</p> <ul style="list-style-type: none"> - Adopt green building concepts in planning - Encourage of wind corridors and open spaces - Promote planning the human settlement schemes so as to minimize the adverse effect - (and promote) on localized and regional water resources · Promote climate resilient building designs - Develop specifications, standards, guidelines, promotion of alternative building materials - Create public awareness - Provide training to industry stakeholders · Promote use of alternative materials - Identify and assess alternative materials - Assess the availability - Create public awareness - Provide training to industry stakeholders · Develop/review appropriate sector specific 	<ul style="list-style-type: none"> · Number of workshops conducted in mainstreaming climate resilience in physical and urban planning · A document on contacting green building concepts are prepared and published · Number of workshops in promoting climate resilient building designs · Number of public awareness programmes conducted in promoting climate resilient building designs · Number of training workshops conducted for industry stakeholders in promoting climate resilient building designs · Number of workshops in promoting use of alternative materials · Number of public awareness programmes conducted in promoting use of alternative materials · Number of training workshop conducted for industry stakeholders in promoting use of alternative materials · A document contacting appropriate sector specific 	<p>UDA LAS NBRO NPPD ICTAD AchtFoU TCFoU PCs CHPB SLSI ITI</p>	4-10 years	RS 61 million

		building standards and guidelines for urban, rural and estate sectors · Provide standardization of equipment such as A/C and refrigerators so they emit less GHG's	building standards for urban, rural and estate sectors are prepared and published			
Human settlements and infrastructure	Revise building approval systems to increase the climate resilience	Revise building approval systems to ensure climate resilience - Expand the coverage of the guidelines to ensure climate resilience and minimize health impacts - Strengthen the enforcement and implementation through local governments	Number of workshops conducted in revising the building approval systems to ensure climate resilience · Number of awareness programmes conducted at the local government levels to Strengthen the enforcement and implementation through local governments	UDA PCs Las	10 years	RS 5 million
Human settlements and infrastructure	Conduct research studies on climate resilient building designs, green building concepts and alternative materials	· Conduct research studies on - Climate resilience building designs - Practical applications of green building concepts - Alternative materials	· Amount of money allocated/spent on research activities · Number of research activities conducted	NBRO ICTAD CHPB AchFoU TCFoU NSF NRC	10 years	RS 25 million

Human settlements and infrastructure	Conduct training programmes on climate resilient buildings for industry stakeholders	<ul style="list-style-type: none"> · Conduct training programmes for industry stakeholders - Public officers - Builders - Construction workers - Architects - Designers - Environmental design department of Universities, Ex: University of Moratuwa 	<ul style="list-style-type: none"> · Number of training programmes conducted · Amount of money allocated/spent on training programmes 	ICTAD AchFoU TCFoU	10 years	RS 15 million
Human settlements and infrastructure	Prepare hazard preparedness plans for urban, rural and estate settlements	<ul style="list-style-type: none"> Prepare hazard preparedness plans for urban, rural and estate settlements including - hazard mapping - disaster response planning - awareness creation - early warning · Revisit existing preparedness plans for climate change · Develop and enforce zoning system based on hazard vulnerability 	<ul style="list-style-type: none"> · Number of hazard preparedness plans prepared for urban, rural and estate settlements including · Number of awareness programmes conducted in developing and enforcing enforce zoning system based on hazard vulnerability 	DMC NPPD UDA NBRO	4-10 years	RS 44 million

Ecosystem and biodiversity	Conduct research studies on climate change impacts on ecosystems and biodiversity	<p>Conduct research studies on climate change impacts on ecosystems and biodiversity</p> <ul style="list-style-type: none"> - Modelling impacts of climate change on bio-diversity - Changing patterns of precipitation and boundary shifts of climatic zones - Causal factors of forest die-back and degradation of ecosystems - Traditional methods of biodiversity management - Life cycle studies: e.g.in the sex ratios - Ex-situ conservation 	<ul style="list-style-type: none"> · Amount of money allocated/spent on research activities · Number of research studies completed and published 	FD DWLC DNBG DNZG SFoU/AFoU DM IUCN NARA NSF	10 years	RS 150 million
Ecosystem and biodiversity	Prepare adaptive management programmes for climate sensitive ecosystems	<p>Prepare adaptive management programmes for climate sensitive ecosystems</p> <ul style="list-style-type: none"> - Identify and map ecosystems that are highly sensitive to climate impacts ('hot spots') - Demarcate the vulnerable sites - Prepare adaptive management programmes · Protect marshes/flood retention areas vulnerable to thermal stress - Identify threatened areas and map - Restrict land conversion of wet lands - Develop special management plans 	<ul style="list-style-type: none"> · Number of adaptive management programmes prepared · Amount of money allocated/spent on preparing adaptive management programmes · Number of workshops conducted in preparing the adaptive management programmes · Number of special management plans developed for protecting marshes/flood retention areas vulnerable to thermal stress · Number of threatened areas identified for protecting marshes/flood retention areas 	FD DWLC DNBG DNZG CC&CRMD NARA IUCN	4-8 years	RS 140 million

		<ul style="list-style-type: none"> - Enhance the enforcement of law · Develop a comprehensive plan for mitigating wild/forest fire incidents - Identify hazard prone areas and prepare maps - Training of staff - Acquire new equipment - Increase awareness. - Formation of CBOs · Prepare recovery plans for highly threatened ecosystems are and species - Ex-situ conservation of highly threatened species - Captive breeding and propagation - Reintroduction to natural systems 	<ul style="list-style-type: none"> vulnerable to thermal stress · % land area restricted to conserve wetlands · Amount of money allocated/spent on enforcement activates · Number of vulnerable areas with comprehensive plan for mitigating wild fire incidents · Number of recovery plans prepared for highly threatened ecosystems are and species 			
Ecosystem and biodiversity	Develop research institutes' capacity for conducting research on climate change impacts on ecosystems and biodiversity	<ul style="list-style-type: none"> · Develop research institutes' capacity for conducting research on climate change impacts on ecosystems and biodiversity · Strengthen the existing capacities for genetic preservation of fauna and flora. 	<ul style="list-style-type: none"> · Amount of money allocated/spent on developing research institutes' capacity for conducting research on climate change impacts on ecosystems and biodiversity · Number of studies conducted on genetic preservation of fauna and flora · Amount of money allocated on purchasing technical equipment for genetic preservation of fauna and flora 	FD DWLC NSF DOA SFoU/AFoU IUCN	10 years	RS 100 million

Tourism and recreation	Increase the awareness of tour industry operators on climate change and its impacts	<p>Diversify the tourism products to meet the changing conditions</p> <ul style="list-style-type: none"> - Increase the portfolio of destinations and attractions - Embrace new tourism concepts - Identify new themes (e.g. adventure tourism) · Develop collaborative plans with key stakeholders to adjust tourism operations in different locations - Nature tourism: Wildlife Dept., Forest Dept. - Cultural tourism: Dept. Archeology · Increase the awareness of tour industry operators on climate change and its impacts - Prepare guidelines for operators and guides · Increase the climate preparedness in organizing and implementing tour operations - Identify comfort/discomfort zones - Prepare toolkits/guidelines for operators and guides 	<ul style="list-style-type: none"> · Number of research/workshop conducted to identify new tourism concepts and themes · Number of collaborative plans developed to adjust tourism operations in different locations · Number of workshops conducted to developed collaborative plans developed to adjust tourism operations in different locations · Number of awareness programmes conducted to increase the awareness of tour industry operators on climate change and its impacts · Number of initiatives taken to improve the climate preparedness element in organizing and executing tour operations · Number of tourism facilities identified in vulnerable areas (e.g. low-lying beaches; disaster prone areas) and make arrangements to improve the resilience 	SLTDA SLTPB TBSL FD DWLC CC&CRMD DArch THASL	4-7 years	RS 53 million
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Tourism and recreation	Identify tourism facilities in vulnerable areas and make arrangements to increase the climate resilience of them	<p>Identify tourism facilities in vulnerable areas (e.g. low-lying beaches; disaster prone areas) and make arrangements to improve the resilience (Focus: vulnerability assessment, retrofitting, climate proofing)</p> <ul style="list-style-type: none"> · Prepare guidelines on managing emergencies in tour operations · Train tour operators on emergency management strategies · Design tourism infrastructure to meet the safety needs of operations · Build system's capacity for smooth switching to alternate plans · Establish emergency communication channels for tourists and operators (Focus: mobile and internet based communication) 	<ul style="list-style-type: none"> · Guidelines on managing emergencies in tour operations are developed · Number of tour operators trained on emergency management strategies · Number of tourism infrastructures designed to meet the safety needs of operations · Amount of money allocated on developing system's capacity for smooth switching to alternate plans · Amount of money allocated on establishing emergency communication channels for tourists and operators 	DMC SLTDA SLTPB TBSL THASL	4-10 years	RS 108 million
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Tourism and recreation	Assess the current promotional strategies with connection to emerging scenarios of climate change and adjust them accordingly	Assess the current promotional strategies with connection to emerging scenarios of climate change (Focus: beach tourism, nature destinations) · Adjust the promotions to suit the different climate scenarios - Promotions according to seasonal variations in climate - Rebranding attractions to match the changing conditions - Identification of alternative destinations	· Assessment report on current promotional strategies with connection to emerging scenarios of climate change is published · Number of initiatives taken to Adjust the promotions to suit the different climate scenarios	SLTDA SLTPB TBSL FD DWLC CC&CRMD DArch THASL	4 years	RS 15 million
Export Agriculture sector	Introduce new cultivars/clones tolerant to heat, drought and flood and resistant to disease and pest attacks	· Screen existing cultivars/clones for heat and water stress. · Introduce new cultivars /clones - Heat tolerant - Drought tolerant - Flood tolerant · Develop grafted/budded plants with drought resistance properties	· Number of existing cultivars/clones for heat and water stress · Number of new cultivars /clones introduced · Number of grafted/budded plants developed with drought resistance properties	MOPI TRI RRI CRI DEA SLCC SRI AFoU	10 years	RS 160 million
Export Agriculture sector	Promote improved nursery and plant management practices and sustainable cropping	Improve the management of shade trees as a climate change adaptation measure - Conduct nursery and field trials - Develop recommendations and guidelines · Promote suitable operational and management techniques	Number of nursery and field trials conducted to Improve the management of shade trees as a climate change adaptation measure · Number of guidelines developed to Improve the management of shade trees as a climate change	MOPI TRI TBSL TSHDA RRI RDD CRI CDA	10 years	RS 170 million

	systems to increase the climate resilience of plantations and crops	<ul style="list-style-type: none"> - Application of Anti-transpirents (rubber) - Drip irrigation (with the new expansions in dry zone) - Mulching - Intercropping with spices · Develop improved cropping system models for vulnerable areas/lands · Promote improved nursery and plant management practices - New soil mixtures - Use soil quality index - Use of machinery for replanting 	<p>adaptation measure</p> <ul style="list-style-type: none"> · Number of promotional workshops completed for promoting suitable operational and management techniques · Number of improved cropping system models developed for vulnerable areas/land · Number of improved nursery and plant management practices promoted · Number of promotional workshops to promote improved nursery and plant management practices 	CCB DEA SLCC SRI AFoU NIPM		
Export Agriculture sector	Conduct research studies on climate change impacts on export agriculture crops	<p>Conduct research studies on</p> <ul style="list-style-type: none"> - Crop physiology: heat and drought resistance - Physiology of flowering: Synchronizing of flower irregularities - Resistance cultivars - Inter cropping: banana, cocoa, cash crops such as maize - Deep planting: at nursery and replanting levels - Cropping systems for climate resilience 	<ul style="list-style-type: none"> · Number of research studies conducted and published · Amount of money allocated/spent on research studies 	MOPI TRI RRI CRI DEA SLCC SRI AFoU	10 years	RS 150 million
Export Agriculture sector	Identify and collect information on	<ul style="list-style-type: none"> · Identify and collect information on areas most vulnerable to flood and drought hazards 	<ul style="list-style-type: none"> · Number of areas identified and data collected on most vulnerable to flood and drought 	DMC TRI RRI	4-7 years	RS 35 million

	<p>areas most vulnerable to disasters and prepare hazard vulnerability maps for all crops</p>	<ul style="list-style-type: none"> · Prepare hazard vulnerability maps for all crops · Develop guidelines for management of extreme events in vulnerable areas 	<p>hazards</p> <ul style="list-style-type: none"> · Number of plans developed for areas that are most vulnerable to flood and drought hazards · Number of guidelines developed for areas most vulnerable to flood and drought hazards (extreme events) 	<p>CRI DEA SLCC SRI</p>		
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Industry, energy and transportation	Minimize the fluctuation hydropower generation potential through improvements in system management	<p>Minimize the fluctuation of hydro power generation potential through improvements in system management</p> <ul style="list-style-type: none"> - Prepare and implement watershed management plans in major-hydro and mini-hydro reservoirs - Plan the generation using short-term and seasonal forecast of weather · Explore alternatives for maximizing the use of hydro power facilities: e.g. pumpedstorage hydroelectricity · Improve the efficiency of transmission and distribution systems to minimize losses · Diversify the energy mix with increased share of renewable energy (Focus: recommendations on TNA-Energy Sector) · Factor in climate change into long-term generation plans 	<ul style="list-style-type: none"> · Amount of money allocated/spent on minimizing the fluctuation of hydro power generation potential through improvements in system management · Number of alternatives for maximizing the use of hydro facilities: e.g. pump storage explored and identified · Number of workshops conducted on improving the efficiency of transmission and distribution systems to minimize losses, diversifying the energy mix with increased share of renewable energy (TNA recommendations) and factoring climate change into long-term generation plans 	CEB SEA DM EFoU	10 years	RS 300 million
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Industry, energy and transportation	Diversify the supply sources of climate sensitive agro-based raw materials	<ul style="list-style-type: none"> · Diversify the supply sources: <ul style="list-style-type: none"> - Identify climate sensitive raw materials - Assess the specific vulnerabilities - Promote the production in wider range of locations · Develop forward contract markets for agrobased raw materials · Introduce innovative risk transfer instruments 	<ul style="list-style-type: none"> · Number of workshops conducted on identifying climate sensitive raw materials, assessing the specific vulnerabilities and promoting the production in wider range of locations · Number of forward contracts developed for markets for agro-based raw materials · Number of innovative risk transfer instruments introduced 	IDB ITI DOA NCPC	4-10 years	RS 180 million
Industry, energy and transportation	Establish an early warning and hazard communication system for commuters and managers of energy, transport and industrial facilities	<ul style="list-style-type: none"> Identify vulnerable areas for climate-induced disaster risks on energy, transportation and industrial facilities and prepare maps · Develop a system for timely issuing of shortterm weather forecasts · Establish an early warning system of disasters to energy, transport and industry managers 	<ul style="list-style-type: none"> · Number of vulnerable areas identified and maps prepared for climate-induced disaster risks · A system is developed for timely issuing of short-term weather forecasts · An early warning system is established for energy, transportation and industrial managers 	DMC DM	4-10 years	RS 38 million

<p>Industry, energy and transportation</p>	<p>Conduct research studies on climate change impacts on industry, energy and transportation</p>	<p>Conduct research studies on impacts of climate change on energy, transportation and industry</p> <ul style="list-style-type: none"> - Explore and assess the potential for establishing pumped-storage hydroelectricity (PSH) plants and conversion/ retrofitting of existing facilities to PSH plants - Identify climate sensitive agro-based raw materials and assess alternatives to ensure stable supply - Assess the impacts of climate change impacts on transport systems and road infrastructure 	<p>An assessment report on the potential for developing (and retrofitting) pumped storage hydroelectricity facilities is completed and published</p> <ul style="list-style-type: none"> · Number of research studies conducted 	<p>CEB SEA ITI NERD RDA EFoU</p>	<p>10 years</p>	<p>RS 30 million</p>
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STATE OF PALESTINE

SECTOR	OBJECTIVES	ACTIVITIES	COSTS
Agriculture	n/a	Enhance sustainable community-level irrigation schemes and infrastructure; Improve water-use efficiency; Land-use planning and management - greening, afforestation, and rangeland development; Afforestation; Establish farmers' support mechanisms (subsidies, awareness training); Management of crop production systems including soil and water resources for better environmental sustainability along with improved economic profitability for farmers	USD 1.2 billion
Coastal and marine	n/a	Rain-water harvesting; Construct detached breakwaters; Introduce saline-tolerant crops; Enlarge the fishing area and improve fishing equipment; Beach nourishment	USD 114 million
Energy	n/a	Generate solar electricity for medium-large scale commercial and industrial application; Promote renewable energy use; Implement energy efficiency measures; Build fossil fuel storage facilities	USD 443 million
Food	n/a	Enhance agricultural value chain; Construct large-scale steel silos for grain to enable storage when international prices are low	USD 443 million
Gender	n/a	Increasing awareness of women in water-poor areas of measures they can take to help prevent diseases related to water, food and sanitation; Encourage women to use their house gardens to produce food; Support efficient use of water in women's private small-scale agricultural projects	USD 11.4 million
Health	n/a	Develop water, food and sanitation monitoring and safety systems; Train health professionals and increase awareness of people, especially women	USD 12 million
Industry	n/a	Provide reliable electricity supply; Replace imported raw material with local materials when possible; Improve water supply through wastewater treatment systems; Reduce energy consumption by introducing modern production technologies; Capacity-building to enable industries adapt to cc; Conduct energy audits to increase industries' use of energy efficiency	USD 249.5 million
Terrestrial ecosystems	n/a	Create a national network of protected areas, including biodiversity hotspots	USD 13.4 million
Tourism	n/a	Identify and implement flood management schemes for cultural heritage sites and eco-tourist attractions	USD 9.6 million

Urban and infrastructure	n/a	Promote green buildings; Rehabilitate resilient road infrastructure	USD 53.6 million
Waste and wastewater	n/a	Improve waste collection system; Improve management of leachate from landfill sites	USD 63 million
Water	n/a	Rehabilitate water resources like wells and springs; Control leakage from distribution systems; Allocate transboundary water resources equitably between the Israel and Palestine states; Enhance use of alternative water resources for non-domestic purposes; Develop and improve storm-water systems; Increase share of imported water; Build a large desalination plant for Gaza	USD 893.5 million

SUDAN

SECTOR	OBJECTIVES	ACTIVITIES	COSTS
Food security - Darfur States	Development and Improvement of the Agricultural Production, farmers and pastoralists livelihoods.	<ol style="list-style-type: none"> 1. Water harvesting 2. Technology transfer and extension 3. Diversification of incomes 4. Management of the range lands and grazing in a sustainable manner 5. Rehabilitation of the natural range lands and management of animal routes 6. Environmental and forest conservation. 7. Soil conservation measures and best practices 8. Wildlife conservation 9. Alternative renewable energies to reduce dependency on biomass. 10. Improving animal productivity and animal breeds 11. Upgrading and improving veterinary services. 	16.6 million USD
Food security - Darfur States	Integrated management of water resources	<ol style="list-style-type: none"> 1. Management and development of the water resources to meet the current and future needs 2. Achieving water security. 3. Water harvesting (dams, hafirs, terraces, etc.) 	1.2 million USD
Food security - Darfur States	Reduce climate induced diseases and mortalities	<ol style="list-style-type: none"> 1. Combating vectors and insects that borne diseases. 2. Improving primary health care services 3. Providing services for a healthy environment 4. Improving the general health services and build awareness 	USD 1 million

Vulnerable communities - Kordofan States	Increasing agricultural production and productivity and developing the Livelihoods	<ol style="list-style-type: none"> 1. Using modern appropriate technologies 2. Achieving food security 3. Adding value to the agricultural products 4. Rebuilding/restocking the animal herds in affected areas 5. Supplementary feeding 6. Improving the environment for the local breeds 7. Training and capacity building 8. Improving marketing 9. Improving veterinary services 10. Better management of animal stock and composition 11. Conserving the germplasm 	USD 12 million
Vulnerable communities - Kordofan States	Increasing agricultural production and productivity and developing the Livelihoods	<p>Conservation and development of the natural resources by:</p> <p>Rangelands:</p> <p>Replanting of the palatable range plants</p> <ol style="list-style-type: none"> 1. Establishment of range enclosures to study the effect of climatic changes 2. Establishment of community ranches 3. Introducing the manufacturing of concentrated fodders 4. Joint management of the natural resources 5. Raising environmental awareness 6. Using the agricultural residues <p>Encouraging the establishment of community forests</p> <ol style="list-style-type: none"> 7. Introducing agroforestry practices 8. Planting shelter belts 9. Planting the high economic value trees 10. Establishing community tree nurseries 11. Using alternative energies to reduce dependency on unsustainable biomass sources 	USD 11.5 million
Vulnerable communities - Kordofan States	Increasing agricultural production and productivity and developing the Livelihoods	<ol style="list-style-type: none"> 1. Undertaking geophysical studies of the aquifers 2. Establishment and rehabilitation of hand pumps 3. Digging and rehabilitation of Hafirs. 4. Establishing water networks in the rural areas (provisions of drinking 	USD 13.7 million

		water). 5. Building capacities to achieve integrated water resource management	
Vulnerable communities - Kordofan States	Increasing agricultural production and productivity and developing the Livelihoods	<ol style="list-style-type: none"> 1. Establishment and rehabilitation of health centers 2. Building the capacities of the health cadres 3. Supporting family and school health programmes 4. Promotion of ventilated improved latrines 5. Combating transmitted disease 6. Raising the health awareness of the communities 	n/a
Water - Eastern States	Water harvesting to provide water for humans and livestock	<ol style="list-style-type: none"> 1. Establishment of hafirs 2. Digging wells 3. Installing hand pumps 4. Establishment of small dams 5. Establishment of water quality laboratories 	n/a
Forest - Eastern States	Rehabilitation of forests	<ol style="list-style-type: none"> 1. Planting shelterbelts 2. Establishment of community forests 3. Establishment of enclosures 4. Rehabilitation of the Gum Arabic gardens 5. Collection of tree seeds and planting them 6. Establishment of tree nurseries 7. Promotion of alternative energy 8. Protection of forests and activation of the pertinent laws 	n/a
Agriculture - Eastern States	Agricultural revival	<ol style="list-style-type: none"> 1. Collection and reseedling of the range plants 2. Establishment of range enclosures and ranches 3. Opening fire lines 4. Awareness raising 5. Protection of range lands and activation of the pertinent laws 6. Introduction of proper land preparation technologies 7. Breeding of crop varieties that are adapted to the climate change 8. Introduction of modern irrigation technologies 9. Raising awareness about the hazards of pesticides and insecticides 10. Establishment of transformative industries 	n/a

		<p>11. Capacity building of the stakeholders</p> <p>12. Planting date palm trees</p>	
Health - Eastern States	Health improvement	<ul style="list-style-type: none"> • Establishment of dispensaries and health centers • Provision of primary health care services • Raising health awareness • Provision of water quality testing equipment 	n/a
Fisheries - Eastern States	Improving Livestock and fish production	<ul style="list-style-type: none"> • Mobile clinics • Provision of vaccines • Controlling of diseases shared between humans and animals • Provision of production facilities (animals, boats, nets, etc.) • Conservation of aquatic and terrestrial ecosystems 	n/a
Ecosystem management - Eastern States	Strengthening coastal communities to use Ecosystem Based Management approaches to improve fisheries management and achieve other marine resource benefits	<ul style="list-style-type: none"> • Scoping and establishment of community-based fishing organizations within Dungonab Village & Mohammed Qol. • Assessment of distribution of benefits among communities and demonstration of benefits associated with collective and collaborative resource stewardship. • Demonstration of educational, communicational, capacity enhancement and training opportunities for local communities in Dungonab and Mohammed Qol villages. • Developing employment opportunities for locals in local tourism-based activities as forms of alternative livelihoods to expand local opportunities and to lessen fishing pressure. • Involvement of community-based organizations in MPA zoning and boundary demarcation and in monitoring and stock assessment activities for better compliance/enforcement and protection from overfishing, particularly of foreign fleets. • Demonstration of best practices for low impact aquaculture of coral reef species. 	n/a

Coastal Zone management - Eastern States	Improved coastal zone management to reduce vulnerability to climate change	<ul style="list-style-type: none"> • Protection of critical areas, specifically areas sensitive to climate related risks. • Restoration of degraded areas to enhance their resilience to climate change • Management of mangrove areas and addressing multiple stresses using approaches based on science and participation. • Provisions for alternative livelihoods for mangrove dependent communities to address drivers for mangrove destruction. • Integration of adaptation options into coastal zone management planning to increase adaptive capacity of ecosystems and people. • Assessment and monitoring of coastal ecosystems (including area, resources, resilience etc) • Integration of ecosystem based and resilient building approaches in coastal zone management and development% • Exploration of options for investment and finance flow to support ecosystems conservation and maximization of their benefits to livelihoods% 	n/a
Health sector - Nile States	Reducing the incidence of climate change-related diseases	<p>Primary health care. Environmental health. Vectors control. Water borne diseases Epidemics early warning systems</p>	n/a

Agriculture - Nile States	Enhancing the resilience of the agricultural sector to the impacts of climate change	<p>Rain fed Agriculture</p> <ul style="list-style-type: none"> • Resettlement and alternative sustainable livelihoods. • Provisions of improved early maturing varieties. • Rangelands improvement (rehabilitation and management). • Trees planting through reseeded. <p>Irrigated Agriculture</p> <ul style="list-style-type: none"> • Crop diversification and introduction of improved varieties. • Improving the current irrigation systems to suit the fluctuations of the River water flow levels. • Provision of small irrigation pumps to the farmers. • Establishing of shelterbelts, community forests and agroforestry. • Production of fruit trees. • Utilization of the treated sanitation water to irrigate the shelterbelts. <p>Livestock Production</p> <ul style="list-style-type: none"> • Increasing productivity through selection of the best breeds. • Improving the veterinary services and the abattoirs. • Aquaculture and sustainable fishing. • Establishing fodder units and increasing irrigated fodder crops. <p>Research</p> <ul style="list-style-type: none"> • Demonstration farms and training of the farmers. • Studying the impacts of climate change on the production of fruits especially date palm. <p>Urban Sector</p> <ul style="list-style-type: none"> • Management of the manure and agricultural residues to produce energy. 	n/a
Agriculture - Central States	Modernization of the Agricultural Production Systems, Natural Resource Conservation and rehabilitation of the Livestock Sector	<ol style="list-style-type: none"> 1. Using suitable agricultural technology and best practices to cope with climate change. 2. Breeding of new crop varieties that are more adaptive to climate change. 3. Rehabilitation of the meteorological networks. 4. Rehabilitation of the vegetative cover. 5. Rehabilitation of the rangeland. 6. Establishing a botanical garden to conserve biodiversity. 7. Improving the veterinary services. 8. Improving livestock and fish production. 	n/a

Health - Central States	Control of Endemic and Epidemic Diseases induced by Climate Change	<ol style="list-style-type: none"> 1. Control of Schistosomiasis, Leishmaniasis, Dengue Fever, Malaria and Lymphatic filariasis. 2. Control of malnutrition and diarrhea among children under five. 3. Provision of treatment and basic medical services. 4. Building institutional and human capacities. 5. Early warning and response to health emergencies. 	n/a
Water - Central States	Water management and conservation	<ol style="list-style-type: none"> 1. Water harvesting. 2. Establishing centers for measuring the number of floods in the valleys and Khors. 3. Management of surface and underground water. 	n/a

SURINAME

SECTOR	OBJECTIVES	ACTIVITIES	OUTCOMES	INDICATORS	COSTS
Water	Comprehensive national research programme on social, environmental and economic baselines, climate science, vulnerability, impacts and risk management	Undertake in-depth studies and establish an observation network and monitoring system, in order to enhance water management and sustainable use of water resources;	<p>1. Climate change related data collection, capacity building, institutional strengthening, data processing and analysis and data management.</p> <p>2. Assess vulnerabilities and risk from climate change to drinking water and other uses e.g. irrigation, fisheries, etc. Including gender responsive assessment on water management including survey on unpaid time spent by individual household members in supplying water, making it safe for use, and managing it.</p> <p>3. Undertake an assessment of water needs (for example, irrigation, drinking, waste treatment, industrial) and sources, identify and appraise options for new sources (including water balance and aquifer replenishment studies).</p> <p>4. Conduct feasibility studies to explore the possibility of additional groundwater projects, as well as alternative freshwater resources, to buffer the effects of saltwater intrusion.</p>	<ul style="list-style-type: none"> - District level risk maps developed - Integrated water resource management plan implemented - Successful scale up of pilot projects - IWRM supportive legislation passed - Increase in the level of public awareness 	

			<p>5. Explore the development of mechanisms to facilitate Integrated Water Resources Management (IWRM), including appropriate institutional and legislative frameworks at all stages of water planning and management.</p> <p>6. Awareness raising programme on the impacts of climate change on water resources and management of these impacts, including from gender perspectives</p>		
Water	Develop and implement law, policy and regulation to ensure sustainable exploitation and use of drinking water resources and waste water management	Assess options for the establishment of an institutional organization for the enhancement of water management; Addition of the climate change aspect into the law on meteorological services after formal approval of the water law; Develop of surface water law; Develop robust land management and waste management policies	<p>1. Include provisions for i) the protection of water resources ii) the promotion of their sustainable use and iii) for water quality standards and wastewater discharge ;</p> <p>2. Study to indicate the required water resource governance and administration system best suited to Suriname.</p> <p>3. Establishment of water quality standards for each wastewater type</p> <p>4. Construction of water storage mechanisms for use of water in times of drought; possibilities include artificial controlled ground reservoirs, water towers, or bottled water reserves in</p>	<ul style="list-style-type: none"> - Revised legislation passed - Water Resource Authority established - More Water Boards established - Pollutant loads in aquifers are lower - Increased numbers and volume of reservoirs - Increased budget for water related infrastructure 	

			<p>strategic locations throughout the country.</p> <p>5. Policies to increase efficiency of drinking water use and supply mechanisms (for example improving infrastructure, capacity building and raising awareness).</p>		
Water	Water management programme to increase resilience of water supply	Consider current integrated water resource management approaches and future proposals with an intent of mainstreaming climate change adaptation processes into these frameworks; Identify and implement wastewater recycling schemes, including mining and forestry sector	<ol style="list-style-type: none"> 1. Develop and implement land and waste management solutions to reduce discharge of pollutants into water resources. 2. Develop, implement and monitor drinking water storage mechanisms for use in times of drought and flooding. 3. Develop, implement and monitor other water types storage mechanisms for use in times of drought and flooding. 4. Wastewater from domestic, tourism, industrial and agricultural use can be reused, for example for agricultural irrigation, reducing demand for drinking water. 	<ul style="list-style-type: none"> - Pollutant loads in aquifers are lower - Volume and quality improvements in water resources - Mechanisms to reduce intrusion of river and sea water are developed - Volume increase of reused water 	
Water	Climate-resilient infrastructure development to ensure availability of drinking water and other uses of water	Develop and upgrade infrastructure for water supply, irrigation; Develop and upgrade infrastructure to cope with the effects of climate change and sea level	<ol style="list-style-type: none"> 1. Construct an emergency network of agricultural irrigation pipes and pumps connected to reliable water sources, such as nearby larger freshwater rivers or controlled reservoirs. 	<ul style="list-style-type: none"> - Increased reliability of irrigation infrastructure - Percentage of water loss reduced - Reduced incidence of leakages 	

		rise e.g. drainage and flood protection	<p>2. Increased efficiency of water use, including storage and distribution, without compromising sanitation systems</p> <p>3. Develop mechanisms to reduce intrusion of river and sea water.</p> <p>4. A leakage management programme including mains rehabilitation, to reduce water leakage from distribution and supply networks.</p>		
Sustainable Forest Management	Comprehensive national research program on social, environmental and economic baselines, climate science, vulnerability, impacts and risk management	Continue analysis on past climate impacts on forests and sustainable forest management with emphasis on mangroves; Identification, analysis and implementation of sustainable forestry options in Suriname including but not limited to: soil degradation and nourishment, reforestation planning, irrigation, protected areas, agro-forestry	<p>1. Research is able to establish a Reference Level for forest carbon emissions, with special attention for mangrove forests and wetlands</p> <p>2. Research and analysis conducted to enable impact mitigation, climate resilience and risk management in forest including protected areas.</p>	<ul style="list-style-type: none"> - Emissions reference level established - Number of sustainable forestry actions implemented 	
Sustainable Forest Management	Awareness raising and capacity building programme on sustainable forest management, forest carbon accounting and	Perform awareness activities regarding the role of forest conservation, restoration and sustainable use of forests in climate change	1. Target groups: private sector, students, local communities, decision makers on national and district level, judiciary, executive and enforcement personnel are	<ul style="list-style-type: none"> - Increase in public awareness levels - Number of training programmes implemented - Carbon issues referenced in policy documents 	

	forest carbon monitoring		<p>made aware of sustainable forestry management.</p> <p>2. Training and education with a focus on sustainable forestry management are incorporated into school system and informal learning communities including men and women's groups.</p> <p>3. Capacity and knowledge regarding accounting of forest carbon stocks including Forest carbon credits and markets, emissions and carbon sequestration improved.</p> <p>4. Target groups including local communities including groups focused on opportunities and equality for men and women, in monitoring of forest carbon levels.</p>	- Number of communities actively monitoring forests	
Sustainable Forest Management	Develop and implement governance and finance regime to incorporate climate resilience and mitigation in forestry	Assess options to access climate finance through UNFCCC mechanisms financing carbon sequestration by forest and sustainable forest management; Review and update Forest Management Act to include climate change considerations	<p>1. Focal point established and financial plan developed for identifying funding sources.</p> <p>2. A State Order for the protection of all forests and in particular mangrove forests is developed.</p> <p>3. A state of art institutionalized National Forest Monitoring system established</p>	<p>- Increase in funding</p> <p>- State Order approved</p> <p>- Area of reforestation increased</p>	
Sustainable Forest Management	Management of mangrove and coastal forest resources	Include mangrove conservation and afforestation in REDD+	1. A programme for mangrove conservation and reforestation	n/a	

		strategy and identify REDD+ readiness actions needed for mangrove carbon sequestration	and afforestation of mangroves along coastline is implemented.		
Agriculture, Livestock and Fisheries	Comprehensive national research program on social, environmental and economic baselines, climate science, vulnerability, impacts and risk management	Develop a comprehensive national research program on climate resilient crops, adaptive agricultural practices, animal husbandry and fisheries; Conduct analysis on past and future climate impacts on Suriname's agriculture, livestock and fisheries; Strengthen participation in agricultural activities particularly among women and vulnerable groups	<ol style="list-style-type: none"> 1. Analyze the impact of changing climate situations / extreme weather conditions; continuously gather and compile gender disaggregated data regarding yield, production and specified losses and link those to the weather pattern during the related growing seasons while looking for trends. 2. Improve data compilation and data management, transparency / availability/ accessibility including from gender perspectives 3. Attention paid to impacts on yield, agro- ecological research on pests and diseases, and impact of drought and heavy rain on water and food shortages in the interior. 4. Develop and trial agricultural, livestock and fishing techniques that build resilience to a variable and changing climate in a participatory way. 5. Activities are planned with gender specific considerations and according to Free Prior and 	<ul style="list-style-type: none"> - Data driven trend forecasts improved - Data driven trend forecasts improved - Increased climate research output - Number of pilot projects implemented and scaled up - Number of activities implemented 	

			<p>Informed Consent (FPIC) protocol.</p> <p>6. The livelihoods of women farmers and other vulnerable groups are strengthened through training and supported through female headed household specific financing, resource sharing and ownership and network support.</p>		
Agriculture, Livestock and Fisheries	Integration of climate resilience into agricultural extension services	Raise awareness of farmers, pastoralists and fisherfolk on the impacts of climate change; Provide training and guidance in climate smart crop production; Climate-control systems on livestock farms and modification of livestock feed, in both the coastal area and the interior	<ol style="list-style-type: none"> 1. Increased capacity of agriculture extension service providers (LVV, RO, private entities) 2. Raised awareness of farmers, pastoralists and fisherfolk on the impacts of climate change. 3. Increased local level capacity on how to manage impacts based on research results 4. Increased adoption of techniques such as appropriate greenhouses and hydroponic gardens, improved drainage systems, crop diversification, etc. (fruit and vegetables). 5. Increased adoption of such modern systems on livestock farms especially in rural areas. 	<ul style="list-style-type: none"> - Behavior change of farmers documented - Number of local persons trained - Number of farms using adaptation techniques - Number of farms using adaptation techniques - Improved quality and quantity of feed supply 	
Agriculture, Livestock and Fisheries	Develop and implement Sustainable Agriculture Policy including relevant climate resilience	Implement the Water Boards Act as the most relevant legislation for water management in the	1. Mandated infrastructure development to conserve water, provide irrigation or fast	Increase in infrastructure investments	

	mechanisms in existing and new regulations	agricultural sector and strengthen the governance in water management for agriculture	drainage and protect agriculture from saltwater intrusion. 2. Integrated climate change considerations (including results from climate impact studies) into national dike construction programme in low-lying areas 3. Local water management bodies established and operational		
Agriculture, Livestock and Fisheries	Financial support to farmers, pastoralist and fisherfolk to build up climate resilience	Develop and provide a financial incentives scheme for farmers, based on research results appropriate to each region and ecotype; Develop and provide a financial incentives scheme to promote aquaculture	1. Evaluate opportunities for parametric insurance schemes to compensate farmers/pastoralists whose agricultural production suffers damage from climatic events. 2. Evaluate opportunities for parametric insurance schemes to compensate fishers and farmers whose harvest suffers damage from climatic events	Increased access to risk insurance	
Energy	Comprehensive national research programme including analysis and collect data on past climate impacts	Implement an energy sector-focused national research programme to address the links between climate change and climate impacts	1. Research including but not limited to salinization, erosion, water levels, river dynamics, natural ecosystems) on energy sector (operational, performance, maintenance, financial impacts); and research on household energy consumption from gendered perspectives including gaps in access to clean energy; tidal and wave energy and waste energy.	- Sector plans based on climate risk - Increased renewable energy portfolio	

			<p>2. Feasibility of new energy sources, such as wind, solar, biomass and hydropower, as well as electricity generation methods</p> <p>3. Improve data and data analysis to increase usability, which in turn will be fed into policy development.</p>		
Energy	Awareness and capacity building programme to encourage training of new professionals in energy research and development	Facilitate technical and university education that focuses on the use of new technologies and research into alternative technologies;	<p>1. New and enhanced vocational and degree programmes developed in conjunction with regional and international expert education partners</p> <p>2. Establish access to international training facilities (including the international private sector).</p> <p>3. Develop and implement an awareness raising programme to promote energy conservation and efficiency for domestic and commercial users.</p>	<ul style="list-style-type: none"> - Climate introduced in training of energy professionals - International training facilities established - Increase in public awareness 	
Energy	Financial incentives to influence energy use and decrease emissions	Deploy market-based incentives to transform the energy sector	<p>1. Taxes, emission trading and other economic instruments to steer energy use and emissions, conveying clear, long-term market signals (for example develop a Feed-in-Tariff policy for renewable energy to encourage private investment).</p> <p>2. Remove fossil fuel subsidies for the energy sector.</p>	<ul style="list-style-type: none"> - Market based instruments implemented - Fossil fuel subsidies removed - Increased energy efficiency 	

			3. Promote procurement of energy efficient goods and services by public and private sector; explore provision of incentives for using energy goods and services		
Energy	Conduct assessment and baseline for the development of the national energy strategy	Develop national energy policy, strategy and regulatory framework; Develop and deploy a new financing mechanisms for communities, entrepreneurs and small business owners	<p>1. Minimized energy use, increased efficiency and enabled renewable energy development.</p> <p>2. Design a building code for housing and infrastructure with regards to energy use (focusing on green energy), electricity efficiency and locally-sourced building and construction material.</p> <p>3. Improved enforcement of zonal planning and regulation to stimulate efficient city design (smart cities). E.g. Stimulate building flats instead of individual houses. Restrict the repurposing assigned land use.</p> <p>4. Inclusion of other sources of renewable energy than solar systems to qualify for an exemption from import duty.</p>	<ul style="list-style-type: none"> - Increased energy efficiency - New building codes implemented - Import duties on renewables removed - Increased funding for rural electrification 	
Health	Create comprehensive national research programme to track international research	Keep abreast of the latest scientific and medical findings and evidence related to the spread of disease likely caused by climatic changes; Stimulate	1. Surinamese authorities are aware of newly emerging pathogens relevant to Suriname's future and keep abreast of preventative measures such as new	<ul style="list-style-type: none"> - Expansion of preventative care programs - Area of country monitored - Reduced frequency and intensity of outbreaks 	

		national health research and conduct a continuous programme for monitoring diseases that have been highlighted with a climate change signal	vaccination protocols, new antibiotics, and new health related precautions. 2. Increased capacity for monitoring activities across more regions of the country. 3. Higher levels of disease surveillance and means to provide early warning of outbreaks and increased risk to communities		
Health	Create a capacity building programme for public health sector on climate resilient health practices	Strengthening of technical and professional capacity of health personnel, the organizational capacity of health systems, and their institutional capacity to work with others	1. Focus on actors' needs in order to ensure the implementation of accurate interventions, any initiative on capacity development at any level should start by a capacity assessment of the corresponding health system 2. Foster collaboration and partnerships, especially with and between countries and regions, and within and between related departments and units 3. Enhance the sustainability of capacity building efforts by integrating climate change at early stages of professional health training	<ul style="list-style-type: none"> - Capacity assessment of healthcare system implemented - Number of foreign-local linkages - Health care professionals trained in climate and health related areas - Engagement between practitioners and communities 	

Health	Launch awareness raising programme on climate-related health impacts, prevention and treatment	Conduct a public-awareness campaign on climate related health impacts, such as dangers of prolonged heat stress; Provide information to the public on climate related vector-borne diseases	1. Communication strategy on climate risks to health developed and implemented, outlining the scope of information for diverse audiences (e.g. media, public, health personnel and other sectors) and events, including who should communicate, and the means of communication.	<ul style="list-style-type: none"> - Increase in public awareness - Public access to feedback mechanisms 	
Health	Develop climate resilient health infrastructure and initiatives	Establish medical centers near potential risk zones and hospitals in areas that are not vulnerable to climate-change impacts	<p>1. Identify potential risk zones and locations vulnerable to climate change health impacts. Crucial infrastructure will be moved to higher grounds that are less vulnerable to floods, sea-level rise, landslides etc</p> <p>2. Monitoring indicators on climate change impacts, vulnerability, response capacity and emergency preparedness capacity, as well as climate and environmental variables included in relevant monitoring systems at national level and reported over time</p>	<ul style="list-style-type: none"> - Health and climate risk maps developed - Number of healthcare indicators monitored - Regularization of healthcare capacity reviews - Increase in surveillance programmes - Increased risk mapping - Increased early warning systems 	
Health	Integrate new technology and procedures into the health sector to enhance disease control	Introduce Early Disease Warning Systems that consider temperature signatures for vector borne diseases and other diseases	1. Early detection tools (e.g. rapid diagnostics, syndromic surveillance) used to identify changing incidence and early action triggered.		

Environment	Research natural ecosystems and the natural protection they provide from extreme weather events, and how these will be impacted by climate change	Provide support for climate adaptation along the coastal region including mangroves; Perform Technology Needs Assessment to draw out and identify priority resilience and low emission technologies required; Support and advance scientific understanding of climate phenomena and harness that understanding for action in Suriname	<ol style="list-style-type: none"> 1. Engineering measures to increase sedimentation rates along severely encroached coastal stretches in order to support mangrove growth. 2. Introduction of new low carbon technologies and ecological and engineering practices and methods. 3. Encourage relevant industry sectors as well as responsible ministries and agencies to put clean technologies and modern climate adaptation techniques into practice 	<ul style="list-style-type: none"> - Increased area of mangrove forest - New technologies introduced - Increase in application of clean technologies - Accuracy of climate projections 	
Environment	Create capacity building programme on climate resilience	Lead climate adaptation strategy and country implementation	<ol style="list-style-type: none"> 1. Coordination with ministries and agencies to carry out the national climate action strategies and actions. 2. Increased applications for and access to climate funds and financing to implement national climate adaptation strategies. 	<ul style="list-style-type: none"> - Number of cross-collaborative strategies - Increased funds for climate action 	
Environment	Develop and implement law, policy and regulation to protect natural environment and build climate resilience	Require environmental impact assessments when developing long-term projects; Implement conservation strategies designed to protect marine turtles in the face of climate change	<ol style="list-style-type: none"> 1. Enactment into force of the Environmental Framework Act. 2. Government support of the Act by budget allocations to operationalize the activities that it governs. 3. Reviews of environmental impact assessments that take active consideration if the 	<ul style="list-style-type: none"> - Enact the Environmental Framework Act - Budget allocations to operationalize Act - Climate change EIA criteria implemented - Climate change EIA criteria implemented 	

			inclusion of climate adaptation measures where appropriate. 4. Reviews of environmental impact assessments that take active consideration if the inclusion of climate adaptation measures where appropriate.		
Disaster Risk Reduction	Conduct research into past Sibubusi trends and relationship with regional climatic events and climate change	Conduct research into past hurricane trends and potential links to climate change	1. More informed understanding of extreme weather events especially as they interaction and/ or impact with Suriname's Exclusive Economic Zone (EEZ). 2. Strengthen existing monitoring of hurricanes, storms, droughts and their potential impacts in Suriname's EEZ. 3. Greater interactions and stronger crossregional collaborations and sharing of information, data and methods to enhance Suriname's extreme weather prediction capabilities.	<ul style="list-style-type: none"> - Refinement of DRR projections - Increased disaster monitoring capacity - Number of data sharing initiatives implemented 	
Disaster Risk Reduction	Expand and improve equipment of the existing infrastructure and implement a National Early Warning System	Develop specific legislation with regards to disaster management, incorporating climate change	1. Utilization of the UN National Disaster Risk Country document prepared for Suriname (2014) to inform specific legislation for parliamentary approvals. 2. Develop linkages between draft legislation and the National Road Safety Plan and a National Health Disaster Plan.	<ul style="list-style-type: none"> - Strengthened DRR legislation - Updated national safety and disaster plans - Forest Fire Master Plan updated 	

			3. Incorporate forest fire measures into the national disaster plan.		
Disaster Risk Reduction	Establish a disaster relief fund	Establish a disaster relief fund	<p>1. Establish specialized insurance coverage schemes for health, housing and infrastructure and other areas vulnerable to the impacts of extreme weather conditions.</p> <p>2. Develop printed and other materials to promote awareness that clearly shows men and women disaster victims how to handle potentially contaminated water sources in order to prevent illness.</p>	<ul style="list-style-type: none"> - Increased DRR insurance coverage - Increased public awareness - Increased funding for DRR programmes 	
Disaster Risk Reduction	Incorporate sub-national disaster and hazard concerns in climate adaptation planning and actions	Take actions on priority climate related risks identified for the Districts of Commewijne and Para	<p>1. Actions by ministries and district administration offices to alleviate current and potential vulnerabilities of men and women including but not limited to:</p> <ul style="list-style-type: none"> - Flooding from sea and rivers causing soil erosion - Coastal erosion that destroys roadways causing hazardous travel routes for vehicles - Salinization of soils and inundation that reduces crop productivity - Reactionary interventions of farmers by using excessive pesticides and fertilizers 	<ul style="list-style-type: none"> - District level DRR plans 	

Spatial planning	Conduct mapping of land titles across the total surface area of Suriname	Mapping that includes vulnerability of land under various uses to climate change impacts, hazard and vulnerability mapping of land conditions; Awareness campaign about land title holders' rights and responsibilities as related to climate change impacts and adaptation	1. Updated digital mapping records and related outputs of land use conditions that can be used in climate adaptation planning.	- Digital maps updated - Number of properties climate proofed	
Spatial planning	Review the current legal framework for spatial planning	New legislation that incorporates consideration of climate adaptation from the introduction; Ensure that spatial planning geared towards moving critical infrastructure to higher ground is incorporated into health sector, disaster response and other sectors	1. Climate proofing revisions made to existing legislation where appropriate. 2. New legislation that incorporates consideration of climate adaptation from the introduction. 3. Ensure that spatial planning geared towards moving critical infrastructure to higher ground is incorporated into health sector, disaster response and other sectors	- Legislation updated	
Spatial planning	Implement land-use planning through the creation of a single land-use authority	Implement land-use planning through the creation of a single land-use authority that considers vulnerability, land availability and location, and the suitability of land for industrial, agricultural or human settlement purposes	1. Implement spatial planning and zoning by a central authority in order to promote appropriate urban growth. 2. Assess natural waterways and streamline with land allocation policy to mitigate flooding and drainage problems.	- Zoning implemented - Land allocation policy implemented - Drainage plan requirements implemented - Paramaribo Master Plan implemented	

			<p>3. Require drainage plan for allotment and housing projects.</p> <p>4. Update master plan of Greater Paramaribo to integrate climate change considerations.</p>		
Spatial planning	Regulate activities such as sand and shell mining and the issuance of land rights in the estuarine zone	Establish protected area and buffer zone along the coastline and along other water bodies such as rivers and lakes; Forbid new development initiatives in vulnerable zones and gradually reduce existing activities in vulnerable zones	<p>1. More acreage of protected areas and buffer zones to protect against climate impacts such as storm surge and inundation.</p> <p>2. More responsible building and settlement practices with minimal incursions into protected areas and buffer zones.</p> <p>3. Protect mangrove forests; regulate and enforce regulations on tree removal.</p>	<ul style="list-style-type: none"> - Increased protected area acreage - New regulations implemented - Increased area under rejuvenation 	
Infrastructure and Housing	Enhance comprehensive infrastructure and housing information and data for decisive decision-making	A comprehensive national research programme on social, environmental and economic baselines, climate science, vulnerability, impacts and risk management; Expand climate data monitoring network (number of stations and climate variables collected)	<p>1. Undertake analysis of and collect data on past climate impacts (including but not limited to salinization, erosion, water levels, river dynamics, natural ecosystems) on infrastructure (operational performance, maintenance, financial impacts).</p> <p>2. Climate proofing of road infrastructure based on strategic functions for the Surinamese economy, through the</p>	n/a	

			<p>MultiAnnual Policy Plans of the Roads Authority.</p> <p>3. Undertake research to assess the role of mangrove forests and coastal dikes/drainage systems to provide protection against storm surge and flooding.</p> <p>4. Introduction of equipment as advised by respective ministries and experts: stations, synoptic stations, climate stations, automatic stations, hydrometrological stations, data retrieval and space-based tools, hydrometric measuring stations, digital telemetric recorders, data loggers etc</p>		
Infrastructure and Housing	Design and Implement infrastructure and housing regulations, standards and guidelines	Develop specific infrastructure guidance on the appraisal, design and operation of assets under conditions of a changing climate; Design and implement measures to protect existing assets located in flood risk areas	<p>1. Develop and implement design criteria to protect new key assets in flood risk areas (for example, the protection of mangrove forests and the prohibition of coastal sand and shell ridge removal).</p> <p>2. Conduct an awareness raising programme to inform the general public about climate resilient building and its importance.</p> <p>3. Develop and implement design criteria to protect new key assets in flood risk areas (for example, the protection of</p>	n/a	

			mangrove forests and the prohibition of coastal sand and shell ridge removal).		
Infrastructure and Housing	Build infrastructure and housing sector skills, training and expertise; manage and keep human resource capital	Promote infrastructure development to improve drainage, storm surge and flood management and prevent saltwater intrusion in risk areas	1. Identify “at risk areas” and develop flood management options, for example dikes and adequate drainage systems (e.g. roadside drainage system to deter water pooling and stagnation), and strengthen riverbanks (especially in areas where a road runs parallel to the river or where communities have built near the bank).	n/a	
Infrastructure and Housing	Co-ordinate infrastructure and housing efforts in transportation and capital projects	Assess and adjust the coordination of the main transport infrastructure, currently located in the vulnerable coastal zone; Develop roads that are climate-proof	1. Increase access to finance for climateresilient infrastructure development. Identify sources of funding for climate resilient infrastructure and train stakeholders in how to access such funding. 2. Assess and adjust the coordination of the main transport infrastructure, currently located in the vulnerable coastal zone. Develop roads that are climate-proof (i.e. resilient to heavy rainfall) and hydrologically sensitive (that do not disrupt the hydrological processes essential to preserve ecosystems).	n/a	

Tourism	Improve knowledge on how climate change will impact the tourism sector	Create comprehensive national research programme on social, environmental and economic baselines, climate science, vulnerability, impacts and risk management	<ol style="list-style-type: none"> 1. Comprehensive baseline understanding of the bio-physical resources that underlie the Surinamese tourism products and services offered, leading to better management frameworks. Including variables such as ecosystem functions and values and carrying capacity. 2. Comprehensive baseline understanding of the socio-economic situation of communities that underlie the Surinamese tourism products and services offered, leading to better management frameworks. Including variables such as balancing hunting/ fishing/ gathering with site seeing and tours; land ownership rights, squatting and cultural and resource rights. 	n/a	
Tourism	Communicate with industry on how to manage climate impacts	Undertake engagement and awareness raising programme on climate impacts and climate resilient decision-making	<ol style="list-style-type: none"> 1. Evidence of more informed and responsible natural resource management and tourism activities by those involved in the sector. 2. Integration of climate adaptation practices into mainstream tourism sector planning 	n/a	

Tourism	Promote conservation, protection and monitoring of ecotourism	Integrate measures to protect tourism attractions, operators, and tourists from climate impacts	<ol style="list-style-type: none"> 1. Marketing of sites, destinations, tours and activities as ecologically sensitive. 2. Engagement on social media and other new platforms to raise funds from supporters globally for sustainable tourism and conservation efforts. 	n/a	
Mining	Rehabilitate forests that have been impacted by mining operations	Implement a forest rehabilitation programme to sequester carbon dioxide	<ol style="list-style-type: none"> 1. Design and implementation of offset/ compensation programmes for exhausted and/ or abandoned areas. 	n/a	
Mining	Develop and implement law, policy and regulation to integrate climate resilience into mining operations	Include updating the Mining Decree and standards considering climate change through State Orders	<ol style="list-style-type: none"> 1. An updated Mining Decree that includes considerations for climate change adaptation. 2. Develop standards for energy efficiency and reforestation of mined out areas in all mineral agreements with national mining companies and small-scale mining operations. 3. Enhance awareness and capacity building programmes for climate resilient and low emission mining such as the use of alternative mercury-free mining techniques and the closure of pits after mining. 	n/a	
Mining	Promote a comprehensive national research programme on social, environmental and economic	Promote a comprehensive national research programme on social, environmental and	<ol style="list-style-type: none"> 1. Research on sustainable mining practices (e.g. research on climate impacts, alternative sources of freshwater, alternative mercury-free mining 	n/a	

	baselines, climate change in the mining sector	economic baselines, climate change in the mining sector	techniques and appropriate reforestation systems; analysis on past climate impacts on the sector (small and large scale) and modelling of future risks (e.g. impacts on infrastructure, operations, labour, etc.).		
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TIMOR-LESTE

SECTOR	OBJECTIVES	ACTIVITIES	IMPLEMENTERS	COSTS
Infrastructure	Identification of infrastructure vulnerabilities	Identify and map all and the appropriate and effective climate proofing measures that have been practiced in the country and in the region; Develop a Climate Risk Zone Map disaggregated by key climate risks to guide the infrastructure development projects; Identify the most climate vulnerable communities and the underlying factors contributing to their vulnerability and recommend appropriate infrastructure development priorities such as access to water, irrigation canals, roads, health facilities among others to help enhance community resilience	Responsible Ministry for Environment; Responsible Ministry for Infrastructure; MAP	n/a
Infrastructure	Establish institutional and human capacities	Promote climate resilience and climate proofing approaches in small, medium, and large scale infrastructure; Commission a comprehensive Cost-Benefit Analysis to assess the costs and benefits of integrating climate resilient options into infrastructure development designs; Support the ambitious national poverty reduction target in relation to the expected increased storm intensity at sea by improving the capacity to forecast and adapt offshore oil and gas infrastructure to withstand strong storms and waves; Develop the capacity of technical teams responsible for designing, approving, commissioning and implementing infrastructure development projects in the government as well as private sector to integrate climate resilience and environmentally friendly options into their work	Responsible Ministry for Environment; Responsible Ministry for Infrastructure; MoF; ANPM	n/a
Infrastructure	Improve regulatory framework for climate-smart and climate-proof infrastructure	Integrate climate resilience aspects into the Environmental Impact Assessment (EIA) regulations and introduce provisions to make the EIA mandatory for all infrastructure development activities; Improve regulations, standards and compliance for climate-resilient infrastructure, and Review existing laws, regulation and standards to enhance climate change resilience of critical infrastructure	Responsible Ministries for Environment and Infrastructure	n/a

Infrastructure	Climate-proofed infrastructure development	Improve physical infrastructure and natural vegetation methods to prevent landslides in hill sides, roads, and river banks that are made vulnerable by climate change	Responsible Ministry for Infrastructure and MAP (DG Forestry)	n/a
Biodiversity and Ecosystem	Build human and institutional capacities for Ecosystem-based adaptation	Prepare a climate risk and climate sensitive land use, biodiversity and natural resource management plan; Explore and map the potential of different natural resources such as stones and minerals, forest land, oil and gas and prepare an analysis of potential versus climate risk of each of these key natural resources; Decide on the country appropriate level and approach of ecosystem management options such as integrated watershed management, landscape level, ecosystem-based approach and implement the ecosystem management approach for sound management of natural resources and biodiversity; Support research on the cost-benefit analysis, identification of climate change related problems facing different ecosystems and socio-economic benefits of sustainable natural resource management; Identify biodiversity in different terrestrial and marine ecosystems which are at risk from climate change related impacts	Ministry of Agriculture and Fisheries and Environment; Responsible Ministry for Natural Resources; ANPM; Ministry for Higher Education; DG Forestry	n/a
Biodiversity and Ecosystem	Incorporate Ecosystem-based Adaptation into planning and regulatory frameworks	Include ecosystem management in national planning; Develop and prioritize natural resource management measures in alignment with the priorities set by sectorial ministries for forests, grazing land, mines, stone quarries, water resources and hydropower resources; Promote sustainable natural resource management measures including the ones that ensure welfare of the local communities	Responsible Ministry for Forestry and Natural Resources and Environment	n/a

Health	Integrate climate change considerations into health sector planning and regulatory frameworks	<p>Reviewing all existing guidelines, standard operating procedures to consider climate change and its adverse effects; Review all existing guidelines and Standard Operating Procedures (SOPs) considering climate change and its adverse effects; Support preparation of —Health Risk and Preparedness Map in relation to different climate risks, magnitude of existing and potential health risks due to each type of climate risk and existing and planned public health service delivery capacity at the national, sub-national and local levels; In close collaboration with national and subnational health service delivery units and Comprehensive Primary Health Care system which includes Family Health and SISCA, establish surveillance and response mechanisms to deal with climate related public health issues; Coordinate with the Ministry of Health to integrate climate change adaptation and mitigation in health sector policies including WASH priorities; Establishing a health cluster in order to prepare for and respond to emergency events and disasters</p>	Ministry of Health + Environment/NDCC	n/a
Health	Improve health sector capacities for managing climate risks	<p>Integrated disease surveillance and early warning systems; Mainstreaming and implementation of climate change into the Comprehensive Primary health Care System; Enhance the capacity of the health sector and communities to anticipate and respond to changes in distribution of endemic and epidemic climate-sensitive diseases, and reduce the vulnerability to infection of population in areas at risk from expansion of climate-related diseases; Create awareness among the health service providers at all levels on the different types of health risks associated with different types of climate risks and the different coping and adaptation measures so that these coping strategies could be communicated to the vulnerable populations; Prepare the health workers, institutions, and communities on the prevention and response mechanisms to be adopted related to different diseases and health challenges exacerbated by climate change; Support the development of health database and data management systems which includes climate sensitive health risk and vulnerability</p>	Ministry of Health and Environment	n/a

		information to facilitate effective, targeted and efficient delivery of health services		
Agriculture	Improve research and knowledge management capacities to support climate-smart agriculture and resilient land management	Map all the climate smart agricultural practices existing in Timor-Leste and identify the best practices that have contributed in climate change adaptation; Support MAF in conducting research to identify the tree species which contribute to enhanced carbon sequestration, better water retention capacities and better erosion reduction/slope stabilizing capacity; Collaborate with Ministry of Agriculture and Fisheries and other partners to identify and classify the crops as food crops, high value crops, cash crops and multi-purpose crops/plants and map them; Conduct assessments to identify vulnerability and resistance of the major crops to different climate risks and an action plan to safeguard the agricultural land and production; Promote research and development of climate resistant varieties such as drought resistant, water tolerant, fast growing, etc; Support assessments and mapping of the occurrences of adverse impacts of climate change on the productivity and health of livestock such as diseases, reduced milk production, lowered birth rates, increased pest attack and reduced body mass of the livestock and poultry because of increases in temperature, drought, and/or flooding.	Ministry of Agriculture and Fisheries; MAF and UNTL/Faculty of Agriculture, Ministry of Education; Ministry in-charge of Economy and Development	n/a
Agriculture	Incorporate climate change into agriculture sector planning and management practices	Collaborate with agencies such as the National Directorate for Meteorology and Geophysics, ALGIS, the National Directorate for Disaster Risk Management to promote well-informed agricultural practices by utilizing weather forecast information, early warning systems, hazard mapping, disease occurrence among others; Facilitate national level, local level and trans-boundary dialogue to explore the solutions to adapt to and combat the negative impacts of climate change on the health and productivity of livestock; Collaborate with the Ministry of Agriculture and Fisheries on the protection and conservation of coastal ecosystems from sea level rise and other related climate change impacts, especially mangroves and coral reefs; Assign a Climate Focal Point and build the capacity of the	Ministry of Agriculture and Ministry of Health; Responsible Ministry for Environment and Ministry of Agriculture and Fisheries	n/a

		<p>Climate Focal Point in the MAF to ensure that the plans, programmes and initiatives consider climate resilience in all forms of agricultural practices and programmes; Collaborate with Ministry of Public works,</p> <p>Transport and Communication's to promote alternative fuel options such as biomass based sustainable energy and reduced dependence on the fuel wood; Develop integrated agroforestry and watershed management</p>		
Agriculture	Mainstream climate change considerations into agriculture sector regulatory frameworks	Collaborate with MAF in developing standards for sustainable forest harvesting procedures; Ensure that the climate change adaptation interventions are well integrated into the coastal and mangroves rehabilitation and protection policy instruments; Collaborate with MAF to introduce provisions to discourage burning pastures and forests and shifting cultivation practices	Responsible Ministry for Forestry/MAF and Environment; Ministry of Agriculture and Fisheries	n/a
Agriculture	Support private sector and MSME climate-smart agriculture and aqua/mariculture	Promote research on different types of aquaculture techniques and technologies; Advocate for sustainable harvest of fish and promote sustainable fishing techniques; Promote research and an information management system related to different types of fish that live in different ecological regions in the sea and terrestrial water bodies in Timor-Leste and their corresponding maximum sustainable yields; Explore the potential of developing recreational fisheries as one of the options for eco-tourism; Promote aquaculture research centers in different municipalities to test and disseminate local breeds and biotypes and newly adapted types fresh water fish; Develop Fisheries and Marine Ecosystem based bio-physical resources as one of the alternative livelihood options to help communities become more resilient.	Ministry of Agriculture and Fisheries; Ministry of Tourism; Ministry of Environment	n/a

Agriculture	Promote climate-smart livestock practices	Support research and studies to explore the livestock breeding programs which can adapt better to the climate risks and have better resistance to diseases and pest triggered by climate change; Coordinate with the sectorial ministry and partners to document local knowledge and best practices of adapting to challenges on livestock disease and pest emanating from climate risks; Support research and development of the existing and alternative feeds, including production of fodder and feeding techniques, breeding techniques and livestock management techniques that consider the adverse impact of climate change	Ministry of Agriculture and fisheries and UNTL and other universities	n/a
Agriculture	Implement community-centric climate-smart agriculture and resilient land management program	Implement integrated sustainable land management practices, which promotes fixed/permanent agriculture with pilot demonstrations field and education and awareness raising, reduced crop burning, reduced erosion, and improved soil fertility; Promote community-based and integrated watershed management approach to contribute towards co-benefits of sustainable agricultural options; Collaborate with MAF to promote afforestation and reforestation programmes in the most disaster-prone and degraded areas; Work closely with the local community leaders and elders to integrate climate resilient agriculture aspects into Tarabandu or other local customary laws; Promote and invest in education and training of the community level agriculture extension workers on the climate smart agriculture techniques, conservation agriculture, climate resilience, and climate change adaptation measures.	Forestry Directorate/Ministry of Agriculture and Fisheries, Environment, Ministry for DRR(Secretary State of Civil Protection)	n/a
Water	Incorporate climate resilience into water sector planning and regulatory frameworks	Develop integrated agroforestry and watershed management, including integrated water resource management approaches; Enhancing government and community strategies to respond to drought; Identify appropriate approaches to promote and adopt Payment for Ecosystem Services (PES) approaches; Identify the water sources and categorize the capacity of these water sources along with the threats to these water sources from different climate risks	Responsible Ministry for Forestry/MAF, UNTL and Environment	n/a

Water	Implement climate-smart water management among large institutional/municipal users	Research and development of technologies more adaptive to climate change, particularly for key sectors (i.e. agriculture, water resource and coastal/marine); Improve water management including developing and utilization of rainfall harvesting technologies particularly in high prone drought areas; Protection and rehabilitation of rainfall catchment areas should be accelerated to ensure sustainable water supply; Protection and rehabilitation of rainfall catchment areas should be accelerated to ensure sustainable water supply. Priority should be given to watersheds that supply water for agriculture and domestic purposes; Collaborate with the National Directorate for Pollution Control and Environmental Impacts to prevent pollution or environmental degradation of the water sources	Ministry for Water resource management; Ministry incharge of infrastructure; Ministry for the Environment	n/a
Water	Empower communities to utilize climate-smart water management techniques	Create new or strengthen existing Water Management Groups at the community level; Integrate water conservation, water use management, and climate risk reduction approaches into Tarabandu; Promote water conservation, protection of springs and recharge of the ground water sources through an integrated watershed management approach in collaboration with key stakeholders; Disseminate knowledge about proper water management and usage techniques, especially for the dry season	Ministry for Water resource management; Ministry incharge of infrastructure; Ministry for the Environment; DG Forestry; MAP	n/a
Water	Build new/retrofit existing water infrastructure for climate resilience	Build climate proof and environmentally sustainable infrastructure to protect water resources, including enhancing water harvesting, distribution and management systems; Promote techniques of conserving water such as water storage tanks, water harvesting, and irrigation farm ponds among others to collect and store water during wet season and use during dry season	Ministry of Public Works/Resp Ministry for Water	n/a
DRR	Enhance community-level integration of DRR and CCA	Improve institutional and community (including vulnerable groups such as women and children) capacity to prepare for and respond to climate change-induced natural disasters; Enhance government and community strategies to respond to drought exacerbated by climate change	Responsible Ministry for Environment/DRR (Secretary State of Civil Protection)	n/a

DRR	Strengthen national capacities for climate change responsive DRR and disaster risk management	Improving early warning systems for disasters; Integrated climate risk information into traditional disaster risk reduction and management; Strengthening the capacity of national and local institutions as well as communities in managing climate risks through the development of effective climate information systems (improving skills for climate forecasting) including the development of early warning systems and decision support system tools for policy makers	Responsible Ministry for DRR (Secretary State of Civil Protection) and Meteorology Services	
Tourism	Supporting climate-resilient tourism resources in TL	Support assessments to find out the potential climate change stress and loss and damage potential on the tourism sector and the tourism sector on the natural resources; Introduce fees to utilize ecosystem based tourism hotspots as one of the options to generate income stream contributing towards the Climate Fund/Trust Fund to support better management and sustainable development of the area; Work with the National Directorate for Pollution Control and Environmental Impacts to ensure that any potentially damaging tourism enterprise, conducts a full-scale EIA and mitigates all the negative impacts on the environment	Ministry for Tourism; Responsible Ministry for Environment + MAF (DG Forestry and DG Fisheries)	n/a
Tourism	Strengthening the market for climate-resilient nature-based tourism	Promote eco-tourism with adequate environmental management aspects integrated into the eco-tourism approach; Help the Tourism sector identify and integrate climate resilience measures to reduce the adverse impacts in the sector; Identify the potential environmentally friendly tourism promotional aspects such as biodiversity hotspots, wilderness, water-based sports and introduce adaptation strategies that can be linked to biodiversity and natural resource protection to enhance sustainable tourism development; Identify and promote tourism aspects that have low degrading impact on the nature yet can contribute significantly to the local and rural livelihood, such as wilderness photography, home-stay options	Ministry for Tourism; Responsible Ministry for Environment, UNTL and Ministry of Education	n/a

TOGO

AGRICULTURE PRIORITY PROJECTS

PROJECT TITLE	CONSTRUCTION ET/OU REHABILITATION DES RETENUES D'EAU POUR LA MICRO-IRRIGATION ET L'ABREUVEMENT DU BETAIL EN MILIEU RURAL
SECTOR	Secteur Agricole
CONTEXT	<p>Le Togo connaît depuis les années 1960 une tendance à la diminution de la pluviométrie et du nombre de jours de pluie, ainsi qu'une augmentation des températures moyennes annuelles. Selon la Troisième Communication Nationale du Togo au Titre de la CCNUCC, on prévoit à l'horizon 2100 une augmentation des températures variant entre 0,88 à 4,5°C, notamment dans les Préfectures du Nord du Togo. Cette tendance au réchauffement, ainsi que des épisodes de sécheresse plus fréquentes et intenses, pourraient provoquer des situations de stress hydrique pour les plantes, qui auraient comme résultat la réduction des rendements agricoles, voire la perte des récoltes pour les cultures non-irriguées. La construction et/ou la réhabilitation des retenues d'eau permettra d'y associer des pratiques de micro-irrigation qui contribueront à amortir les impacts du changement climatique sur la production agricole au Togo.</p> <p>Les retombées de cette mesure sont multiples :</p> <ul style="list-style-type: none">- Le renforcement de la viabilité économique des exploitations agricoles hautement vulnérables aux impacts des changements climatiques.- Par l'association des cultures maraîchères plus rentables, qui seraient désormais viables grâce à l'introduction de systèmes de micro-irrigation, cette mesure contribuera à l'augmentation de la capacité d'adaptation des producteurs agricoles face aux impacts du changement climatique.- La diversification des sources de revenus, à travers l'introduction de l'activité piscicole dans ces retenues d'eau.- Une plus grande efficacité de gestion de la ressource en eau.- La diminution des conflits liés à l'accès et à l'utilisation de l'eau par les différents usages et notamment pour la consommation humaine, l'irrigation et l'abreuvement du bétail transhumant.- À travers des actions de sensibilisation, de capacitation et d'accompagnement technique des producteurs, la promotion de techniques visant une agriculture raisonnée plus résiliente face aux impacts des changements climatiques (Climate Smart Agriculture). <p>Il s'agit d'une mesure d'adaptation facilement répliquable, basée sur la communauté, car fortement demandée par les populations locales, avec une composante importante d'appui aux populations les plus vulnérables, dont les femmes. Cette mesure est par ailleurs cohérente avec les objectifs de la Politique et du Plan National d'Investissement Agricole du Togo, qui</p>

	mettent l'accent sur l'importance de l'amélioration de la gestion et de la maîtrise de l'eau au Togo et de l'appui aux populations les plus vulnérables.
OBJECTIVES	L'objectif principal de la mesure est donc de garantir un meilleur accès à l'eau et une gestion efficace de la ressource, dans un contexte de rareté exacerbée par le changement climatique, tout en augmentant la capacité des producteurs agricoles togolais à s'adapter aux impacts prévus du changement climatique.
ACTIVITIES	<ul style="list-style-type: none"> - La construction des retenues d'eau et l'implantation des systèmes de micro-irrigation pour le développement de cultures irrigués, afin de diminuer la vulnérabilité des producteurs agricoles togolais face aux changements climatiques. Les principaux types de cultures auxquels cette mesure est dirigée sont le maraîchage, culture hautement rentable, ainsi que le maïs, qui est une culture vivrière traditionnelle dans la région des Savanes au Togo. - L'accompagnement technique pour la mise en place des systèmes de micro-irrigation et pour les changements des systèmes d'exploitation (maraîchage, introduction de la pisciculture dans les retenues d'eau). - Le développement d'activités de sensibilisation et de capacitation sur les meilleures pratiques agricoles dans un contexte de changement climatique (Climate Smart Agricultural Practices). - Le Togo souhaite également réaliser une étude de faisabilité sur la mise en œuvre d'un système d'assurances agricoles, comme une mesure qui aiderait à garantir la durabilité des options d'adaptation envisagées. - La construction de retenues d'eau destinés exclusivement à l'abreuvement des troupeaux transhumants, afin d'éviter les conflits d'usage pour la consommation de la ressource et de limiter la dispersion des troupeaux à la recherche de points d'eau sur le territoire, réduisant ainsi les possibles dommages aux cultures, qui sont à la source de conflits sociaux très importants au pays. - L'introduction d'activités piscicoles, afin de permettre une diversification des sources de revenus pour les producteurs agricoles. La mesure sera construite sur l'expérience acquise à travers la mise en œuvre du projet ADAPT avec l'appui du FEM et du FIDA, dont la fin des activités est prévue pour décembre 2016. Ce projet aura permis la création de 10 retenues d'eau et la mise à disposition des agriculteurs de kits de micro-irrigation – goutte à goutte. Le projet a également un volet d'introduction des activités piscicoles dans les retenues d'eau. Actuellement entre 200 et 300 agriculteurs ont bénéficié des kits d'irrigation des activités du projet ADAPT tout au long du pays. L'objectif de la présente mesure est de cibler la zone des Savanes comme zone pilote d'intervention, afin de concentrer et de mieux mesurer l'impact effectif de l'action sur les producteurs agricoles et ses retombées directes, indirectes et induites sur l'économie régionale.
TARGET ID (TARGET AREAS, BENEFICIARIES)	<p>Localisation : Région des Savanes, au Nord du Togo. Territoire très fortement vulnérable de par la faible disponibilité de la ressource en eau, et porte d'entrée des routes de transhumance dans le pays.</p> <p>Bénéficiaires : Petits producteurs agricoles, y compris les femmes, de la région des Savanes au Togo, et éleveurs transhumants, hautement vulnérables aux impacts des changements climatiques.</p>

IMPLEMENTERS	Ministère de l'Agriculture de l'Élevage et de l'Hydraulique (MAEH), Direction de l'Aménagement de l'Équipement et de la Mécanique Agricole (DAEMA), Direction Régionale de l'Agriculture de l'Eau et de l'Hydraulique (DREAH) de la région des Savanes.
INDICATORS	n/a
TIMELINE	5 ans
COSTS	USD 50 millions
FUNDING SOURCES	Plusieurs options de financement seront explorées dont: La continuité du projet ADAPT, dont la fin est prévue pour décembre 2016. L'accès aux fonds du Programme « Adapting Irrigation to Climate Change (AICCA) », du FIDA, qui a déjà appuyé ce type de projets dans des pays comme le Mali ou le Niger La présentation d'une proposition de projet au Fonds d'Adaptation des Nations Unies.

PROJECT TITLE	DEFINITION / AMENAGEMENT DES COULOIRS ET ZONES DE TRANSHUMANCE
SECTOR	Secteur Agricole
CONTEXT	<p>Au Togo, la transhumance est une activité importante en raison du grand nombre de têtes de bétail qui sont accueillies chaque année au pays et des conflits sociaux que cette activité engendre. En effet, des éleveurs transhumants provenant des pays du Sahel arrivent chaque année au Togo de la mi-janvier à la fin du mois de mai, à la recherche de pâturages et de points d'eau pour le bétail. Les principaux points d'entrée de la transhumance au Togo sont la région des Savanes au Nord et l'Est des régions de la Kara et de la région Centrale. Des conflits peuvent émerger lorsque les troupeaux provoquent des dommages aux champs et aux récoltes et polluent les points d'eau destinés à la consommation humaine.</p> <p>Au Togo, la pratique de l'élevage est une activité sédentaire qui s'associe à la principale source de revenus pour les producteurs agricoles, soit la production végétale. Traditionnellement, les agriculteurs togolais laissent la récolte aux champs pendant une période plus ou moins longue de temps. Des conflits avec les éleveurs transhumants provenant des pays du Sahel peuvent apparaître lorsque les troupeaux consomment ou endommagent, lors de leur passage, tout ou une partie des récoltes des producteurs togolais. Des conflits d'usage peuvent également éclore lorsqu'il y a compétition pour la ressource en eau pour la consommation humaine et animale, les troupeaux piétinant et polluant les points d'eau initialement destinés à la consommation humaine. La croissance démographique, le développement des terres de culture et la hausse du nombre de têtes de bétail qui arrivent chaque année au Togo à la recherche de pâturages et de l'eau, ne font qu'aggraver le problème. De plus, il existe un enjeu important de communication, car les éleveurs transhumants sont généralement allophones, ne parlant pas la langue locale. Cependant il demeure un problème financier important pour assurer la gestion effective de la transhumance au Togo. Les taxes par tête de bétail (5 000 Francs CFA/tête à l'entrée au pays et 5 000 Francs</p>

	CFA/tête à l'arrivée à la préfecture d'accueil) ne suffisent pas à couvrir les coûts nécessaires pour une bonne gestion de la transhumance, afin de minimiser les conflits.
OBJECTIVES	<p>La présente mesure vise à garantir une bonne gestion de la transhumance au Togo et à réduire les conflits y associés, à travers la définition des couloirs de transhumance et l'aménagement des aires d'accueil.</p> <p>Cette mesure est basée sur les actions déjà réalisées dans le cadre du projet ADAPT, avec l'appui du FEM et du FIDA, qui a permis l'implantation de 5 000 balises pour la délimitation des couloirs de transhumance dans la région des Savanes au Nord du Togo. L'objectif de la présente mesure est de répandre l'action dans les deux autres régions du Togo dont la transhumance pose un important défi : la région de Kara et la région Centrale.</p>
ACTIVITIES	<ul style="list-style-type: none"> • Aménagement des couloirs de transhumance à travers l'implantation de 10 000 balises. • Construction de points d'eau destinés à l'alimentation en eau des troupeaux (abreuvoirs). • Aménagement de 3 zones d'accueil pour les élevages transhumants. • Mise sur place d'un système d'information par panneaux fixes dans les principales langues parlées par les éleveurs transhumants pour les sensibiliser à l'utilisation des couloirs de transhumance et des zones d'accueil. • Activités de communication aux populations togolaises pour les informer et les sensibiliser au respect des couloirs de transhumance. • Appui au développement de la filière du foin dans les principales régions d'accueil pour la vente aux éleveurs transhumants. • Développement de formations destinées aux fonctionnaires pour le renforcement des capacités autour de la médiation des conflits.
TARGET ID (TARGET AREAS, BENEFICIARIES)	<p>Localisation : Région Kara et région Centrale</p> <p>Bénéficiaires : Petits producteurs agricoles, y compris les femmes, de la région Centrale y de la Kara, et éleveurs transhumants. Population hautement vulnérable aux impacts des changements climatiques.</p>
IMPLEMENTERS	Ministère de l'Agriculture de l'Élevage et de l'Hydraulique (MAEH), Direction de l'Élevage (DE) Direction de l'Aménagement de l'Équipement et de la Mécanique Agricole (DAEMA), Directions Régionales de l'Agriculture de l'Eau et de l'Hydraulique (DREAH) des régions Kara et Centrale.
INDICATORS	n/a
TIMELINE	5 ans
COSTS	USD 20 millions
FUNDING SOURCES	<p>Plusieurs options de financement seront explorées dont:</p> <ul style="list-style-type: none"> • La continuité du projet ADAPT, dont la fin est prévue pour décembre 2016. • L'obtention des fonds de l'Alliance globale pour la résilience (AGIR) - Sahel et Afrique de l'Ouest • Le financement du projet par l'Agence Française du Développement avec l'appui des centres de recherche agronomiques comme IRD ou le CIRAD. <p>La présentation d'une proposition de projet au Fonds d'Adaptation des Nations Unies.</p>

PROJECT TITLE	PROMOTION DE VARIETES RESILIENTES AUX CHANGEMENTS CLIMATIQUES
SECTOR	Secteur Agricole
CONTEXT	<p>Les changements climatiques prévus pour le Togo et notamment la hausse des températures et les périodes de sécheresse plus fréquentes et intenses, auront comme conséquence directe une réduction des rendements agricoles. Cette baisse des rendements, ajoutée à l'augmentation prévue de la population togolaise fait augmenter les pressions sur le système de production agricole, déjà fragile, et pourrait mettre en péril la sécurité alimentaire du pays. L'étude du Programme des Nations Unies pour l'environnement (PNUE) Africa's Adaptation Gap (L'écart de l'adaptation en Afrique)¹⁴ considère qu'une hausse de la température moyenne de plus de 2°C, scénario très probable étant données les tendances actuelles, provoquerait une descente des rendements agricoles de 15 à 20%. Ceci pourrait avoir d'importantes conséquences sur la sécurité alimentaire et être source d'instabilité sociale. Selon le même rapport, une hausse de plus de 3°C des températures moyennes rendrait inaptes à la culture du maïs, du mil et du sorgho les principales régions productrices de l'Afrique. La consolidation des ressources hydriques et une gestion efficace de l'eau disponible est, telle que mentionné précédemment, une première stratégie permettant de faire face aux impacts négatifs des changements climatiques au Togo. D'autres solutions existent afin d'augmenter la capacité d'adaptation des producteurs togolais au changement climatique et d'assurer la sécurité alimentaire au pays, telles que l'utilisation de variétés résilientes au climat. Des pays comme la Zambie ou le Burkina Faso ont déjà connu les effets positifs de l'implantation de ce type de mesures.</p>
OBJECTIVES	<p>L'objectif de la présente mesure est de contribuer à garantir la sécurité alimentaire au Togo et d'assurer une plus grande viabilité des exploitations agricoles togolaises à travers l'introduction dans les assolements des variétés résistantes au changement climatique.</p>
ACTIVITIES	<ul style="list-style-type: none"> • Recherche des meilleures variétés au Togo plus résilientes au changement climatique. • Réalisation de projets pilotes sur les exploitations d'agriculteurs leaders qui pourraient favoriser la diffusion des résultats et les effets de boule de neige pour la mise en œuvre de la mesure. • Accompagnement technique des agriculteurs togolais pour la mise en place de systèmes d'exploitation et d'assolements plus résilientes au changement climatique. • Mis à disposition des producteurs de semences de variétés plus résistantes à la sécheresse et accompagnement technique tout au long du processus, notamment pour l'autoproduction des semences à utiliser dans les campagnes subséquentes. • Développement de mécanismes de communication et de diffusion des résultats obtenus par les agriculteurs adhérant au programme.

	<ul style="list-style-type: none"> • Étude de faisabilité pour la mise en place d'un système d'assurance, permettant de contribuer à la pérennité de la mesure proposée.
TARGET ID (TARGET AREAS, BENEFICIARIES)	<p>Localisation : Région Maritime, où le riz est la culture prédominante et la région des Plateaux au Togo, dont la principale culture est le manioc.</p> <p>Bénéficiaires : Producteurs agricoles togolais, y compris les femmes, de la région Maritime et de la région des Plateaux au Togo, hautement vulnérables aux impacts des changements climatiques.</p>
IMPLEMENTERS	Ministère de l'Agriculture de l'Élevage et de l'Hydraulique (MAEH), Direction des Filières Végétales (DFV), Directions Régionales de l'Agriculture de l'Eau et de l'Hydraulique (DREAH) des régions Maritime et des Plateaux.
INDICATORS	n/a
TIMELINE	3 ans
COSTS	USD 10 millions
FUNDING SOURCES	<p>Plusieurs options de financement seront explorées dont:</p> <ul style="list-style-type: none"> • La continuité du projet ADAPT, dont la fin est prévue pour décembre 2016. • L'obtention des fonds de l'Alliance globale pour la résilience (AGIR) - Sahel et Afrique de l'Ouest • Le financement du projet par l'Agence Française du Développement avec l'appui des centres de recherche agronomiques comme IRD ou le CIRAD. <p>La présentation d'une proposition de projet au Fonds d'Adaptation des Nations Unies.</p>

OTHER ADAPTATION PRIORITIES

SECTOR	OBJECTIVE	ACTIVITIES	IMPLEMENTERS	SOURCE OF FINANCE	TIMELINE	COSTS
Energy	Gestion durable des énergies traditionnelles (bois de chauffe et charbon de bois)	<p>1.1 Promotion des biocarburants et valorisation des terres dégradées ((i) sensibilisation des populations à l'importance des biocarburants et sur la culture de Jatropha à petites échelles; (ii) production des pépinières, distribution des plants aux agriculteurs et culture de Jatropha sur des terres non exploitées comme les basfonds ; (iii) production et usage d'huile de Jatropha à des fins de biocarburant : (iv) élaboration des politiques de réglementation de la culture des plantes et de la production de biocarburants)</p> <p>1.2 Formation et recherches d'appui pour la production d'énergies nouvelles et renouvelables ((i) Mettre en place des dispositifs de formation sur la base d'un partenariat Universités-décideurs politiques-ONG ; (ii) Mener des campagnes d'informations et de sensibilisation à la production et à l'utilisation des ER ; (iii) Élaborer et exécuter un plan d'électrification au solaire et au biogaz ; (iv) Faire une évaluation des gisements solaire et éolien togolais ainsi que les opportunités d'exploitation.).</p> <p>1.3 Détaxation à l'importation des équipements d'énergie solaire et éoliens</p>	MME/DGE Universités ONGs	RI (Budget de l'État) RE (PTF)	Longe-terme	n/a

		(révision de la loi actuelle en incluant exonération sur les équipements accessoires).				
Energy	Mise en place de stratégies d'économies d'énergie électrique	(i) Établissement des normes et labels sur les équipements électriques importés (ii) Inventaire des différents équipements fonctionnant à base d'énergie électrique et de leurs caractéristiques (iii) Élaboration d'un programme ,conjoint de recherches appliquées Université- Direction de l'Énergie sur l'élaboration d'outils, de méthodes devant aboutir à des normes d'estimation du bilan thermique et de mesures sur l'efficacité énergétique dans les bâtiments et édifices ; (iv) Mise en place sur le long terme de mesures incitatives (subventions, achat hors-taxes) pour la promotion d'appareils et de systèmes d'éclairages économes en énergie; (v) Élaboration de programmes de sensibilisation et d'éducation sur les gestes et habitudes conduisant aux économies d'énergie électrique	MME/DGE CEET Universités	RI (Budget de l'État) RE (PTF) PPPs	Court-terme	n/a
Energy	Développement de mini réseaux hybrides pour l'électrification rurale	(i) Sensibiliser les autorités sur la nécessité d'adopter une politique énergétique nationale; (ii) Effectuer les études de faisabilité préalables à la réalisation de ces ouvrages (iii) Installer des microcentrales hydroélectriques sur 6 cours d'eau. (iv) Élaborer des plans	MME/DGE	RI (Budget de l'état) RE (PTF, Fondations, ONG Internationales) ppp	Moyen-terme	n/a

		de (inter) connexion entre les unités de production et les consommateurs. (iv) Élaborer des plans de (inter) connexion entre les unités de production et les consommateurs				
Agriculture	Construction et/ou réhabilitation des retenues d'eau pour la micro-irrigation, l'abreuvement du bétail en milieu rural dans toutes les régions.	(i) Rendre accessibilité des kits de micro-irrigation (ii) Mise en place d'un système de subvention d'achat des kits pour la construction et réhabilitation des retenues d'eau (iii) prioriser les zones sensibles aux impacts des CC (iv) Renforcement les capacités techniques des producteurs dans toutes les régions sur les méthodes de micro-irrigation (iv) Initiation des producteurs à la conception des petits bassins pour la récupération d'eau de ruissellement en période de forte pluviométrie	MAEH DAEMA	FEM PTFs Fonds d'Adaptation RI	Court-terme	n/a
Agriculture	Définition/ aménagement des couloirs et zones de transhumance	(i) Traduire et diffuser le code pastoral en langues locales (ii) Renforcement des capacités des acteurs pour une prise en compte des changements climatiques dans la planification des sous-programmes du PNIASA. (iii) Renforcement de capacité des acteurs spécialisés dans la gestion de la transhumance. (iv) Mettre en place des mécanismes de sécurisation foncier des couloirs définis	MAEH MERF DRAEH DAEMA	RI FEM Alliance Globale pour la Résilience (AGIR) - Sahel et Afrique de l'Ouest Agence Française du Développement Fonds d'Adaptation	n/a	n/a

		(v) Aménagement des zones et couloirs de transhumance				
Agriculture	Renforcement de la gestion intégrée de la fertilité des sols (GIFS)	<ul style="list-style-type: none"> (i) Diffusion des technologies GIFS à différentes cultures pour réduire et rationaliser l'utilisation des engrais minéraux; (ii) Diffusion des pratiques agroforestières (iii) Promotion de la culture en terrasse sur les flancs de montagne ; (iv) Renforcement de capacités des vulgarisateurs de l'ICAT, des OPA et des ONG; (v) Utilisation des fumures organiques des animaux; (vi) Utilisation des légumineuses de couverture ; (vii) Utilisation des associations avec les légumineuses à graines et rotation des cultures; (viii) Utilisation des composts avec les débris végétaux et d'ordures ménagères ; (ix) Conduite des activités Champ école agriculteurs (CEA) en milieu paysan 	<p>MAEH ICAT ITRA DFV ONGs</p>	<p>RI (PIP) RE (FC, FEM, Adhésion des Producteurs PTFS)</p>	Court-terme	n/a
Urban areas	Gestion rationnelle et durable des déchets en milieu urbain	<ul style="list-style-type: none"> (i) Adoption de la politique nationale de l'habitat et du développement urbain au Togo. (ii) Déconcentration des services techniques du ministère de l'urbanisme et de l'habitat notamment l'agence nationale d'assainissement et de salubrité publique. (iii) Renforcement des capacités de 	<p>Mairies (voiries) MERF MUHCV</p>	<p>Financement privé (ménages, usagers) ppp Fonds Vert pour le Climat Fonds d'Adaptation RI</p>	Court-terme	n/a

		l'agence nationale d'assainissement et de salubrité publique (ANASAP). (iv) Organisation des campagnes de sensibilisation (IEC) sur les dangers liés à la prolifération des déchets.				
Urban areas	Renforcement de l'assainissement et du drainage des eaux pluviales dans les principaux centres urbains	(i)Adoption de la Politique Nationale de l'Habitat et du Développement Urbain (PNH DU) au Togo ; (ii) renforcement les capacités en ressources humaines et techniques de la direction générale des infrastructures et équipements urbains ; (iii) Décentralisation des services de la Direction Générale des Infrastructures et des Équipements Urbains ; (v) Acquisition d'engins pour l'entretien des ouvrages ; (vi) Sensibilisation des populations pour la sauvegarde des ouvrages	MATDCL MUHCV	RI ppp Fonds Vert pour le Climat Fonds d'Adaptation	n/a	n/a
Urban areas	Aménagement et réhabilitation de la voirie urbaine dans les principaux centres urbains	(i) Adoption de la Politique Nationale de l'Habitat et du Développement Urbain (PNH DU) au Togo ; (ii) décentralisation des services de la Direction Générale des Infrastructures et des Équipements Urbains ; (iii) renforcerle s capacitéese n ressources humaines et techniques de la direction générale des infrastructures et équipements urbains ; (iv) Acquisition de matériels informatiques (logiciels, GPS, et autres acquis) ; (iv) Sensibilisation des populations pour la sauvegarde des ouvrages	MATDCL MUHCV	RI ppp Fonds Vert pour le Climat Fonds d'Adaptation	n/a	n/a

Water resources	Conservation des eaux de pluies et réutilisation des eaux usées	(i) Mise en place de dispositifs de collecte des eaux de pluies (pour l'approvisionnement des maisons) et des eaux de ruissellement afin de créer des marres (pour la fabrication des parpaings et abreuvement du bétail) ; (ii) Sensibilisation des populations à intégrer la collecte des eaux de toiture dans les projets de construction d'habitations	MAEH (Dir. Chargée de l'eau et de l'assainissement)	Financement BM FEM JICA	n/a	n/a
Water resources	Amélioration de la gestion de l'eau agricole	(i) Appui à un bon drainage des sols agricoles afin de réduire la décomposition anaérobie de la matière organique source d'émission du méthane ; (ii) Formation des exploitants sur gestion de l'eau ; (iii) Renforcement des capacités des institutions chargées de fournir les données météorologiques et hydrologiques afin de permettre de rendre ces données plus disponibles ; (iv) Multiplication des pluviomètres et station synoptiques et formation des agents chargé d'enregistrer ou de lire les différents appareils	MAEH, DAEMA, DGM	RI BM UEMOA Fonds Vert pour le Climat	Court/Moyen-terme	n/a
Water resources	Amélioration de la gestion des eaux souterraines	i) Caractérisation et quantification ORE (comptabilité ou bilan des eaux) des aquifères. (ii) Élaboration d'une politique de protection des eaux souterraines ; (iii) Renforcement des capacités des acteurs en charge de la gestion de la ressource eau souterraine	MAEH, DRE	RI FEM UEMOA	Court/Moyen-terme	n/a

Coastal areas	Amélioration du cadre réglementaire et de la gestion des connaissances du phénomène d'érosion côtière	<p>(i) Mise en oeuvre des actions d'information, de formation et de sensibilisation de l'ensemble des parties prenantes de la zone littorale (industriels, agriculteurs, pêcheurs, grand public), à travers l'utilisation des canaux et messages appropriés de communication relatifs à l'érosion côtière, la multiplication des échanges d'information et le développement de stratégies d'écoles mobiles avec des sessions libres rassembleront les professionnels de plusieurs secteurs ;</p> <p>(ii) Appui au développement de la gestion des connaissances, en appuyant les travaux de recherche fondamentale et appliquée portant sur les impacts des changements climatiques et l'adaptation ;</p> <p>(iii) Appui au développement et à la diffusion des scénarios climatiques et socio-économiques ;</p> <p>(iv) Appui à la consolidation du dispositif d'observation, à travers le développement des bases de données qui permettront de traiter de bonnes informations, la mise en oeuvre des actions de prévention des risques liés au changement climatique, la formation et la création de postes suffisants dans ce domaine de l'observation ; (vi) Mettre en place un texte réglementaire pour contrôler les usages et les installations sur la frange côtière confrontée à l'érosion et à la</p>	MERF/DE Universités	RI UEMOA Coopération bilatérale	Court/Moyen-terme	n/a
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		<p>submersion ;</p> <p>(vii) Renforcement de la résilience des communautés du littoral aux changements climatiques ;</p> <p>(viii) Gouvernance de la zone côtière</p> <p>(v) Renforcement des échanges internationaux;</p>				
Coastal areas	Réalisation des investissements structurants de protection de la côte	<p>(i) Réalisation des travaux de suivi relatifs à la problématique biophysique de la zone;</p> <p>(ii) Poursuite de la réalisation des ouvrages de protection, tels que les épis et les brises lames, déjà construits pour stabiliser la côte;</p> <p>(iii) définir des normes de construction d'immeubles et d'infrastructures de communication et d'assainissement appropriées à la zone ;</p> <p>(iv) réaliser, au plan national, les grands travaux dans le cadre du programme régional de lutte contre l'érosion côtière de l'UEMOA;</p>	MERF/DE Organisme National chargé de l'Action de l'État en Mer (ONAEM)	RI Banques (BM, BOAD, BIDC, BIO, BAD) Coopération bilatérale et Multilatérale	Court/Moyen-terme	n/a
Land management	Reboisement et protection des zones à écosystème fragile (flancs de montagne, berges des cours d'eau) pour lutter contre les	<p>Vulgarisation des textes réglementaires en lien avec le reboisement et la protection des zones fragiles;</p> <ul style="list-style-type: none"> • Élaboration des textes d'application de certains textes législatifs et/ou réglementaires • Équipement en moyens humains et matériels les structures en charge des reboisements et de la protection des zones fragiles ; 	MERF/DRF ODEF Communautés de base	RI FEM BOAD ppp PTFs Coopération bilatérale	Court/Moyen-terme	n/a

	inondations, les vents violents et l'érosion	<ul style="list-style-type: none"> • Incitation et encouragement aux reboisements privés en organisant des foires forestières ; • Mise en place de pépinières, techniques de reboisement, pratiques sylvicoles, agroforesterie, plantations en couloirs, pare feu, brise vent; • Accompagnement technique ; 				
Land management	Renforcement de capacités (techniques et matérielles) des services de météorologie pour une bonne prévision et planification des activités	<p>(i) Renforcement et extension de stations climatiques et pluviométriques sur l'ensemble du territoire ;</p> <p>(ii) Réalisation des prévisions climatiques sur la base des imageries satellitaires ;</p> <p>(iii) Réalisation du suivi-environnemental ;</p> <p>(iv) Renforcement et création de stations agro-météorologiques fonctionnelles ;</p> <p>(v) Renforcement de capacités en prévision et modélisation climatiques ;</p> <p>(vi) Appui en matériel de mesure du climat pour la Direction nationale de la météo.</p>	MIT, DGM, MERF/ST-RCC	RI OMM BAD CILSS UE BM ACMAD	Court/Moyen-terme	n/a

TONGA

ADAPTATION PRIORITY PROJECTS

PROJECT TITLE	DESIGN AND IMPLEMENT ON-THE-GROUND ACTIONS THAT BUILD A RESILIENT TONGA BY 2035 AT NATIONAL, ISLAND AND COMMUNITY LEVELS
SECTOR	Coastal sector, Infrastructure
CONTEXT	Tonga has a range of priority projects and project proposals, which in themselves could build climate resilience, or which need additional resources, or reviewing using a climate resilience lens, in order to become climate resilience building. These include coastal infrastructure, transport, renewable energy, agriculture and water management and flood mitigation projects.
OVERALL OBJECTIVE	Design and implement key resilience 'pipeline programmes' for a resilient Tonga by 2035
ACTIVITIES	Strengthen coastal infrastructures through the timely implementation of the Tonga Coastal Resilience Project and to replicate this project in the outer islands; Implement the Tonga Climate Resilient Transport Project in a timely manner to facilitate the safe, efficient and sustainable movements of people and goods in Tonga while strengthening the resilience of the transport sector; Strengthen Tonga's renewable energy infrastructure through the timely implementation of renewable energy initiatives including grid-connection of the existing solar farms in line with, and to achieve Tonga's NDC and Energy Road Map targets; Implement SMART agricultural and water management approaches in the context of climate change and disaster risks; Design and implement appropriate, environmentally sensitive flood management responses in all low-lying areas around Tonga
OUTCOMES	Safer and stronger coastal and marine infrastructures; cleaner and renewable sources of energy; integrated coastal and ecosystem based adaptation implemented; flood management and to achieve food and water security.
COSTS & SOURCE OF FINANCE	n/a

PROJECT TITLE	DESIGN AND IMPLEMENT ON-THE-GROUND ACTIONS THAT BUILD A RESILIENT TONGA BY 2035 AT NATIONAL, ISLAND AND COMMUNITY LEVELS
SECTOR	Fisheries
CONTEXT	These are pipeline resilient projects that need to be implemented urgently in Tonga. These projects are at the front line of building resilience across Tonga. Prolonged delay in implementation would not only raise the cost but it continues to weaken natural and socio-economic systems that supported Tonga's sustainable development. These are the pipeline projects that are extending beyond anticipated worsening of extreme events and climate change impacts, including slow onset events, to also

consider the underlying causes of vulnerability. These pipelines address the cause of Tonga's vulnerability to climate change and disaster risk. Special Management Areas (SMAs) are Tonga's response to direct community action and involvement in the management of local fisheries resources. They have proved highly successful in activating local communities. Communities need further to strengthen their local SMA monitoring and management capacity. Due to declines in inshore fisheries, a few species have been found to be suitable, low-impact income-generating aquaculture alternatives to fishing. The further development of farmed coral and giant clam aquaculture, for example, should be fully supported as a climate-resilience building mechanism for local communities.

OVERALL OBJECTIVE	Strengthen the sustainable development and management of fisheries and aquaculture resources to increase these sectors' resilience to the impacts of climate change.
ACTIVITIES	Undertake training for communities in management and monitoring of Special Management Areas (SMAs); Resource environmentally sensitive fishery resources enhancement programmes including farmed coral and aquaculture of giant clam; Strengthen the knowledge of fisheries managers about Fish Aggregation Devices (FADs), extending their use where appropriate and improving the design to be more resilient to the impact of storms and cyclones
OUTCOMES	Improved resourcing for fisheries monitoring, extension and management, particularly for inshore areas, including for the monitoring capacity of Special Management Areas (SMA).
COSTS & SOURCE OF FINANCE	n/a

PROJECT TITLE	DESIGN AND IMPLEMENT ON-THE-GROUND ACTIONS THAT BUILD A RESILIENT TONGA BY 2035 AT NATIONAL, ISLAND AND COMMUNITY LEVELS
SECTOR	Community engagement
CONTEXT	This sub-objective will involve the biggest programme of activities associated with the JNAP2. The sub-objective is focused on implementing the targets for a Resilient Tonga in at least 23 identified champion villages. To achieve this, it is essential that there is further engagement with communities to develop a comprehensive planning approach aimed at realizing the resilience building targets. This engagement process will need to occur within the 10 year timeframe of JNAP2 as the current CDPs are designed to be living documents and, by necessity, need to evolve and develop over time. The CDPs will also need to include resource management arrangements for water, environment, land use and coastal zone protection where these apply.
OVERALL OBJECTIVE	Fully implement community development plans that are aligned with the goal and targets of a Resilient Tonga in 23 champion villages

ACTIVITIES	Identify at least 23 champion villages, one in each of the 21 districts, and two in Ongo Niua, and progressively implement revised community development plans, which integrate natural resource management arrangements
OUTCOMES	Community development plans that are aligned with the goal and targets of a Resilient Tonga are fully implemented in 23 champion villages, one in each district throughout Tongatapu and the outer islands.
COSTS & SOURCE OF FINANCE	n/a

URUGUAY

AGRICULTURE PRIORITY PROJECTS

SECTOR	SECTOR AGROPECUARIO - SISTEMAS DE PRODUCCIÓN
OVERALL OBJECTIVE	Investigación de largo plazo en sistemas de producción a través de Plataformas Agroambientales
ACTIVITIES	Desarrollo de ensayos de investigación de largo plazo en sistemas de producción para aumentar y estabilizar la productividad y mejorar la eficiencia del uso del agua y el manejo de nutrientes, con el fin de lograr una intensificación sostenible. Evaluación de la productividad física y económica, así como de los potenciales impactos del manejo de los sistemas de producción sobre los recursos naturales y los servicios ecosistémicos. Los ensayos permiten generar información de base para la calibración y la validación de modelos biofísicos y la construcción de indicadores de sostenibilidad ambiental de los sistemas de producción.
OUTCOMES	A definir
TARGET ID (TARGET AREAS; BENEFICIARIES)	Productores agropecuarios
IMPLEMENTERS	INIA, Redes y organizaciones de productores, Mesas Tecnológicas Sectoriales, UDELAR, Sistema Nacional de Transformación Productiva y Competitividad (Transforma Uruguay) de Presidencia de la República, MVOTMA
TIMELINE	2025
COSTS & FINANCIAL RESOURCES	INIA: USD 2.3 million

SECTOR	SECTOR AGROPECUARIO - SISTEMAS DE PRODUCCIÓN
OVERALL OBJECTIVE	Investigación para aumentar la persistencia de praderas sembradas
ACTIVITIES	Desarrollo de investigación para aumentar la persistencia y la productividad de las pasturas mediante el mejoramiento genético de especies forrajeras, el uso de nuevas cepas de Rhizobios y el manejo adecuado del pastoreo y la fertilización.

OUTCOMES	A nivel experimental, la vida media de las pasturas aumentó un 33% (1 año) y un 20% su productividad anual.
TARGET ID (TARGET AREAS; BENEFICIARIES)	Productores ganaderos ; Productores lecheros
IMPLEMENTERS	INIA ; Facultad de Agronomía (UDELAR)
TIMELINE	2025
COSTS & FINANCIAL RESOURCES	INIA : USD 1.3 million USDA, ISUSA, Grassland Innovation : USD 291 thousand

SECTOR	SECTOR AGROPECUARIO - SISTEMAS DE PRODUCCIÓN
OVERALL OBJECTIVE	Generación de estrategias óptimas de producción y uso de reservas forrajeras
ACTIVITIES	Generación de recomendaciones para la producción y el uso eficiente de reservas forrajeras de alta calidad, incluyendo calendarios de corte y fertilización, y selección de variedades forrajeras de alto valor nutritivo.
OUTCOMES	Se ha expandido el uso de reservas forrajeras de alta calidad en predios ganaderos y lecheros
TARGET ID (TARGET AREAS; BENEFICIARIES)	Productores ganaderos ; Productores lecheros
IMPLEMENTERS	INIA ; Facultad de Agronomía (UDELAR)
TIMELINE	2025
COSTS & FINANCIAL RESOURCES	INIA : USD 230 thousand

SECTOR	SECTOR AGROPECUARIO - SISTEMAS DE PRODUCCIÓN
OVERALL OBJECTIVE	Investigación para el incremento sostenible de la productividad en la ganadería extensiva y desarrollo de herramientas para la gestión sostenible del campo natural
ACTIVITIES	Investigación sobre estrategias nutricionales y mejoramiento genético animal para la mejora de la productividad de la ganadería extensiva. Desarrollo de estrategias de diferimiento de forraje y manejo de carga animal para una mayor estabilidad de la producción. Desarrollo de herramientas para la toma de decisiones de pastoreo y mejoramiento del campo natural (fertilización y siembra en cobertura) que optimicen la gestión sostenible del campo natural.
OUTCOMES	La variabilidad interanual de la producción de forraje disminuyó un 20% y aumentó un 20% la producción de materia seca a nivel experimental. La eficiencia de conversión de pasto a carne se incrementó un 10%
TARGET ID (TARGET AREAS; BENEFICIARIES)	Productores ganaderos
IMPLEMENTERS	INIA ; Facultades de Agronomía, Veterinaria e Ingeniería (UDELAR), FUCREA, IPA, UNE, AUGAP
TIMELINE	2025
COSTS & FINANCIAL RESOURCES	Innovagro (ANII): USD 429 thousand INIA : USD 1.2 million

SECTOR	SECTOR AGROPECUARIO - SISTEMAS DE PRODUCCIÓN
OVERALL OBJECTIVE	Investigación en ovinos para producir con rumiantes menores, más eficientes, adaptados y robustos
ACTIVITIES	Desarrollo del programa de investigación para la producción ovina sostenible de alto valor agregado y con estabilidad, incluyendo la selección de rumiantes menores, más eficientes, adaptados y robustos (RUMIAR).
OUTCOMES	A definir
TARGET ID (TARGET AREAS; BENEFICIARIES)	Productores ovinos

IMPLEMENTERS	INIA ; SUL, SCMAU, SCMDU, SCCU, UDELAR, Institut National de la Recherche Agronomique (INRA) de Francia
TIMELINE	2025
COSTS & FINANCIAL RESOURCES	INIA: USD 249 thousand

SECTOR	SECTOR AGROPECUARIO - SISTEMAS DE PRODUCCIÓN
OVERALL OBJECTIVE	Evaluación del mejoramiento genético en vacunos a través de cruzamientos entre tipos biológicos
ACTIVITIES	Desarrollar una evaluación de cruzamientos de tipos biológicos con tolerancia a condiciones más cálidas (británicos, cebuínos y continentales), mediante el análisis de datos provenientes de la estación experimental Bañados de Medina de Facultad de Agronomía y de predios de la Caja Notarial.
OUTCOMES	A definir
TARGET ID (TARGET AREAS; BENEFICIARIES)	Productores ganaderos de carne
IMPLEMENTERS	INIA ; Facultad de Agronomía (UDELAR)
TIMELINE	2025
COSTS & FINANCIAL RESOURCES	INIA: USD 102 thousand

SECTOR	SECTOR AGROPECUARIO - SISTEMAS DE PRODUCCIÓN
OVERALL OBJECTIVE	Investigación sobre mejoramiento genético vegetal

ACTIVITIES	Desarrollo de variedades con mayor potencial de rendimiento, adaptadas a condiciones de estrés abiótico (hídrico, térmico) y estrés biótico (plagas y enfermedades) en trigo, cebada, soja, arroz, cultivos hortícolas y plantaciones forestales y cítricas. El objetivo es ofrecer una mayor diversificación genética para reducir riesgos biológicos e incrementar las opciones de aprovechamiento de la interacción genotipo-ambiente. En citrus, se están desarrollando portainjertos tetraploides tolerantes a sequía y a enfermedades emergentes.
OUTCOMES	En arroz, aumentó un 10% el valor de producción en el área sembrada con los nuevos genotipos. En citrus, se ajustó proceso de micropropagación de portainjertos y se evaluó la calidad y la productividad de distintas especies de portainjerto. En forestal, aumentó un 20% la productividad de las plantaciones de Eucalyptus globulus y E. maidenii que utilizan los clones generados por el proyecto y aumentó un 20% la productividad de las plantaciones de E. tereticornis que utilizan la semilla generada por el proyecto
TARGET ID (TARGET AREAS; BENEFICIARIES)	Productores agrícolas, forestales y hortifrutícolas
IMPLEMENTERS	INIA ; Mesas Tecnológicas Sectoriales (soja y trigo), UDELAR, Forestal Atlántico Sur, Vivero Solís, ACA
TIMELINE	2025
COSTS & FINANCIAL RESOURCES	INIA: USD 11.1 million JIRCAS, ANII, IICA/PROCISUR, Mesa Nacional de Cebada, GCDT, MONSANTO, UPM y BIOTECH: USD 1 million

SECTOR	SECTOR AGROPECUARIO - SISTEMAS DE PRODUCCIÓN
OVERALL OBJECTIVE	Investigación sobre sanidad y protección vegetal
ACTIVITIES	Desarrollo de investigación sobre el manejo de enfermedades y plagas en cultivos integrando control químico y biológico. Desarrollo e implementación de estrategias de manejo regional de plagas en fruticultura. Desarrollo de estrategias de monitoreo y manejo sanitario para Eucalyptus spp
OUTCOMES	Se desarrollaron y comunicaron recomendaciones de manejo. El sector productivo ha adoptado estrategias de manejo.
TARGET ID (TARGET AREAS; BENEFICIARIES)	Productores agrícolas, forestales y hortifrutícolas

IMPLEMENTERS	INIA ; DGSA, DIGEGRA, DGF, UDELAR, SPF
TIMELINE	2025
COSTS & FINANCIAL RESOURCES	INIA: USD 3.2 million ANII: USD 603 thousand

SECTOR	SECTOR AGROPECUARIO - SISTEMAS DE PRODUCCIÓN
OVERALL OBJECTIVE	Generación de conocimientos y herramientas para mejorar la sostenibilidad de los sistemas regados
ACTIVITIES	Generación de información para apoyar la toma de decisiones de riego con el objetivo de mejorar la eficiencia en el uso de agua, mediante la determinación del volumen de agua, la frecuencia y las técnicas apropiadas para diferentes escalas de producción, tipos de cultivo y condiciones del suelo. Adecuación de los sistemas de riego a las condiciones de los sistemas productivos de Uruguay. Desarrollo y diseminación de herramientas para la programación y el monitoreo del riego adecuadas a las diferentes situaciones productivas.
OUTCOMES	Más del 30% de los productores en sistemas de producción agrícola-ganaderos, agrícola-lecheros y ganaderos conocen la forma eficiente y sostenible de utilización del agua en sus predios. Se ha determinado la mejor estrategia de suplementación hídrica en citrus.
TARGET ID (TARGET AREAS; BENEFICIARIES)	Productores agropecuarios
IMPLEMENTERS	INIA ; MGAP, OPP, UDELAR, UTEC
TIMELINE	2025
COSTS & FINANCIAL RESOURCES	INIA: USD 2.4 million ANII: USD 19 thousand

SECTOR	SECTOR AGROPECUARIO - SISTEMAS DE PRODUCCIÓN
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OVERALL OBJECTIVE	Selección y evaluación productiva de cultivos de cobertura para sistemas agrícolas
ACTIVITIES	Investigación para la inclusión de cultivos de servicio en rotaciones agrícolas para asegurar la protección y la conservación del suelo frente a eventos climáticos extremos. Estos cultivos son sembrados para proveer servicios ecosistémicos, por ejemplo: la protección contra la erosión (cultivos de cobertura), la incorporación de materia orgánica (abonos verdes), la retención de nutrientes (cultivos trampa), la incorporación de nitrógeno a través de la fijación biológica (cultivos de leguminosas) o la descompactación del suelo (cultivos de Brassicas).
OUTCOMES	Se ha determinado la capacidad de aporte de nitrógeno de los cultivos de servicios y su relación con la demanda de nitrógeno de los cultivos de cosecha.
TARGET ID (TARGET AREAS; BENEFICIARIES)	Sistemas de producción agrícolas, agrícola-ganaderos, agrícola-lecheros
IMPLEMENTERS	INIA ; Facultad de Agronomía (UDELAR)
TIMELINE	2025
COSTS & FINANCIAL RESOURCES	El financiamiento para esta medida no está aprobado. El costo estimado es de US\$ 100.000.

SECTOR	SECTOR AGROPECUARIO - SISTEMAS DE PRODUCCIÓN
OVERALL OBJECTIVE	Investigación sobre sistemas de cría vacuna en campo natural para aumentar y estabilizar la producción
ACTIVITIES	Diseño, ejecución y análisis de experimentos de largo plazo acerca de los efectos de los cambios en la intensidad del pastoreo y del grupo genético de vacas de cría sobre la producción por unidad de superficie, los servicios ecosistémicos del campo natural y la adaptación a la variabilidad climática de los sistemas ganaderos familiares de cría vacuna en campo natural. El proyecto vincula la investigación analítica, la modelación y la coinnovación en pastizales de Uruguay, Argentina y Brasil.
OUTCOMES	A nivel experimental: <ul style="list-style-type: none"> - Aumentó un 30% la producción de carne por unidad de superficie y un 50% el resultado económico. -Se redujo un 30% la intensidad de emisiones de gases de efecto invernadero. -Se redujeron un 50% las pérdidas por eventos climáticos. -Se redujo un 40% la tasa de desaparición de especies con mejora de la biodiversidad y sustentabilidad.

TARGET ID (TARGET AREAS; BENEFICIARIES)	Productores ganaderos criadores
IMPLEMENTERS	Facultad de Agronomía (UDELAR) ; INIA, MGAP, INTA, EMBRAPA
TIMELINE	2025
COSTS & FINANCIAL RESOURCES	FONTAGRO e Innovagro (ANII) : USD 300 thousand

SECTOR	SECTOR AGROPECUARIO - SISTEMAS DE PRODUCCIÓN
OVERALL OBJECTIVE	Investigación para el desarrollo de sistemas de producción de leche competitivos, sostenibles y simples
ACTIVITIES	Desarrollo de investigación en sistemas de producción lecheros con carga animal adecuada y consumo directo de pasturas perennes para reducir los costos y aumentar la estabilidad. Diseño de sistemas de alta producción y cosecha de forraje por hectárea (10 toneladas MS/ha), a través de alta carga (2 VM/ha), una rotación sin limitantes de nutrientes y un manejo ajustado del pastoreo y la alimentación.
OUTCOMES	A nivel experimental, se producen 10 toneladas de MS/ha y 1500 kg de sólidos/ha utilizando rotaciones de 4 años de pradera y 1 año de cultivo anual.
TARGET ID (TARGET AREAS; BENEFICIARIES)	Productores lecheros
IMPLEMENTERS	Red Tecnológica Sectorial (RTS): CONAPROLE, UDELAR, INALE, INIA, LATU, Latitud-Fundación LATU, Consorcio Regional de Innovación Lechero del Litoral (CRI) y ANII
TIMELINE	2025
COSTS & FINANCIAL RESOURCES	INIA : USD 56 thousand FONTAGRO: USD 400 thousand

SECTOR	SECTOR AGROPECUARIO - SISTEMAS DE PRODUCCIÓN
OVERALL OBJECTIVE	Evaluación de resistencia a parásitos gastrointestinales en programas de mejoramiento ovino
ACTIVITIES	Incorporación de evaluación de comportamiento ovino ante parásitos gastrointestinales en establecimientos comerciales en colaboración con INIA, buscando reducir el uso de antihelmínticos y controlar el desarrollo de resistencia a los componentes activos de los productos disponibles.
OUTCOMES	A definir
TARGET ID (TARGET AREAS; BENEFICIARIES)	Productores ovinos
IMPLEMENTERS	SUL; INIA y establecimientos comerciales
TIMELINE	2025
COSTS & FINANCIAL RESOURCES	n/a

SECTOR	SECTOR AGROPECUARIO - SISTEMAS DE PRODUCCIÓN
OVERALL OBJECTIVE	Investigación y validación de tecnología de alimentación, mejoramiento genético, reproducción, salud y bienestar animal de ovinos
ACTIVITIES	Desarrollo y difusión de recomendaciones para la mejora de la nutrición de las diferentes categorías ovinas. Desarrollo de estrategias para sistemas de producción intensiva de carne y lana y utilización de pasturas y campo natural.
OUTCOMES	A definir
TARGET ID (TARGET AREAS; BENEFICIARIES)	Productores ovinos

IMPLEMENTERS	SUL
TIMELINE	2025
COSTS & FINANCIAL RESOURCES	n/a

SECTOR	SECTOR AGROPECUARIO - SISTEMAS DE PRODUCCIÓN
OVERALL OBJECTIVE	Ajuste, difusión y aplicación de sistemas de producción integrada para uvas de vino
ACTIVITIES	Adopción a escala nacional de sistemas de producción integrada que permitan la certificación de la producción de uvas de vino de acuerdo con las exigencias del mercado internacional del vino. Los sistemas de producción integrada apuntan a generar un menor impacto ambiental y a reducir el número de aplicaciones de productos fitosanitarios, aumentar la sostenibilidad de la producción y bajar los costos para obtener mejores resultados económicos. Estos sistemas se apoyan en el registro y georreferenciamiento de viñedos para uvas de vino, que incluye información de manejo de suelos, prácticas culturales, infraestructura, monitoreo de rendimiento e incidencia de enfermedades
OUTCOMES	Se ha implementado un sistema de certificación nacional de manejo integrado de viñedos para vino.
TARGET ID (TARGET AREAS; BENEFICIARIES)	Cadena vitivinícola
IMPLEMENTERS	INAVI; FUCREA, DIGEGRA, INIA, VICA
TIMELINE	2025
COSTS & FINANCIAL RESOURCES	n/a

SECTOR	SECTOR AGROPECUARIO - SISTEMAS DE PRODUCCIÓN
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OVERALL OBJECTIVE	Diseño e implementación de un sistema de extensión y transferencia de tecnología agropecuaria
ACTIVITIES	Diseño e implementación de un sistema de extensión y transferencia basado en la articulación interinstitucional y la asociación con organizaciones de productores rurales como Agentes Territoriales de Desarrollo Rural, con el objetivo de mejorar los niveles de productividad y la sostenibilidad ambiental y económica de las unidades de producción.
OUTCOMES	5.000 productores son beneficiarios de programas de asistencia técnica, principalmente de los rubros ganadería, lechería y horticultura
TARGET ID (TARGET AREAS; BENEFICIARIES)	Productores familiares Pequeños productores no familiares Productores medianos
IMPLEMENTERS	OPYPA y DGDR; UD y DIGEGRA, INIA, INALE, IPA, INC y SUL
TIMELINE	2025
COSTS & FINANCIAL RESOURCES	MGAP, INIA, INALE, IPA e INC : USD 1.2 million

SECTOR	SECTOR AGROPECUARIO - SISTEMAS DE PRODUCCIÓN
OVERALL OBJECTIVE	Fortalecimiento del componente de asistencia técnica en los programas de financiamiento público
ACTIVITIES	Fortalecimiento del componente de asistencia técnica a los productores beneficiarios de los programas de financiamiento público, mediante la convocatoria a organizaciones de productores a postular como Agentes Territoriales de Desarrollo Rural encargados de articular la asistencia técnica para la elaboración y seguimiento de proyectos y las capacitaciones a nivel local. El fortalecimiento de la asistencia técnica apunta a promover la innovación, el uso sostenible de los recursos naturales y la adaptación al cambio climático de los productores agropecuarios.
OUTCOMES	50 organizaciones de productores han recibido asistencia técnica a través del Proyecto DACC Adicional a 2022. 40 organizaciones de productores han recibido asistencia técnica a través del PDPR 2 a 2023.
TARGET ID (TARGET AREAS; BENEFICIARIES)	Productores familiares Pequeños productores no familiares Productores medianos

IMPLEMENTERS	DGDR; UGP, UD, Mesas de Desarrollo Rural, OPYPA, IPA, INC, INIA
TIMELINE	2025
COSTS & FINANCIAL RESOURCES	Proyecto DACC Adicional (Banco Mundial) : USD 4.9 million PDPR 2 (BID) : USD 8.6 million

SECTOR	SECTOR AGROPECUARIO - SISTEMAS DE PRODUCCIÓN
OVERALL OBJECTIVE	Implementación del enfoque de coinnovación para promover estrategias de intensificación ecológica en sistemas ganaderos
ACTIVITIES	El enfoque de coinnovación busca promover procesos de aprendizaje y generar propuestas tecnológicas con una metodología interdisciplinaria y participativa que analiza las dimensiones económica, ambiental y social, en red con los actores locales. Es un proceso sistémico de caracterización, diagnóstico, rediseño, implementación y evaluación en el que participan productores y técnicos extensionistas.
OUTCOMES	El enfoque de coinnovación se aplica en 60 predios ganaderos familiares y no familiares (pequeños y medianos) en todo el país
TARGET ID (TARGET AREAS; BENEFICIARIES)	Productores ganaderos familiares, no familiares y medianos
IMPLEMENTERS	INIA; MGAP, Proyecto de producción ganadera climáticamente inteligente y restauración del suelo en pastizales uruguayos del GEF (MVOTMA, MGAP y FAO)
TIMELINE	2025
COSTS & FINANCIAL RESOURCES	INIA : USD 111 thousand Proyecto de producción ganadera climáticamente inteligente (GEF) : USD 620 thousand

SECTOR	SECTOR AGROPECUARIO - SISTEMAS DE PRODUCCIÓN
OVERALL OBJECTIVE	Transferencia del sistema de gestión del pastoreo en sistemas lecheros

ACTIVITIES	Transferencia a los productores y sus equipos de trabajo de un sistema de gestión del pastoreo 3R desarrollado por INIA, que incorpora una recorrida semanal, la rotación del pastoreo y el control de remanente de forraje para optimizar la cosecha de pasto de calidad mediante el aumento en un 30% de la utilización de forraje por hectárea. Desarrollo de software de soporte a la toma de decisiones productivas.
OUTCOMES	El 30% de los tambos han adoptado el sistema 3R. Se ha obtenido financiamiento para el desarrollo de software de soporte a la toma de decisiones.
TARGET ID (TARGET AREAS; BENEFICIARIES)	Productores lecheros Productores ganaderos
IMPLEMENTERS	INIA y FUCREA ; CONAPROLE
TIMELINE	2025
COSTS & FINANCIAL RESOURCES	FPTA (INIA) : USD 208 thousand

SECTOR	SECTOR AGROPECUARIO - SISTEMAS DE PRODUCCIÓN
OVERALL OBJECTIVE	Desarrollo y actualización de herramientas para el monitoreo de información agroclimática y ambiental
ACTIVITIES	Desarrollo y actualización de herramientas para el monitoreo de información agroclimática y ambiental con escala regional para apoyar la toma de decisiones para la prevención y el manejo de riesgos asociados al clima a nivel nacional. Las herramientas de información desarrolladas por INIA disponibles actualmente incluyen la previsión de condiciones climáticas adversas para corderos, previsión de heladas, pronóstico DON en trigo, alerta de Roya Asiática, CuantAgua, previsión del estado fenológico en cultivos de verano, SIMERPA y Sigras. Elaboración y difusión de productos de información agroclimática.
OUTCOMES	Se han desarrollado, implementado y actualizado sistemas de seguimiento y previsión del estado de la vegetación (cultivos y pasturas), estimación de agua en el suelo, escurrimiento superficial de agua e índice de bienestar hídrico. Se encuentra disponible (a 2020) un sistema en línea de alerta e información sobre condiciones de riesgo de estrés calórico en bovinos de carne y leche, incluyendo pronósticos georreferenciados y recomendaciones técnicas. Se han mejorado y actualizado de manera permanente las herramientas de información existente.

TARGET ID (TARGET AREAS; BENEFICIARIES)	Productores agropecuarios MGAP
IMPLEMENTERS	INIA ; INUMET, MGAP, IRI, UDELAR, SUL, empresas privadas, MVOTMA
TIMELINE	2025
COSTS & FINANCIAL RESOURCES	INIA : USD 446 thousand

SECTOR	SECTOR AGROPECUARIO - SISTEMAS DE PRODUCCIÓN
OVERALL OBJECTIVE	Desarrollo e implementación de una herramienta para la gestión remota de los predios agropecuarios
ACTIVITIES	Evaluación y adaptación de la aplicación de la herramienta AgTech para la gestión remota de los predios agropecuarios.
OUTCOMES	Se aplica AgTech para la gestión remota en unidades productivas privadas y de INIA.
TARGET ID (TARGET AREAS; BENEFICIARIES)	Productores agropecuarios MGAP
IMPLEMENTERS	INIA ; Facultad de Ingeniería (UDELAR), Centro de TIC de ANII (ICT4V), Uruguay XXI, empresas privadas
TIMELINE	2025
COSTS & FINANCIAL RESOURCES	INIA, BID y CONAE de Argentina : USD 34.3 thousand Total cost : USD 500.000 para 10 años

SECTOR	SECTOR AGROPECUARIO - SISTEMAS DE PRODUCCIÓN
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OVERALL OBJECTIVE	Diseño e implementación del Sistema de Información sobre Sequías para el Sur de Sudamérica (SISSA)
ACTIVITIES	Diseño e implementación del Sistema de Información sobre Sequías para el Sur de Sudamérica (SISSA), con el fin de aportar información útil para la toma de decisiones de instituciones públicas y privadas, tendientes a mitigar los daños, aumentar la resiliencia y reducir la vulnerabilidad frente a la sequía. El proyecto es implementado a nivel regional por el Centro Regional del Clima para el Sur de América del Sur (CRC-SAS) y apunta a desarrollar índices y productos que permitan monitorear el inicio, la intensidad, la extensión espacial y la finalización de las sequías y a diseñar herramientas para estimar los impactos potenciales sobre diferentes sectores con base en las condiciones de sequía observadas o pronosticadas.
OUTCOMES	Se ha desarrollado un índice de días consecutivos secos. Se han realizado talleres locales sobre la utilización de pronósticos meteorológicos para la toma de decisiones productivas.
TARGET ID (TARGET AREAS; BENEFICIARIES)	Institucionalidad agropecuaria ampliada SNRCC
IMPLEMENTERS	INUMET ; Centro Regional del Clima para el Sur de América del Sur (CRC-SAS)
TIMELINE	2025
COSTS & FINANCIAL RESOURCES	BID : USD 500 thousand Programa Euroclima+ (Unión Europea) : USD 1.4 million

SECTOR	SECTOR AGROPECUARIO - SISTEMAS DE PRODUCCIÓN
OVERALL OBJECTIVE	Desarrollo de un sistema de alerta y monitoreo de meteorología marina y costera
ACTIVITIES	Estudio del acoplamiento de modelos atmosféricos y marinos para desarrollar un sistema de alerta y monitoreo de fenómenos marinos. Mejora del pronóstico de olas, mareas, viento y brisa de mar, entre otras variables, mediante la instalación de estaciones meteorológicas marinas y costeras. Ambas acciones buscan apoyar la toma de decisiones productivas en la pesca artesanal, la vitivinicultura y la horticultura.
OUTCOMES	Se han desarrollado y calibrado modelos para operativizar el pronóstico marino. Se han definido alertas marinas ajustadas a escalas espacio-temporales y se ha diseñado el mecanismo de transmisión de esas alertas.

TARGET ID (TARGET AREAS; BENEFICIARIES)	Pescadores artesanales Productores vitivinícolas Productores hortícolas
IMPLEMENTERS	INUMET ; ANP, ANCAP, SOHMA, Armada Nacional, SINAE, intendencias departamentales, consejos locales de pesca
TIMELINE	2025
COSTS & FINANCIAL RESOURCES	n/a

SECTOR	SECTOR AGROPECUARIO - SISTEMAS DE PRODUCCIÓN
OVERALL OBJECTIVE	Promoción de la contratación de seguros para la cobertura de riesgos climáticos en el sector agropecuario, con énfasis en los pequeños y medianos productores hortifrutícolas y los ganaderos familiares
ACTIVITIES	Otorgamiento de subsidios a la prima de seguros contra granizo, vientos y exceso hídrico, entre otros, para productores hortifrutícolas pequeños y medianos de forma diferencial según su tamaño productivo (entre 35% y 90%) y seguros para sequía en ganadería de cría (entre 50 y 60%). Evaluación de la conveniencia de otorgar subsidios a la prima de seguros u otras formas de apoyo que promuevan la cobertura de riesgos de déficit y de exceso hídrico en cultivos. Generalmente estos seguros tienen un mayor costo por la magnitud de las pérdidas potenciales.
OUTCOMES	Se ha ampliado la cobertura de seguros (80% en fruticultores y horticultores protegidos, 40% en hort Se ha revisado el seguro de exceso hídrico y ha sido adquirido para el 25% de la superficie ganadera.
TARGET ID (TARGET AREAS; BENEFICIARIES)	Productores hortifrutícolas pequeños y medianos Productores ganaderos criadores
IMPLEMENTERS	OPYPA y DIGEGRA ; JUNAGRA, BSE, MEF
TIMELINE	2025
COSTS & FINANCIAL RESOURCES	FFG : USD 40 million Proyecto DACC Adicional (Banco Mundial) : a definir

SECTOR	SECTOR AGROPECUARIO - SISTEMAS DE PRODUCCIÓN
OVERALL OBJECTIVE	Implementación de incentivos económicos para la inversión en infraestructura productiva para la adaptación
ACTIVITIES	Promoción de la incorporación de infraestructura productiva que contribuya a la adaptación de los sistemas de producción agropecuarios a través del otorgamiento de beneficios fiscales a inversiones en adaptación o mitigación y tecnologías limpias, en el marco de la Ley de Inversiones (n.º 16.906).
OUTCOMES	Se han realizado actividades de difusión del incentivo económico para productores agropecuarios
TARGET ID (TARGET AREAS; BENEFICIARIES)	Empresas agropecuarias que tributan IRAE
IMPLEMENTERS	OPYPA ; COMAP (MEF, MGAP, MIEM, MINTUR, MTSS y OPP)
TIMELINE	2025
COSTS & FINANCIAL RESOURCES	n/a

SECTOR	SECTOR AGROPECUARIO - SISTEMAS DE PRODUCCIÓN
OVERALL OBJECTIVE	Evaluación y promoción del riego multipredial con consideraciones sociales y ambientales
ACTIVITIES	Evaluación y promoción del riego multipredial (sistemas de riego u otras asociaciones) con consideraciones sociales y ambientales, a través de la evaluación de los proyectos de riego, el asesoramiento, el apoyo financiero y el seguimiento en las etapas de implementación. Incorporación de las recomendaciones que surgen de la Evaluación Ambiental Estratégica a nivel de cuenca y de la Evaluación de Impacto Ambiental de los proyectos, cuando corresponda. El apoyo financiero para inversiones y la asistencia técnica se canalizan a través de la convocatoria abierta a Estrategias Asociativas de Agua para la Producción (EAAP) dirigida a productores agropecuarios pequeños y medianos, y otros instrumentos de apoyo.
OUTCOMES	A 2019, se ha dado apoyo a la evaluación del proyecto de riego multipredial que agrupa a 74 productores pequeños y medianos vinculados a la Sociedad de Fomento Rural de Colonia Valdense (SOFOVAL), la Cooperativa Ruralista Agraria del Departamento de

	Colonia (CRADECO), la Sociedad de Fomento Rural de Colonia Suiza y COLAVECO. A 2025, se ha apoyado la evaluación y la implementación de otros proyectos a través de la convocatoria abierta a EAAP.
TARGET ID (TARGET AREAS; BENEFICIARIES)	Productores agropecuarios pequeños y medianos
IMPLEMENTERS	DGRN ; ANDE, BROU, UTE, cooperativas de productores, MVOTMA
TIMELINE	2025
COSTS & FINANCIAL RESOURCES	Proyecto DACC Adicional (Banco Mundial) : USD 6.5 million Proyecto DACC Adicional (BM) y EAAP : USD 4 million

SECTOR	SECTOR AGROPECUARIO - SISTEMAS DE PRODUCCIÓN
OVERALL OBJECTIVE	Promoción del uso de energía solar por productores hortifrutícolas
ACTIVITIES	Promoción del uso de energía solar a través del otorgamiento de subsidios y de garantías a créditos para la compra de paneles solares fotovoltaicos para grupos de productores hortifrutícolas. Esta medida apunta a reducir los costos de producción asociados a la energía utilizada en sistemas de riego y cámaras de frío, además de tener cobeneficios de mitigación del cambio climático.
OUTCOMES	Se realizó una convocatoria a planes de negocio de instalación de paneles solares para acceder a garantías de crédito o subsidios según escala de productores a 2019.
TARGET ID (TARGET AREAS; BENEFICIARIES)	Productores hortifrutícolas pequeños y medianos
IMPLEMENTERS	DIGEGRA ; MIEM
TIMELINE	2025
COSTS & FINANCIAL RESOURCES	FFG : A definir

SECTOR	SECTOR AGROPECUARIO - SISTEMAS DE PRODUCCIÓN
OVERALL OBJECTIVE	Evaluación de invernáculos para producción hortícola y sistemas de conducción de frutales que incorpore modelos climáticos
ACTIVITIES	Evaluación de invernáculos y mallas antigranizo para cultivos protegidos y evaluación de sistemas de conducción y poda para frutales que incorpore datos climáticos (temperatura, humedad relativa, radiación).
OUTCOMES	A definir
TARGET ID (TARGET AREAS; BENEFICIARIES)	Productores hortifrutícolas pequeños y medianos
IMPLEMENTERS	INIA ; DIGEGRA, AFRUPI
TIMELINE	2025
COSTS & FINANCIAL RESOURCES	INIA : USD 650 thousand AFRUPI : USD 220 thousand

SECTOR	SECTOR AGROPECUARIO – ECOSISTEMAS Y RECURSOS NATURALES
OVERALL OBJECTIVE	Promoción de la adopción de Buenas Prácticas Agrícolas y el manejo integrado de plagas, enfermedades y malezas
ACTIVITIES	Promoción de la adopción de Buenas Prácticas Agrícolas y el manejo integrado de plagas, enfermedades y malezas para reducir el uso de agroquímicos y estimular la conservación de la calidad del suelo y el agua. Incorporación de la perspectiva de género en la generación y difusión de las buenas prácticas agrícolas.
OUTCOMES	A 2021, al menos una política sectorial de buenas prácticas agrícolas incorpora la perspectiva de género en forma transversal. A 2025, se han realizado actividades de difusión para promover la adopción de BPA para productores agrícolas.
TARGET ID (TARGET AREAS; BENEFICIARIES)	Productores agrícolas

IMPLEMENTERS	DGSA y DGDR ; DIGEGRA, organizaciones de productores, CAMAGRO
TIMELINE	2025
COSTS & FINANCIAL RESOURCES	DIGEGRA : USD 250 thousand

SECTOR	SECTOR AGROPECUARIO – ECOSISTEMAS Y RECURSOS NATURALES
OVERALL OBJECTIVE	Desarrollo de Buenas Prácticas Ganaderas
ACTIVITIES	Desarrollo de buenas prácticas que fomenten la producción ganadera contemplando aspectos de inocuidad, bienestar animal y sanidad e incluyendo pautas para el transporte terrestre y marino y para la prevención de la resistencia antimicrobiana.
OUTCOMES	Se ha conformado un grupo de trabajo.
TARGET ID (TARGET AREAS; BENEFICIARIES)	Cadena cárnica
IMPLEMENTERS	DGSG ; COTRYBA, Facultad de Veterinaria (UDELAR), Sociedad de Medicina Veterinaria del Uruguay, IPA, INIA, INAC, Academia Nacional de Veterinaria
TIMELINE	2025
COSTS & FINANCIAL RESOURCES	

SECTOR	SECTOR AGROPECUARIO – ECOSISTEMAS Y RECURSOS NATURALES
OVERALL OBJECTIVE	Manejo sostenible de plantaciones forestales

ACTIVITIES	Promoción de la adopción de buenas prácticas en las plantaciones forestales y planificación estratégica para la prevención de incendios y riesgos vinculados a plagas y enfermedades, en el marco de la Estrategia Nacional de Manejo Forestal para la Salud y Vitalidad de los Bosques Plantados (2010-2030).
OUTCOMES	Se ha elaborado una estrategia de protección contra incendios forestales.
TARGET ID (TARGET AREAS; BENEFICIARIES)	Productores forestales
IMPLEMENTERS	DGF ; CECOPE, SPF, SINAE, Dirección Nacional de Bomberos del Ministerio del Interior, Ministerio de Defensa Nacional, DGSA, INIA, intendencias departamentales, MVOTMA
TIMELINE	2025
COSTS & FINANCIAL RESOURCES	

SECTOR	SECTOR AGROPECUARIO – ECOSISTEMAS Y RECURSOS NATURALES
OVERALL OBJECTIVE	Manejo regional de plagas en frutales de hoja caduca
ACTIVITIES	Gestión de un programa de control de la mosca de la fruta mediante confusión sexual, que incluye el subsidio a la compra de cebos con feromonas y el seguimiento técnico a los productores. El programa promueve la reducción de las aplicaciones de agroquímicos para el control de plagas.
OUTCOMES	Se ha promovido el uso de agentes de control biológico.
TARGET ID (TARGET AREAS; BENEFICIARIES)	Productores frutícolas de la región sur
IMPLEMENTERS	DIGEGRA ; JUNAGRA, DGSA, INIA, Facultad de Agronomía (UDELAR)
TIMELINE	2025

COSTS & FINANCIAL RESOURCES	FFG : USD 9.5 million
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SECTOR	SECTOR AGROPECUARIO – ECOSISTEMAS Y RECURSOS NATURALES
OVERALL OBJECTIVE	Fortalecimiento de la política de control, seguimiento y fiscalización del uso y manejo de suelos agrícolas y de la gestión de nutrientes en la lechería
ACTIVITIES	Incorporación de mejoras en el control, seguimiento y fiscalización de los Planes de Uso y Manejo de Suelos y los Planes de Lechería Sostenible como herramientas de gestión para contribuir a la conservación del suelo y evitar la tendencia a la degradación de los suelos agrícolas y minimizar los impactos ambientales negativos de la producción lechera. Apoyo financiero a la incorporación de sistemas de gestión de nutrientes en la lechería a través de convocatorias a proyectos.
OUTCOMES	El 95% del área agrícola comprendida en la normativa cuenta con Planes de Uso y Manejo de Suelos. A través de la reducción de la erosión y la conservación de la materia orgánica en tierras agrícolas, se han mejorado la productividad y la capacidad de almacenamiento de agua y se ha reducido el riesgo de erosión ante eventos extremos de precipitación.
TARGET ID (TARGET AREAS; BENEFICIARIES)	Población nacional
IMPLEMENTERS	DGRN ; DGDR, INALE, DINAMA, INIA, SNAACC, asociaciones de productores, Facultad de Agronomía (UDELAR), CONAPROLE, UTEC
TIMELINE	2025
COSTS & FINANCIAL RESOURCES	Proyecto DACC Adicional (Banco Mundial) : USD 6.5 million

SECTOR	SECTOR AGROPECUARIO – ECOSISTEMAS Y RECURSOS NATURALES
OVERALL OBJECTIVE	Elaboración e implementación de una estrategia nacional para el uso sostenible del campo natural
ACTIVITIES	Elaboración e implementación de una estrategia nacional que contribuya a diseñar normas de uso del campo natural para la conservación del recurso y de los servicios ambientales que este provee, desarrollar actividades de extensión y capacitación para el

	uso sostenible del campo natural, consolidar una plataforma de investigación y un observatorio de campo natural y desarrollar acciones para valorizar los productos de campo natural y sus servicios ambientales.
OUTCOMES	A 2019, la Mesa de Ganadería sobre Campo Natural ha elaborado los lineamientos para el Plan Estratégico de Ganadería sobre Campo Natural. A 2020, el MGAP ha elaborado el Plan Estratégico de Ganadería sobre Campo Natural.
TARGET ID (TARGET AREAS; BENEFICIARIES)	Productores ganaderos
IMPLEMENTERS	DGRN ; Mesa de Ganadería sobre Campo Natural (MGCN): MGAP, IPA, INIA, facultades de Agronomía y Ciencias de UDELAR, SUL. MGCN ampliada: CNFR, CAF, ARU, Grupos CREA, Federación Rural, SNAP, IICA, Alianza del Pastizal, INAC, AUGAP.
TIMELINE	2025
COSTS & FINANCIAL RESOURCES	Proyecto DACC Adicional (Banco Mundial) : USD 6.5 million

SECTOR	SECTOR AGROPECUARIO – ECOSISTEMAS Y RECURSOS NATURALES
OVERALL OBJECTIVE	Gestión sostenible del bosque nativo, otras formaciones boscosas nativas y árboles nativos fuera de los bosques
ACTIVITIES	Promoción del manejo y la integración de los sistemas productivos con el bosque nativo a través de incentivos económicos y buenas prácticas a nivel predial, aumentando los beneficios para la producción agropecuaria y la conservación del bosque nativo. Promoción de la valorización del bosque nativo en términos productivos y de provisión de servicios ecosistémicos.
OUTCOMES	A 2020, se ha diseñado un mecanismo financiero de incentivos a través del pago por resultados asociados al secuestro de carbono en bosque nativo a productores agropecuarios. Se ha elaborado un manual con recomendaciones de buenas prácticas de manejo para la integración del bosque nativo con diferentes sistemas productivos.
TARGET ID (TARGET AREAS; BENEFICIARIES)	Tenedores de bosque nativo
IMPLEMENTERS	Proyecto REDD+ (MGAP, MVOTMA)
TIMELINE	2025

COSTS & FINANCIAL RESOURCES	Proyecto REDD+ (Banco Mundial): USD 800 thousand
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SECTOR	SECTOR AGROPECUARIO – ECOSISTEMAS Y RECURSOS NATURALES
OVERALL OBJECTIVE	Fortalecimiento del control de la captura pesquera incidental y de la pesca ilegal
ACTIVITIES	Desarrollo de buenas prácticas y medidas de control de la captura incidental para contribuir a la sostenibilidad de los recursos pesqueros, incluyendo la implementación de líneas espantapájaros y la experimentación de sistemas para ahuyentar mamíferos marinos de las redes de pesca. Ampliación de las acciones de control de la pesca ilegal en el Puerto de Montevideo.
OUTCOMES	A definir
TARGET ID (TARGET AREAS; BENEFICIARIES)	Población nacional
IMPLEMENTERS	DINARA ; Dirección de Recursos Antárticos de Australia
TIMELINE	2025
COSTS & FINANCIAL RESOURCES	DINARA: USD 270 thousand

SECTOR	SECTOR AGROPECUARIO – MEDIOS DE VIDA
OVERALL OBJECTIVE	Fortalecimiento de las organizaciones de productores agropecuarios
ACTIVITIES	Realización de convocatorias a Propuestas de Fortalecimiento Organizacional (PFO) para la promoción del desarrollo de capacidades asociativas y la participación de organizaciones y colectivos de la agricultura familiar, la pesca artesanal y las poblaciones rurales en los procesos de desarrollo rural en los territorios.
OUTCOMES	Se ha apoyado a al menos 37 propuestas de fortalecimiento organizacional por año.

TARGET ID (TARGET AREAS; BENEFICIARIES)	Productores familiares Pescadores artesanales
IMPLEMENTERS	DGDR
TIMELINE	2025
COSTS & FINANCIAL RESOURCES	FDR: USD 2.2 million Proyecto DACC Adicional (Banco Mundial) : USD 375 thousand

SECTOR	SECTOR AGROPECUARIO – MEDIOS DE VIDA
OVERALL OBJECTIVE	Implementación de políticas afirmativas focalizadas en mujeres y jóvenes rurales
ACTIVITIES	Diseño e implementación de convocatorias a iniciativas lideradas por mujeres y jóvenes rurales, que ofrezcan apoyo económico y asistencia técnica para la implementación de los proyectos.
OUTCOMES	Se han realizado tres convocatorias que benefician a, al menos, 300 mujeres rurales y 200 jóvenes rurales.
TARGET ID (TARGET AREAS; BENEFICIARIES)	Mujeres rurales Jóvenes rurales
IMPLEMENTERS	DGDR ; UGP, MIDES
TIMELINE	2025
COSTS & FINANCIAL RESOURCES	PDPR 2 (BID) : USD 200 thousand FDR: USD 318 thousand

SECTOR	SECTOR AGROPECUARIO – MEDIOS DE VIDA
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OVERALL OBJECTIVE	Fortalecimiento del funcionamiento de los Consejos Locales de Pesca
ACTIVITIES	Apoyo a la pesca artesanal como actividad desarrollada por un segmento de población vulnerable, mediante los Consejos Locales de Pesca y la coordinación interinstitucional.
OUTCOMES	Se han fortalecido los Consejos Locales de Pesca.
TARGET ID (TARGET AREAS; BENEFICIARIES)	Pescadores artesanales
IMPLEMENTERS	DINARA ; Consejos Locales de Pesca (pescadores artesanales, DINARA, Prefectura Nacional Naval, intendencias departamentales y municipios)
TIMELINE	2025
COSTS & FINANCIAL RESOURCES	DINARA : USD 100 thousand

SECTOR	SECTOR AGROPECUARIO – MEDIOS DE VIDA
OVERALL OBJECTIVE	Desarrollo de programas de capacitación en el sector agropecuario
ACTIVITIES	Desarrollo de programas bianuales de capacitación en convenio con el INEFOP, en función de las demandas de las organizaciones locales recogidas a través de las Mesas de Desarrollo Rural.
OUTCOMES	Se han diseñado tres programas bianuales de capacitación que cubren las demandas de las organizaciones locales.
TARGET ID (TARGET AREAS; BENEFICIARIES)	Productores agropecuarios Asalariados rurales
IMPLEMENTERS	UD ; DGDR, INEFOP
TIMELINE	2025

COSTS & FINANCIAL RESOURCES	La medida se financia con la contribución de INEFOP (80%) y MGAP (20%).
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SECTOR	SECTOR AGROPECUARIO – MEDIOS DE VIDA
OVERALL OBJECTIVE	Implementación de programas de extensión y capacitación para sistemas de producción ganaderos
ACTIVITIES	Implementación de programas de capacitación para difundir y fomentar la adopción de prácticas y tecnologías que promuevan un desarrollo sostenible e innovador de la producción ganadera. Colaboración con instituciones departamentales y nacionales para desarrollar herramientas de gestión y productos de información para la toma de decisiones productivas.
OUTCOMES	15.000 participaciones por año en actividades de extensión y capacitación a productores y asalariados. Se cuenta con un registro de participaciones en actividades de extensión y capacitación desagregado por género.
TARGET ID (TARGET AREAS; BENEFICIARIES)	Productores agropecuarios Asalariados rurales
IMPLEMENTERS	IPA ; INIA, DGDR, DGRN, UD, Mesas de Desarrollo Rural, INC, Facultad de Veterinaria (UDELAR), INEFOP, MIDES, SUL
TIMELINE	2025
COSTS & FINANCIAL RESOURCES	IPA: USD 10.5 million INEFOP: USD 335 thousand

SECTOR	SECTOR AGROPECUARIO – MEDIOS DE VIDA
OVERALL OBJECTIVE	Fortalecimiento de las capacidades de gestión de los productores lecheros familiares remitentes
ACTIVITIES	Implementación de un proyecto de capacitación en herramientas de gestión empresarial y de asistencia técnica, en convenio con el INEFOP, con el objetivo de disminuir la brecha tecnológica entre los productores lecheros remitentes.
OUTCOMES	A definir

TARGET ID (TARGET AREAS; BENEFICIARIES)	Productores lecheros familiares que remiten menos de 450 mil litros/año
IMPLEMENTERS	INALE ; CONAPROLE, Calcar, INEFOP, APLP, Claldy y Sofrils
TIMELINE	2025
COSTS & FINANCIAL RESOURCES	La medida se financia con la contribución de INEFOP (90%) e INALE (10%). En Paysandú es financiada a través del proyecto Intendencia de Paysandú, ANDE y OPP.

SECTOR	SECTOR AGROPECUARIO – MEDIOS DE VIDA
OVERALL OBJECTIVE	Aplicación de TIC para modernizar y mejorar el acceso a información y tecnologías
ACTIVITIES	Desarrollo de una plataforma basada en técnicas de inteligencia artificial y machine learning que permita un acceso fácil y un uso efectivo de la información disponible por parte de los productores.
OUTCOMES	Está en marcha el piloto de la plataforma de acceso a información generada por INIA para productores ganaderos familiares, mediante el procesamiento de lenguaje natural disponible.
TARGET ID (TARGET AREAS; BENEFICIARIES)	Productores agropecuarios Institucionalidad agropecuaria ampliada Otros actores vinculados
IMPLEMENTERS	INIA ; FING-UDELAR, Centro de TIC de ANII (ICT4V), Uruguay XXI, empresas privadas
TIMELINE	2025
COSTS & FINANCIAL RESOURCES	INIA: USD 1.1 million

SECTOR	SECTOR AGROPECUARIO – MEDIOS DE VIDA
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OVERALL OBJECTIVE	Apoyo financiero no reembolsable a través de convocatorias a proyectos de inversión predial
ACTIVITIES	Convocatorias a proyectos de inversión predial destinados a mejorar la inserción de los productores familiares y no familiares (pequeños y medianos) en las cadenas de valor, la sostenibilidad y la adaptación de los sistemas de producción.
OUTCOMES	A 2022, se ha brindado apoyo financiero para inversiones prediales a 2.400 productores (480 mujeres) a través del Proyecto DACC Adicional, además de los 4.600 productores (920 mujeres) que recibieron apoyo inicialmente a través del Proyecto DACC. A 2023, se ha brindado apoyo financiero para inversiones prediales a 2.700 productores (220 mujeres) a través del PDPR 2.
TARGET ID (TARGET AREAS; BENEFICIARIES)	Productores familiares Pequeños productores no familiares Productores medianos
IMPLEMENTERS	DGDR ; UGP, UD, Mesas de Desarrollo Rural
TIMELINE	2025
COSTS & FINANCIAL RESOURCES	Proyecto DACC Adicional (Banco Mundial): USD 16.2 million PDPR 2 (BID) : USD 11 million

SECTOR	SECTOR AGROPECUARIO – MEDIOS DE VIDA
OVERALL OBJECTIVE	Promoción del acceso a financiamiento para inversiones productivas y asistencia técnica para productores hortifrutícolas
ACTIVITIES	Apoyo a proyectos de inversión productiva y asistencia técnica para productores hortifrutícolas. El programa incluye microcréditos con intereses bonificados para inversiones productivas mediante el otorgamiento de garantías de hasta el 75% de los fondos solicitados y fondos no retornables para asistencia técnica para inversiones en sistemas de riego, electrificación e infraestructura productiva, según escala de producción.
OUTCOMES	A definir
TARGET ID (TARGET AREAS; BENEFICIARIES)	Productores hortifrutícolas
IMPLEMENTERS	DIGEGRA ; BROU, República Microfinanzas

TIMELINE	2025
COSTS & FINANCIAL RESOURCES	FFG

SECTOR	SECTOR AGROPECUARIO – MEDIOS DE VIDA
OVERALL OBJECTIVE	Fortalecimiento del mecanismo de apoyo a establecimientos afectados por condiciones extremas
ACTIVITIES	Fortalecer el mecanismo de apoyo del MGAP a productores agropecuarios afectados por condiciones extremas a través del Fondo Agropecuario de Emergencias (FAE) creado por la Ley n.º 18.362 (Artículo 207). El FAE provee apoyo financiero, infraestructura productiva o insumos que contribuyan a recuperar las capacidades perdidas como resultado de eventos climáticos, sanitarios o fitosanitarios extremos. Para acceder a los apoyos, se establecen condiciones que promueven la adaptación y la sostenibilidad de los sistemas de producción, por ejemplo, exigencias de adquirir seguros para una gestión integral de riesgo o requisitos de carga animal máxima.
OUTCOMES	Se han diseñado protocolos que permiten implementar las medidas de apoyo ante emergencias de forma más ágil y transparente.
TARGET ID (TARGET AREAS; BENEFICIARIES)	Productores agropecuarios
IMPLEMENTERS	Dirección General de Secretaría del MGAP ; Comisión de Emergencias Agropecuarias: Dirección General de Secretaría, DGDR y UD del MGAP, MEF e INUMET. Implementación de medidas de apoyo: Comisiones de Coordinación Departamental y Mesas de Desarrollo Rural, institutos sectoriales público-privados, cooperativas de productores, BROU y República Microfinanzas.
TIMELINE	2025
COSTS & FINANCIAL RESOURCES	MEF : USD 7 million

SECTOR	SECTOR AGROPECUARIO – MEDIOS DE VIDA
OVERALL OBJECTIVE	Mejora del acceso al crédito y al financiamiento público-privado de los establecimientos lecheros

ACTIVITIES	Garantización del financiamiento privado para facilitar el acceso a créditos con menores tasas de interés y mayor flexibilidad de condiciones para establecimientos lecheros a través del Fondo de Garantía para Deudas de Productores Lecheros (FGDPL) creado a través de la Ley n.º 19.596 y el acceso a financiamiento público-privado a través del Fondo de Financiamiento y Desarrollo Sustentable de la Actividad Lechera (FFDSAL).
OUTCOMES	A definir
TARGET ID (TARGET AREAS; BENEFICIARIES)	Productores lecheros remitentes
IMPLEMENTERS	INALE, MGAP y MEF ; Comisión Administradora Honoraria del FFDSAL: MGAP, MIEM, MEF, industria láctea, productores lecheros. República Microfinanzas.
TIMELINE	2025
COSTS & FINANCIAL RESOURCES	FGDPL: USD 36 million FFDSAL : USD 78 million