



# **Republic of Fiji**

## **Talanoa Dialogue Submission**

### **“How Do We Get There?”**

## How do we get there?

Fiji's commitment to the Paris Agreement is nothing short of ambitious given its insignificant contribution to climate change and relatively small economic stature. It has consciously chosen to champion the plight of Small Island Developing States in the context of climate change, through leading by example.

Fiji needs greater support in a range of aspects to effectively implement its climate targets and move towards the greater goal of peaking emissions and achieving net-zero emissions by 2050. The following areas are key interventions:

### 1) Adequate, Predictable and Sustainable Finance for Mitigation Initiatives

The NDC Implementation Roadmap identifies 18 short, medium and long term interventions to achieve an estimated 34% (627,000 tonnes of CO<sub>2</sub> per year) reduction in projected energy sector emissions by 2030. As mentioned in Fiji's submission on "Where are we", the interventions require a total investment of approximately US\$2.97 billion by 2030 in addition to the estimated US\$119 million already invested from 2014 to 2017.

Fiji is about to begin developing investment plans for these interventions that are envisaged to be taken up by not only Government but development partners, multilateral agencies and the private sector as well. In addition to the need to attract investor interest in these interventions, assistance is needed to develop bankable investment plans that entice domestic and foreign investors alike.

Despite Fiji taking innovative domestic measures to mobilise local and foreign investments for climate change through the ECAL and Green Bonds, much more needs to be done at the domestic and international level to ensure that Fiji and other vulnerable countries have access to adequate, predictable and sustainable climate financing. This may be from existing UNFCCC mechanisms such as the Green Climate Fund or

from bilateral/multilateral, public and private sources outside of the UNFCCC space.

### 2) Innovative Climate Finance

The current grant and loan based global financing space is saturated with countries needing immediate financial resources to address climate change. Fiji is leading the Pacific to develop affordable, scalable and transparent climate finance solutions for vulnerable segments of society. For example, the Fijian Government is partnering with the World Bank to develop affordable property insurance for houses of low build quality that are still deemed insurable with some basic reinforcements, such as roof strapping, risk underwritten by domestic insurance companies and livelihood protection of low-income households whose houses are deemed uninsurable. Parametric insurance solutions for the agriculture sector are also being considered.

Moreover, incentives such as getting tax breaks and lower interest rates on home loans if building designs incorporate climate smart aspects has been successfully developed by certain Pacific Island countries. This needs to be emulated in other Pacific countries such as Fiji whilst improving the national building codes.

More research and innovation in this space is required, which we believe will materialise through the operationalisation of the Pacific Climate Finance and Insurance "Drua" Incubator, a legacy of the Fijian Presidency of COP23 supported by the Government of Luxembourg. However, such research and innovation needs technical and financial assistance/engagement from external financiers, particularly the private sector (investors, insurance and reinsurance companies).

### 3) Develop Institutional Capacity

While international cooperation is essential to address climate change issues in Fiji and other Small Island Developing States, Fiji will need to prepare for and adapt to environmental and socio-economic changes brought about by changes in temperatures, sea level, and weather patterns etc.,

which are expected to impact people and the environment in different ways. The extent to which a country such as Fiji is able to mobilise and manage resources to mitigate against and adapt to these impacts will depend largely on the capacity of its institutions and people, commonly described as the institutional capacity.

The Fijian Government considers actions to mitigate climate change as mutually dependent on adaptation as all investments made to reduce carbon emissions must be made resilient to ensure its sustainability. However, understanding this relationship, attracting and managing climate finance and quantifying the climate and financial cost benefits need significant institutional development in Fiji.

The immediate and short-term options and opportunities to build institutional capacity in Fiji include: raising public awareness and understanding on climate mitigation and adaptation, strengthening capacity of national lead agencies such as the Climate Change Division and the Fiji Development Bank, reviewing, revising and developing climate change policies and strategies, enhancing capacity to develop greenhouse gas inventories and undertake emissions modelling, strengthening coordination mechanisms amongst state and with non-state actors, developing inclusive national programmes, broadening and strengthening participation and partnerships with all stakeholders, strengthening vulnerability and assessment capacity, mainstreaming climate change mitigation and adaptation into national plans and budgetary process and improving knowledge management.

#### 4) Access to Technology

Over the past few years, the cost of renewable technology has declined substantially in the global arena. For example, development in photovoltaic technology being driven by world renowned companies such as Tesla, TATA Power Solar Systems and Trina Solar have seen global prices of solar cells declined from USD\$76.67/watt in 1977 to just USD\$0.26/watt in 2016 making solar power more cheaper and more efficient. Moreover, developments in wind power, geothermal, biomass

and hydropower have also made significant strides towards affordability and efficiency.

Fiji, like other small island developing states, does not have the capacity to develop and manufacture its own renewables, relying heavily on global technological advancements that are scalable yet affordable. Every efforts must be made by the global community to ensure that such technology is rapidly available to small island and vulnerable nations either through UNFCCC mechanisms such Climate Technology Centre and Network and the Technology Executive Committee or from donor assistance and private sector investments.

#### 5) Overcome Economies of Scale

The problem of achieving economies of scale in Fiji and other small island developing states is intimately linked to the issue of access to technology. Due to relatively small population and large distance from developed parts of the world, investments into mitigation and adaption actions, particularly by the private sector does not make economic sense. Aspects such as marginal costs, logistical costs, security of tenure, access to reliable utility services and connectivity tend to keep investors and profit based agencies away from the Pacific Region. This also results in a significant delay of innovative solutions reaching Fiji shores by which time the world has moved onto new and improved solutions. Every effort must be put into developing bankable investment portfolios coupled with credible backstopping from financial bodies within the UNFCCC and those outside of it.

#### 6) Enhance National Carbon Sequestration

Fiji is actively involved in developing its forestry sector as important source of greenhouse mitigation. In this regard, more areas are expected to be identified under the Fiji REDD+ programme and all efforts will be made to create enabling environment to Generate financial benefits under carbon trading mechanisms. However, technical and financial support in this regard is needed.

Fiji envisages to continue to increase its conservation initiatives through reforestation and

afforestation of native and exotic forests and developing. Moreover, to better account for carbon sequestration/capture potential of Fiji's forest resources, preparatory works are underway to undertake a Forest Reference Level assessment.

In relation to mainstreaming adaptation needs into Fiji's NDCs, it is paramount that the development and implementation of its National Adaptation Plan (NAP) is accelerated. The NAP represents the overarching policy process through which the Government of Fiji is going to tackle climate change vulnerability. It is recognised that climate change presents cross-cutting challenges to national development and to the Fijian Governments obligations to its citizens. Consequently, the NAP takes its ultimate direction from the National Development Plan, the master development plan which guides national development processes, as well as its National Constitution. It then identifies climate change threats by existing national level policy and development planning documents. These are the Climate Vulnerability Assessment, Green Growth Framework, and the National Climate Change Policy.

The NAP is currently in development stage and has identified several barriers which must be addressed as they will frustrate the implementation of adaptation measures. These barriers arise from the way climate change exacerbates and poses new risks and problems. For instance there is a need to upgrade and make additional investments in meteorological and hydrological infrastructure, as well as to enhance climate information services to ensure stakeholders can make sense of this information. There is also a need to enhance national and sub-national development planning and budgetary processes so that they integrate the exacerbated and additional risks posed and induced by climate change. There is a need to update education systems and improve general public awareness about climate change and what can be done to address risks.

To support its future relocation work, the Fijian Government looks forward to the national level evidence project titled *"CommonSensing: Improved climate change resilience and sustainable development in Commonwealth of*

*Nations Small Island Developing States enabled by Earth Observation"* which is funded by the UK Space Agency's International Partnership Programme (IPP), and has the objective of improving resilience towards climate change, including disaster risk reduction. The project will serve as a key instrument to identify and prepare Fiji and its people to the risks posed by climate change and disasters. It will leverage earth observation data to provide stakeholders with access to vital information regarding disaster and climate risks to inform planning, food security needs and other environmental concerns. This information will be readily available to beneficiaries through web portal and mobile applications. CommonSensing project will create long-term investment loops, define priorities for future climate funds proposals and ensure a sustainable service-platform.

Moreover, Fiji will adopt 'no regrets' adaptation measures that would be justified even in the absence of climate change. These include better management of natural resources – particularly of coastal habitats, land, and water – measures such as disease vector control and improved spatial planning. The Fijian Government will take adaptation goals into account in future expenditure planning, would support community-based adaptation, and would ensure that major infrastructure investments meet adaptation criteria.

It is vital that science based adaptation finance target for 2025 is set as soon as possible, to ensure that adequate support is provided by the developed countries to Fiji to implement the NAP. The support must be based on a scientific analysis, needs to adapt to global warming impact scenarios and levels of realised mitigation ambition. Additionally, adaptation finance must be on equal footing with mitigation, where there should be a separate public finance target for adaptation in order to close the adaptation finance gap and ensure scaled up and predictable public finance for adaptation. Support must also be provided through development and transfer of technology and through capacity building. All the aforementioned should be in addition to what the Fijian Government plans to contribute to adaptation action from its domestic budget and expenditures.

Finally, the Climate Vulnerability Assessment identifies a list of potential adaptation measures to enhance resilience in key sectors. The 125 proposed interventions (detailed in **Appendix 1**) will require about F\$9.3 billion over the next 10 years to meet the resource requirements. Of the F\$9.3 billion estimated, F\$4.2 billion is allocated to planned investments and F\$5.1 billion are for new projects. Some of the projects are part of existing plans and will cost the government F\$4.2 billion; however funding is yet to be secured for each of them. The new projects proposed in addition to the existing plans will have an estimated cost of F\$5.1 billion. The short term investments (1-5 years) amount to F\$ 4.5 billion and medium term (5-10 years) investments amount to F\$4.8 million. The key sectors overarching these interventions include; Housing/ land-use, hazard management, transport, water, energy, health/education, environment, Agriculture, Fisheries and Social protection. The proposed interventions serve to build on governments efforts to reduce climate and disaster risks, better prepare for natural disasters and prepare swiftly to major shocks.

## REFERENCES

- GoF. 2017. *Climate Vulnerability Assessment: Making Fiji Climate Resilient*. Prepared by the World Bank for the Government of Fiji.
- GoF. 2016. *Fiji Post-Disaster Needs Assessment*. Tropical Cyclone Winston, February 20 2016. Suva, Fiji: Government of Fiji. Available from: [https://www.gfdr.org/sites/default/files/publication/Post%20Disaster%20Needs%20Assessments%20CYCLONE%20WINSTON%20Fiji%202016%20\(Online%20Version\).pdf](https://www.gfdr.org/sites/default/files/publication/Post%20Disaster%20Needs%20Assessments%20CYCLONE%20WINSTON%20Fiji%202016%20(Online%20Version).pdf).
- IGCI, *Climate Change Vulnerability and Adaptation Assessment for Fiji*, in prepared for The World Bank Group, J. Feresi, et al., Editors. 2000, International Global Change Institute, Hamilton, New Zealand and South Pacific Regional Environment Programme.
- McIver, L., Kim, R., Woodward, A., Hales, S., Spickett, J., Katscherian, D., Hashizume, M., Honda, Y., Kim, H., Iddings, S., Naicker, J., Bambrick, H., McMichael, A. and Ebi, K. 2016. Health Impacts of Climate Change in Pacific Island Countries: A Regional Assessment of Vulnerabilities and Adaptation Priorities. *Environmental Health Perspectives*. **124**(11), pp.1707-1714.
- McIver, L., Naicker, J., Hales, S., Singh, S. and Dawainavesi, A. 2012. Climate change & health in Fiji: environmental epidemiology of infectious diseases & potential for climate-based early warning systems. *Fiji Journal of Public Health* **1**, pp.7-13.
- McNamara, K.E. and Des Combes, H.J. 2015. Planning for Community Relocations Due to Climate Change in Fiji. *International Journal of Disaster Risk Science*. **6**(3), pp.315-319.
- MoE, *5-Year and 20-Year National Development Plan, "Transforming Fiji"*, M.o. Economy, Editor 2017, Republic of Fiji: Suva, Fiji.
- SPREP. 2016. *State of conservation in Fiji*. Country report 2013. Apia, Samoa: Secretariat of the Pacific Regional Environment Programme.
- Taylor, M., McGregor, A. and Dawson, B. 2016. *Vulnerability of Pacific Island agriculture and forestry to climate change*. Noumea, French Calendonina: Pacific Community.
- World Bank. 2000. *Cities, Seas, and Storms: Managing Change in Pacific Island Economies*. Volume IV Adapting to Climate Change. Washington, D.C: The International Bank for Reconstruction And Development/ THE WORLD BANK.

# APPENDIX 1

## Republic of Fiji

Intervention description	Time frame	Cost (million F\$)	Responsible agency	Type of intervention	Status	Comments
<b>HOUSING / LAND USE</b>						
Flood control planning for Nadi River.	Short term	0.75	Ministry of Waterways	Technical assistance	Planned	Includes structural and nonstructural flood control measures and Government of Fiji staff training on hydrology and streamflow measurements.
Development of easy-to-use risk assessment tools focusing on local level flood and landslide risks.	Short term	1.00	Ministry of Local Government, Housing and Environment	Technical assistance	New	Seeks to inform policy makers, land use planners, businesses and landowners to influence location decisions.
Flood Management Action Plans for Nadi and high-risk secondary towns of Ba, Labasa, Lami, Lavua, Pacific Harbor, Rakiraki, and Seaqaqa.	Short term	2.00	Department of Local Government; Ministry of Infrastructure and Transport	Technical assistance	New	Includes structural and nonstructural measures.
Housing micro-finance (5-year loans) to retrofit existing houses and construct new houses to approved designs and standards.	Short term	2.00	Ministry of Economy; Ministry of Local Government, Housing and Environment	Technical assistance	New	Carries out technical feasibility assessments and design of a half mortgage system targeting middle-low income households.
Preparation of Guided Strategic Land Development Plans.	Short term	2.00	Department of Housing; Department of Town and Country Planning	Technical assistance	New	Focuses on three metro areas and two to three fast-growing secondary towns.
Preparation or update of Guided Urban Growth Management Plans for three main conurbations.	Short term	2.50	Department of Town and Country Planning	Technical assistance	New	Includes urban growth analyzes; annual business surveys; assessment of vacant lands and administrative barriers to ease access to land.
Rehabilitation of roads and bridges in Nadi town.	Short term	15.00	Ministry of Infrastructure and Transport	Investment	Planned	Carries out post-TC Winston rehabilitation; Phase 1 of a long-term flood management program.

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Intervention description	Time frame	Cost (million F\$)	Responsible agency	Type of intervention	Status	Comments
<b>HOUSING / LAND USE</b>						
Providing affordable serviced land close to employment nodes to middle- and low-income earners to meet existing housing backlog and future urban growth.	Short term	30.00	Department of Housing; Department of Local Government	Investment	New	Seeks to streamline administrative procedures for planning and land subdivision approvals; strategic investments in transport, water, sewage collection and treatment; and power routes.
Informal settlement upgrades.	Short term	47.40	Department of Housing	Investment	Planned	Includes participatory slum upgrading, citywide and townwide informal settlement upgrades, and resilient informal settlement upgrading programs.
Priority Flood Risk Management Action Plan for high-risk towns.	Medium term	20.00	City and Town Councils; Ministry of Infrastructure and Transport	Investment	New	Focuses on secondary towns of Ba, Labasa, Lami, Lavua, Pacific Harbor, Rakiraki, and Seaqaqa.
Scale-up of informal settlement upgrades.	Medium term	30.00	Department of Housing	Investment	New	Implements eco-based and semi-structural protection measures where feasible.
Priority Flood Risk Management Action Plan for Nadi town (Phase 2).	Medium term	40.00	Ministry of Infrastructure and Transport	Investment	New	

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Intervention description	Time frame	Cost (million F\$)	Responsible agency	Type of intervention	Status	Comments
<b>HAZARD MANAGEMENT</b>						
Investment in drone technology to assist with post-disaster assessments.	Short term	0.10	National Disaster Management Office; Fiji Electricity Authority; Fiji Roads Authority	Investment	New	
Hazard mapping: climate change vulnerability assessments focusing on site-specific flood risks and drought, flood modeling, coastal hazard risk assessments, and landslide risk assessments.	Short term	6.50	Department of Housing; Department of Environment; Department of Lands; Fiji Roads Authority	Technical assistance	New	Seeks to inform rural poverty reduction strategies and livelihood strategies. Includes assessments to inform participatory slum upgrading, citywide and townwide informal settlement upgrading, and resilient informal settlement upgrading programs.
National high-resolution survey.	Short term	2.00	Department of Lands	Technical assistance	New	Includes LiDAR (topography and bathymetry) surveys.
Resilient backup generation for critical facilities/evacuation centers.	Short term	20.00	Fiji Electricity Authority; Department of Energy; users	Investment	New	
River Protection Phase I-a.	Short term	100.00	Ministry of Waterways	Investment	New	
River Protection Phase I-b.	Short term	140.00	Ministry of Waterways	Investment	New	
Coastal Protection Phase I-a.	Short term	200.00	Ministry of Waterways	Investment	New	
Coastal Protection Phase I-b.	Short term	400.00	Ministry of Waterways	Investment	New	
River Protection Phase II	Medium term	240.00	Ministry of Waterways	Investment	New	
Coastal Protection Phase II	Medium term	1,000.00	Ministry of Waterways	Investment	New	

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Intervention description	Time frame	Cost (million F\$)	Responsible agency	Type of intervention	Status	Comments
<b>TRANSPORT</b>						
Training and capacity building for Fiji Meteorological Services.	Short term	0.06	Fiji Meteorological Services; Fiji Roads Authority	Technical assistance	New	Develops current and predicted intensity-duration-frequency (IDF) curves for different rainfall areas.
Assessment of the impact of overloaded trucks on sealed road pavements.	Short term	0.24	Fiji Roads Authority	Technical assistance	New	Looks at impact associated with heavy haulage movements for sugar cane, ore, logging, aggregate.
Development of Fiji Roads Authority Integrated Asset Management System and Strategy.	Short term	0.48	Fiji Roads Authority	Policy	New	
Institutional strengthening and capacity building for an integrated transport strategic planning framework.	Short term	0.96	Fiji Roads Authority	Technical assistance	New	Incorporates risk, climate change adaptation, and vulnerability considerations.
Assessments of prioritization for development of jetties or landings and supporting road infrastructure on outer islands.	Short term	1.44	Fiji Roads Authority	Technical assistance	New	
Condition inspection of Fiji Roads Authority assets.	Short term	1.53	Fiji Roads Authority	Technical assistance	Planned	Includes roads, bridges, crossings, and jetties/landings. Replaces assets and updates the Asset Management System.
Traffic counting program on sealed and unsealed roads.	Short term	2.50	Fiji Roads Authority	Policy	Planned	Prioritizes maintenance and capital works.
Highest priority jetty replacement and upgrade - Phase I.	Short term	15.30	Fiji Roads Authority	Technical assistance	Planned	

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Highest priority water crossing renewal and replacement - Phase I.	Short term	71.20	Fiji Roads Authority	Technical assistance	New	Includes bridges/crossings/culverts/ footbridges.
Highest priority road renewal and replacement - Phase I.	Short term	104.80	Fiji Roads Authority	Technical assistance	New	
Jetty replacement and upgrade works package - Phase I.	Short term	127.50	Fiji Roads Authority	Investment	Planned	
Road renewal and replacement works package - Phase I.	Short term	1,048.00	Fiji Roads Authority	Investment	Planned	Includes upgrades to 450 km of sealed and 1425 km of unsealed roads.
Highest priority road renewal and replacement works - Phase II.	Medium term	104.80	Fiji Roads Authority	Technical assistance	New	
Road renewal and replacement works package - Phase I (climate upgrade portion).	Short term	262.00	Fiji Roads Authority	Investment	New	Includes upgrades to 450 km sealed and 1,425 km unsealed roads.
Highest priority water crossing works package - Phase I.	Short term	356.00	Fiji Roads Authority	Investment	Planned	Includes bridges/crossings/culverts/ footbridges.
Highest priority water crossings works package - Phase I (climate upgrade portion).	Short term	356.00	Fiji Roads Authority	Investment	New	Includes bridges/crossings/culverts/ footbridges.
Highest priority Jetty replacement and upgrade - Phase II.	Medium term	15.30	Fiji Roads Authority	Technical assistance	Planned	
Highest priority water crossing renewal and replacement works - Phase II.	Medium term	71.20	Fiji Roads Authority	Technical assistance	New	Includes bridges/crossings/culverts/ footbridges.

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Intervention description	Time frame	Cost (million F\$)	Responsible agency	Type of intervention	Status	Comments
TRANSPORT						
Jetty replacement and upgrade works package - Phase II.	Medium term	127.50	Fiji Roads Authority	Investment	Planned	
Road renewal and replacement works package- Phase II (climate upgrade portion).	Medium term	262.00	Fiji Roads Authority	Investment	New	Includes upgrades to 450 km of sealed and 1,425 km of unsealed roads.
Highest priority water crossings works package - Phase II.	Medium term	356.00	Fiji Roads Authority	Investment	Planned	Includes bridges/crossings/culverts/ footbridges.
Highest priority water crossings works package - Phase II (climate upgrade portion).	Medium term	356.00	Fiji Roads Authority	Investment	New	Includes bridges/crossings/culverts/ footbridges.
Road renewal and replacement works package(s) Phase II.	Medium term	1,048.00	Fiji Roads Authority	Investment	Planned	Includes upgrades to 450 km of sealed and 1,425 km of unsealed roads.

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Intervention description	Time frame	Cost (million F\$)	Responsible agency	Type of intervention	Status	Comments
<b>WATER</b>						
Endorsement of the draft National Water Supply and Wastewater Policy.	Short term	1.0	Ministry of Infrastructure and Transport	Policy	Planned	
Revised design and appraisal guidelines.	Short term	1.0	Ministry of Infrastructure and Transport	Policy	Planned	
Revision of ongoing master plans.	Short term	1.0	Water Authority of Fiji	Technical assistance	Planned	
Introduction of water tariffs for water conservation.	Short term	1.0	Ministry of Economy	Policy	New	
Awareness campaigns and incentives for water conservation.	Short term	1.0	Water Authority of Fiji; Ministry of Infrastructure and Transport	Technical assistance	New	
Formulation and adoption of national WASH resilience standards indicators.	Short term	1.0	Ministry of Infrastructure and Transport	Policy	New	
Inclusion of climate change adaptation-related indicators to the WSWP indicators and national WASH indicators.	Short term	1.0	Ministry of Infrastructure and Transport	Policy	New	
Improved water asset management.	Short term	2.0	Water Authority of Fiji	Policy	Planned	
Investment in backup pumps and critical spares.	Short term	2.00	Water Authority of Fiji	Investment	New	
Elaboration of Drought Management Plans.	Short term	2.0	Water Authority of Fiji; Ministry of Infrastructure and Transport	Technical assistance	New	
Finalization of power generator backup capacity upgrade.	Short term	5.00	Water Authority of Fiji	Investment	Planned	

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<b>WATER</b>						
Drinking Water Safety and Security Planning for rural communities.	Short term	5.0	Ministry of Infrastructure and Transport; Ministry of Agriculture; NGOs	Technical assistance	New	
Awareness campaigns encouraging investment in rainwater harvesting, review of building codes and financial incentives.	Short term	5.0	Ministry of Infrastructure and Transport	Technical assistance	New	
Improved monitoring of water resources.	Short term	10	Water Authority of Fiji; Ministry of Works, Transport & Public Utilities; Ministry of Lands and Mineral Resources; Fiji Meteorological Services	Technical assistance	Planned	
Revision of wind-proofing design standards and retrofitting of existing infrastructure.	Short term	10.00	Water Authority of Fiji	Investment	New	
Investments in mobile water desalination plants.	Short term	25.00	Water Authority of Fiji	Investment	New	
Landslide protection measures.	Short term	40.00	Water Authority of Fiji; Ministry of Lands and Mineral Resources	Investment	New	Not yet formally planned.
Infrastructure retrofitting.	Short term	300.00	Water Authority of Fiji	Investment	New	Not yet formally planned.
Supporting integrated catchment management.	Medium term	2.0	Ministry of Infrastructure and Transport; Ministry of Agriculture; Fiji Electricity Authority; Ministry of Fisheries and Forest; Water Authority of Fiji	Policy	New	

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Development of freshwater allocation mechanisms between sectors.	Medium term	2.0	Ministry of Infrastructure and Transport; Ministry of Works, Transport & Public Utilities; Ministry of Agriculture; Fiji Electricity Authority; Water Authority of Fiji	Policy	New	
Relining of sewers and treatment ponds in coastal areas.	Medium term	5.00	Water Authority of Fiji	Investment	Planned	
Strengthening rural and peri-urban water scheme monitoring mechanisms, awareness campaigns, and technical assistance	Medium term	10	Ministry of Infrastructure and Transport; NGOs	Technical assistance	Planned	
Reduction of physical water losses.	Medium term	50.00	Water Authority of Fiji	Investment	Planned	
Water re-use (agriculture, industry, landscaping)	Medium term	50.00	Water Authority of Fiji	Investment	New	
Extension of sewerage systems in flood-prone areas.	Medium term	200.00	Water Authority of Fiji	Investment	Planned	
Diversification of water sources.	Medium term	400.00	Water Authority of Fiji; Ministry of Lands and Mineral Resources; Ministry of Works, Transport & Public Utilities	Investment	Planned	Seeks to diversify sources for vulnerable systems. Studies are ongoing, but no formal planning of investments yet.

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ENERGY						
Review of design and technical standards, and installation of generation assets.	Short term	0.2	Department of Energy	Policy	New	Includes distributed generation such as solar home systems.
Enhancement of insurance protection of key energy assets.	Short term	0.2	Ministry of Education, Heritage and Arts; Fijian Electricity Authority; Department of Energy	Policy	New	Included as part of the broader Disaster Risk Financing Strategy of government.
Assessment of battery storage options for grid stability.	Short term	0.2	Fijian Electricity Authority; Department of Energy	Policy	New	
Options for increasing energy resilience.	Short term	0.2	Fijian Electricity Authority	Policy	New	Investigates the benefits of demand-side management options and strategies for building a resilient power system.
Energy Sector Resilience Strategy.	Short term	1.0	Fijian Electricity Authority; Department of Energy	Policy	New	Assesses the costs and benefits of key measures for improving the resilience of the power system and sourcing of concessional funds to meet the financial viability gap.
Improving resilience of rural mini-grids and solar home systems.	Short term	4.00	Department of Energy	Investment	New	
Expansion of solar generation.	Short term	79.20	Fijian Electricity Authority	Investment	New	Includes additional generation in Northwest Viti Levu and distributed generation in Vanua Levu, including 5x 5 MW solar plants with storage in Viti Levu (Sigatoka, Lautoka, Tavua, Ba, Nadi) and 5 MW solar in Vanua Levu.

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Expansion of undergrounding of distribution lines.	Short term	90.00	Fiji Electricity Authority	Investment	New	Targets Suva, Nadi, Lautoka, Ba, Labasa, and Savusavu; assumes 200 km of existing overhead infrastructure in these locations.
Expansion of the 132 kV transmission network.	Short term	241.00	Fiji Electricity Authority	Investment	Planned	Includes Wailoa-Nadarivatu double circuiting, Nadarivatu to Sigatoka, Virara to Koronubu, Ba and Wailoa to Central Region Circuit 2.
Increasing the resiliency of the power system.	Medium term	0.2	Fiji Electricity Authority	Policy	New	Investigates more diversified and distributed generation options, including mini-grids.
Diversification of renewable energy generation.	Medium term	30.00	Fiji Electricity Authority	Investment	Planned	Includes investment in solar generation and feasibility studies for new biomass power plants.

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<b>HEALTH / EDUCATION</b>						
Repair and reconstruction of school and health infrastructure affected by TC Winston.	Short term	0.0	Construction Implementation Unit	Investment	Planned	Currently in progress, completion targeted for end of 2018.
Development of prioritization guidelines for planning asset maintenance and facility upgrades.	Short term	0.3	Ministry of Education, Heritage and Arts; Ministry of Health and Medical Services; Ministry of Infrastructure and Transport	Policy	New	
Provide funding and support to the Fiji Institution of Engineers and Master Builders Association.	Short / medium term	0.3	Ministry of Economy; Fiji Institution of Engineers; Master Builders Association	Technical assistance	New	Supports the ongoing contribution of technical peak bodies to the construction sector.
Review and update standard school and health building designs.	Short term	0.5	Construction Implementation Unit; Ministry of Infrastructure and Transport; Ministry of Education, Heritage and Arts; Ministry of Health and Medical Services; private sector	Technical assistance	New	Develops consistent, best value, and compliant designs.
Build capacity and capability of the Ministry of Health and Medical Services to manage health infrastructure assets.	Short term	0.5	Ministry of Health and Medical Services; Ministry of Infrastructure and Transport	Technical assistance	New	
Planning and management strategies for school buildings used as evacuation centers.	Short term	0.8	National Disaster Management Office; Ministry of Education, Heritage and Arts	Policy	Planned	Introduces a clear system for the assessment, labeling, and signage of evacuation centers; produces community disaster risk management plans.

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Support of the climate change and disaster management units within Ministry of Health and Medical Services and Ministry of Education, Heritage and Arts.	Short / medium / long term	0.8	Ministry of Health and Medical Services; Ministry of Education, Heritage and Arts	Technical assistance	Planned	
Detailed condition survey of all health and education infrastructure assets.	Short term	2.0	Construction Implementation Unit; Ministry of Infrastructure and Transport; Ministry of Education, Heritage and Arts; Ministry of Health and Medical Services	Technical assistance	New	Inputs data into the national buildings infrastructure asset management database.
Development of a national infrastructure asset management database.	Short term	2.0	Construction Implementation Unit; Ministry of Infrastructure and Transport; Ministry of Education, Heritage and Arts; Ministry of Health and Medical Services	Technical assistance	Planned	Collates information relating to all education and health infrastructure assets.
Update of the Fiji National Building Code.	Short / medium term	1.5	Ministry of Infrastructure and Transport; Ministry of Industry Trade and Tourism	Policy	Planned	Seeks to align code with international standards and current understanding of hazards.
Development of hazard maps and planning guidelines to inform location planning for new infrastructure.	Short term	2.0	Ministry of Land and Mineral Resources; Ministry of Infrastructure and Transport	Policy	New	Focuses on the impacts of storm surges, flooding, and landslides.
Support for ongoing development, provision and promotion of TVET training for construction trades.	Short term	2.5	Ministry of Education, Heritage and Arts; Ministry of Industry Trade and Tourism	Technical assistance	New	

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Intervention description	Time frame	Cost (million F\$)	Responsible agency	Type of intervention	Status	Comments
<b>HEALTH / EDUCATION</b>						
Progressive structural upgrading of all remaining schools and health facilities not affected by TC Winston - Phase I.	Short term	300.00	Construction and Implementation Unit; Ministry of Infrastructure and Transport; Ministry of Education, Heritage and Arts; Ministry of Industry Trade and Tourism	Investment	New	Carries out scope works based on findings from the detailed condition survey.
Development of a retrofitting guideline for existing structures.	Medium term	0.5	Construction Implementation Unit; Ministry of Infrastructure and Transport; Ministry of Industry Trade and Tourism	Technical assistance	New	Strengthens the capacity of school communities to upgrade and maintain existing facilities.
Progressive structural upgrading of all remaining schools and health facilities not affected by TC Winston - Phase II.	Medium term	260.00	Construction and Implementation Unit; Ministry of Infrastructure and Transport; Ministry of Education, Heritage and Arts; Ministry of Industry Trade and Tourism	Investment	New	Carries out scope works based on findings from the detailed condition survey.

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Intervention description	Time frame	Cost (million F\$)	Responsible agency	Type of intervention	Status	Comments
<b>ENVIRONMENT</b>						
Community level investments for improved ecosystem resilience.– Phase I.	Short term	30.00	Ministry of Agriculture, Rural and Maritime Development and National Disaster Management	Investment	Planned	Uses ecosystem approaches and small coastal protection infrastructures for improved resilience of land and coastal environments (including fisheries and coral reefs).
Waste minimization.	Medium term	4.50	Department of Environment	Investment	Planned	Includes recycling of reusable material, green waste, and concrete.
Strengthening and enforcement of planning and environmental legislative and institutional frameworks.	Medium term	5.0	Department of Environment	Policy	New	
Strengthened monitoring of ecosystems.	Medium term	5.0	Department of Environment	Technical assistance	New	Establishes a government-wide database to inform improved management of forests, coral reefs, and mangroves.
Strengthened management of ecosystems.	Medium term	12.00	Department of Environment	Investment	New	Invests in protected coral reefs, mangroves, and native forest reserves/ national parks.
Community level investments for improved ecosystem resilience - Phase II.	Medium term	20.00	Ministry of Agriculture, Rural and Maritime Development and National Disaster Management	Investment	Planned	Uses ecosystem approaches and small coastal protection infrastructures for improved resilience of land and coastal environments (including fisheries and coral reefs).

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Intervention description	Time frame	Cost (million F\$)	Responsible agency	Type of intervention	Status	Comments
<b>AGRICULTURE</b>						
Climate change assessments in the agriculture sector.	Short term	0.5	Ministry of Agriculture; research partners	Technical assistance	Planned	
Strengthening of disaster preparedness and rehabilitation efforts.	Short term	0.5	Ministry of Agriculture; National Disaster Management Office	Technical assistance	New	
Feasibility study for a flood mitigation pilot scheme for the Sigatoka Valley.	Short term	1.0	Ministry of Agriculture; Ministry of Waterways	Technical assistance	New	Includes water retention infrastructure for irrigation to boost productivity.
Taro leaf blight-resistant breeding program.	Medium term	1.0	Ministry of Agriculture; research partners	Technical assistance	New	
Climate-smart agricultural practices.	Medium term	2.0	Ministry of Agriculture; farmer organizations	Technical assistance	Planned	Trains farmers on improved soil health, integrated pest management, irrigation systems, protective cropping, and agro-forestry.
Crop insurance scheme.	Medium term	2.0	Ministry of Agriculture; private sector	Investment	Planned	Builds on the existing pilot by the government and Food and Agriculture Organization (FAO).
Sustainable agricultural practices.	Medium term	2.0	Ministry of Agriculture; research partners	Investment	Planned	Researches local feed options and supports farmers in growing and processing their own feed.
Livestock research.	Medium term	2.0	Ministry of Agriculture; research partners	Investment	Planned	Researches livestock breeds that are more resilient to high temperatures and water stress and seeks to expand the genetic diversity of the local herds accordingly.
Research and investment in crop diversification.	Medium term	2.0	Ministry of Agriculture; research partners	Investment	Planned	Focuses on climate-resilient root crops, including strengthening of seed supply systems.

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Intervention description	Time frame	Cost (million F\$)	Responsible agency	Type of intervention	Status	Comments
<b>FISHERIES</b>						
Training on sustainable fishing practices.	Short term	0.7	Ministry of Fisheries; development partners; NGOs	Technical assistance	Planned	
Strengthening of community-based fisheries management.	Short term	0.7	Ministry of Fisheries; development partners; NGOs	Policy	Planned	
Training of fishing communities on disaster response.	Short term	1.3	Ministry of Fisheries; development partners; NGOs	Technical assistance	New	Addresses when to remove gear from the sea, how to store boats and equipment securely, etc.
Extension of early warning systems for fishing households, including remote communities.	Short term	5.00	National Disaster Management Office	Investment	Planned	
Small-scale fisheries and aquaculture activities insurance scheme.	Medium term	3.00	Ministry of Fisheries; private sector	Investment	New	
Promotion of alternative income-sources not dependent on fisheries.	Medium term	10.00	Ministry of Fisheries; Ministry of Agriculture, Rural and Maritime Development and National Disaster Management; development partners; NGOs	Investment	New	

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Intervention description	Time frame	Cost (million F\$)	Responsible agency	Type of intervention	Status	Comments
<b>SOCIAL PROTECTION</b>						
Updating core social protection databases with pending beneficiary caseloads.	Short Term	0.05	World Bank; World Food Programme	Technical Assistance	Planned	Including the Poverty Benefit Scheme (PBS), Social Pension Scheme (SPS), and Care and Protection Scheme (CPS).
Expansion in coverage of social protection programs.	Short Term	46.90	Ministry of Women, Children and Poverty Alleviation	Investment	Planned	To cater towards the increase of beneficiary's post TC Winston.
Upgrade and centralize the Poverty Benefit Scheme Database.	Short Term	N/A	Department of Information Technology and Computing Services	Technical Assistance	Planned	
Develop Standard Operating Procedures and guidelines for responding to disasters using social protection programs.	Short Term	TBC	Ministry of Women, Children and Poverty Alleviation	Policy	Planned	
Exploring contingency financing options for scaling-up social protection programs in response to natural hazards.	Medium Term	TBC	Ministry of Economy	Investment	New	
Promotion of alternative income-sources not dependent on fisheries.	Medium term	10.00	Ministry of Fisheries; Ministry of Agriculture, Rural and Maritime Development and National Disaster Management; development partners; NGOs	Investment	New	