

SUMMARY OF ACTIVITIES BEING UNDERTAKEN IN RWANDA ON ASSESSING COSTS AND BENEFITS OF ADAPTATION OPTIONS

Madrid Workshop on cost and benefits of adaptation options, 22-24 June 2010

Abstract_Rwanda

I. Introduction

Rwanda as one of the Least Developed Countries (LDCs) identified six immediate priority areas that respond to the urgent and immediate needs for adaptation to climate change as part of the NAPA process:

- (1) integrated water resource management,
- (2) setting up an information system for early warning hydrological and agro-meteorological systems and rapid intervention mechanisms,
- (3) promotion of intensive agro-pastoral activities,
- (4) promotion of non-agricultural income generating activities,
- (5) introduction of species resistant to extreme conditions,
- (6) development of alternative sources of energy to firewood.

From these priority options, seven urgent project profiles have been developed. These projects have direct benefits, cross-cutting impacts, improve the adaptive capacity of the populations and reinforce the resilience of fragile ecosystems and include:

1. Land conservation and protection against erosion and floods at the level of Districts of vulnerable regions to climate change;
2. Establish the mastering hydro meteorological information and early warning systems to control extreme phenomena due to climate change: - Installation and rehabilitation of hydrological and meteorological stations;
3. Development of irrigated areas by gravity water systems from perennial streams and rivers in often vulnerable zones to prolonged droughts;
4. Support Districts of vulnerable regions to climate change in planning and implementing measures and techniques related to conservation and water harvesting and intensive agriculture, and promoting existing and new resistant varieties of crops adapted to different bioclimatic soil;
5. Increase adaptive capacity of grouped habitat "Imidugudu" located in vulnerable regions to climate change by the improvement of drinking water, sanitation and alternative energy services, and the promotion of non agricultural jobs;
6. Increase food and medicine modes of distribution to respond to extreme climate change and sensitize to stocking and conservation of agriculture products;
7. Preparation and implementation of woody combustible substitution national strategy to combat the deforestation and erosion as well.

The estimated total project costs for these projects were \$8.1 million (reported to the UNFCCC).

The NAPA also considered with great importance the aspect of necessary disconnection of energy production of wood as an urgent strategy for Rwanda, which is in the urgent global “national” adaptation efforts to climate change. Also, the stabilization of populations around grouped habitat giving access to basic services and gradual and restabilized reconversion of the population towards agricultural or non agricultural related employment helps to increase the adaptation capacity of the population to climate change, climate variability and extremes.

II. Four categories of adaptation have been identified that relate to the balance between development and climate change.

1. Accelerating development to cope with existing impacts, e.g. integrated water management, electricity sector diversity, natural resources and environmental management.
2. Increasing social protection, e.g. cash transfers to the most vulnerable following disasters, safety nets for the most vulnerable.

The second two are associated with tackling future climate risks and are

3. Building adaptive capacity and institutional strengthening, e.g. developing meteorological forecasting capability, information provision and education.
4. Enhancing climate resilience, e.g. infrastructure design, flood protection measures.

The estimated costs of adaptation will rise in future years, estimates of medium-term costs to address future climate change are typically of the order of \$50 – 300 million per year for Rwanda by 2030. Most of the NAPA priority projects involve elements of an IWRM strategy, including a hydro-meteorological network and early warning system, improved access to drinking water and sanitation, and conservation of lands.

III. Projects that are being implemented in Rwanda:

1. A Pilot project on reducing vulnerability to climate change by establishing early warning and disaster preparedness systems and support of integrated watershed management in flood prone areas (6,000,000\$): This pilot project focuses solely on the Gishwati watershed and will be implemented by the United Nations Development Programme (UNDP) and United Nations Environment Programme (UNEP) between 2009-2013. Total costs of implementation are an estimated USD\$ 7,041,000, with USD\$ 3,641,000 coming from Least Developed Country Fund (LDCF) and USD\$ 3,400,000 in co-financing (primarily in-kind support from the GoR).
2. A Pilot Project on mainstreaming vulnerability and adaptation issues in the policies and development plans is ongoing and being implemented by Kigali institute of Science and Technology (KIST) in collaboration with the Ministry of infrastructures (MININFRA). The total budget allocated on this project is US \$ 340,000 (cost 400,000.00US \$)
3. NAPA-National Adaptation Programmes of Action to climate change) : 195,000.00 US \$

The following activities in the field of forest and water management have been undertaken in Rwanda

1. Forest

Activity	Arguments	Concrete Project/Road Map	Financial Mechanisms, Sources of Funds
Increase afforested Areas	<ul style="list-style-type: none"> - Reducing deforestation and forest degradation. - Promotion of reforestation - Maintain / increase carbon sink 	<ul style="list-style-type: none"> - Inventory of existing forest degradation. - Community managed aorestation and reforestation projects. - Promotion of agroforestry where applicable - Aorestation projects 	<ul style="list-style-type: none"> - Government - GEF - UNEP, - Local activities - African Development Bank
Maintain and/or increase density of forests	<ul style="list-style-type: none"> - Maintain carbon sink 	<ul style="list-style-type: none"> - Management of existing forests 	<ul style="list-style-type: none"> - Government - GEF - UNEP, - Local activities - African Development Bank
Encourage use of alternative source of energy	<ul style="list-style-type: none"> - To reduce dependency of biomass energy and maintain the density of our forests - Build local capacity to encourage transfer of appropriate technologies 	<ul style="list-style-type: none"> - Use of energy efficient technologies (gas efficient, stoves, bio-fuel and solar) - Development of training centre on energy of climate change issues 	<ul style="list-style-type: none"> - Government - GEF - UNEP - Local activities - African Development Bank - World Bank,

2. Water and Sanitation

Activity	Arguments	Concrete Project/Road Map	Financial Mechanisms, Sources of Funds
Development of master plans on IWRM and action plans	<ul style="list-style-type: none"> - To integrate cc issues on IWRM and NAPA. - Reduce vulnerability of WR to reduce omissions of waste. - Propose quality control of WR and inputs to inventory of waste in national communications. - Promote appropriate technology with regard to sanitation in urban and rural areas. 	<ul style="list-style-type: none"> - Development implementation of master plans by each country for WRM. - Strengthening capacity for disaster management (floods, drought) and risk management and early warning systems. - Rehabilitate and increase capacity of weather forecasting stations 	<ul style="list-style-type: none"> - Government - local community - GEF - UNEP - African Development Bank - World Bank
Development of promotion of best practices in waste management /sanitation	<ul style="list-style-type: none"> - Consultative planning (multidisciplinary) 	<ul style="list-style-type: none"> - Implement of best practices in WM and IWM strategies. - Correction factors developed locally - Developing QA on waste data. 	<ul style="list-style-type: none"> - Government, - local community - GEF - UNEP, - African Development Bank - World Bank
Promote interstate cooperation and co-ordination of WRM	<ul style="list-style-type: none"> - Avoid conflicts on WR - Pollution prevention - Promotion of shared vision and management - Promote efficient and sustainable use of WR. - Share economic opportunities of WR e.g. 	<ul style="list-style-type: none"> - Development and implementation of trans boundary agreements on shared water resources. 	<ul style="list-style-type: none"> - Government - GEF - UNEP, - Local community - African Development Bank

	Nile Basin		- World Bank
Control and management of invasive and alien plants (IAP)	<ul style="list-style-type: none"> - Link to CC - Depletion of WR - Threatening food security 	<ul style="list-style-type: none"> - Develop IAP control or management programs. - Develop and implement MOUs based on interstate management of IAPs. 	<ul style="list-style-type: none"> - Government - GEF - UNEP, - Local community - African Development Bank - World Bank
Promotion of water harvesting systems	<ul style="list-style-type: none"> - Control soil erosion, land degradation, flooding. - Reduce vulnerability to water scarcity hence food security. 	<ul style="list-style-type: none"> - Construction of relevant and appropriate infrastructure. - Technology transfer 	<ul style="list-style-type: none"> - Government - GEF - UNEP, - Local community - African Development Bank - World Bank
Protection of WRs	<ul style="list-style-type: none"> - Ensuring quality of WR. - Implementation and respect of interstate agreements. - Ensuring adequate quality water for domestic and agricultural use therefore food security. 	<ul style="list-style-type: none"> - Develop local standards for water quality in particular surface run off from roads and other infrastructure. - Raise awareness of local population with regards to WR management. - Develop guidelines for protection of water resources e.g. wells, boreholes etc. 	<ul style="list-style-type: none"> - Government - GEF - UNEP - Local cable activities - African Development Bank - World Bank