

GCF Project Idea Note

This project idea note is intended to provide an indication on potential of undertaking a project and ascertain whether it is likely to be suitable for funding by the GCF. It could also form the basis for preliminary discussions with Government and other stakeholders. Note that not all information is always available at the idea note stage.

BASIC PROJECT INFORMATION

Preliminary project title	Transforming climate vulnerable farming communities into resilient agroforestry practitioners for community well-being and healthy ecosystems.
Consultant Preparing PIN	Poojanraj KHURUN, Msc Forest Management, IIFM, 2005 pkhurun@gmail.com Tel: +230 52572992
Declaration of consultant	I hereby declare on my honor that the present report is an original work of research and consultation prepared personally by me using the best available information and resource persons consulted in the subject matter. All information and data in this report have been laid out in such a manner that reflects the true actual picture of the situation of the mentioned sectors in the Republic of Mauritius.
Country of implementation	Republic of Mauritius
Income status of the Republic of Mauritius	Upper middle-income economy
Estimated duration project	10 years
GCF Accredited Entity (AE)	JAFTA
Role of the AE	The Accredited Entity carry out a range of activities that usually include the development of funding proposals and the management and monitoring of projects and programs.
Proposed Executing Entity	SADC/JICA
Are there other non-GCF projects in country that could be connected to the project/ which the project could help upscale (e.g. GEF)?	“ Enhancing rural livelihoods and agriculture productivity through agroforestry development in Mauritius ”. Project code is TCP/MAR/3705, from 2019-2021 and is under implementation.

ESTIMATED PROJECT COST INFORMATION

Estimated GCF contribution (USD)	2.0 M USD
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Estimated co-financing (USD) [Please specify the sources]	500 000USD Government in kind contribution
Estimated total project cost (USD)	2.5M USD

ALIGNMENT WITH KEY PRIORITIES

Alignment with SADC priorities

The project is aligned with SADC priorities as follows:

- a. Sustainable food security under the SADC Revised Regional Indicative Strategic Development Plan 2015-2020*
- b. Food, Agriculture and Natural resources as one of its intervention areas and cross cutting issues of Environment and Sustainable Development.*

Alignment with national priorities

The Project Idea has been discussed with the National Designated Authority regarding its relevance and impact on the Mauritian Economy and the resilience of local farmers. The project idea is in line with Government Priorities based on the Country Programming Framework (2018-2021) for the Agricultural sector as agreed by the Government and the FAO. This project is also in line with the Strategic Partnership Framework of the UNDP where promotion of community action is clearly mentioned.

The proposal was discussed with the CEO of the Food and Agricultural Research and Extension Institute, the Commission for agriculture in Rodrigues island and discussed with the officer of the NDA.

ALIGNMENT WITH GCF PRIORITIES

Project focus

Adaptation Mitigation

GCF results areas¹

Mitigation:

Forestry and land use

Carbon Sinks

Adaptation:

Most vulnerable people and communities

Health, well-being, food and water security

Ecosystem and ecosystem services

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PROJECT RATIONALE

Climate change challenges

For adaptation

The effects of climate change in Mauritius has been observed through the occurrence of unprecedented weather extremes. Warming of the atmosphere has impacted the hydrologic cycle over the southwest Indian Ocean. Long-term time series of rainfall amount over the past century (1905 to 2007) show a decreasing trend in annual rainfall over Mauritius. In fact the average rate of decrease per decade is around 57 mm. The total decrease during the last ten years is about 8% when compared to the 1950s (Source Meteorological services).

A lengthening of the intermediate dry season, the transition period between winter and summer, has also been observed. There has also been a shift in the start of the summer rains. The shift in the onset of rains is highly significant as it translates into much pressure on the water sector to meet increasing demands of the agricultural, tourism, industrial and domestic sectors.

Climate and weather in Mauritius have now become unpredictable and traditional forms of agriculture are at present vulnerable to climate change. This has resulted in heavy use of pesticides to maintain productivity and which seems to be concurrently failing amidst unpredictable and extreme weather events. The use of pesticides e.g. 841.84T for 860sqKm of agricultural land (Source: Knoema.com) backlashes on the nutritional quality of the food as well as the toxicological safety of the produce on one hand. On the other hand, despite the use of crop protection chemicals, the production level is still insufficient to meet national demand and Mauritius is a net food importing country (FAOSTAT data and Mauritius National Export Strategy, Agro Processing Sector 2017-2021)

In the event that the current agricultural model is maintained,

- a. Water deficit will lead to soil aridification and loss of fertility*
- b. Already vulnerable farming communities will face increasing loss in productivity*
- c. Nutritional quality of food available will decrease (nutrition and toxicological),*
- d. Cost of food production will increase further*

It is therefore vital for a paradigm shift in agricultural practices in the form of agroforestry models as laid out within the framework of Climate Smart Agriculture (CSA) that would promote site and context specific climate smart crop production, livestock production in association with economically significant woody vegetation.

Mitigating effects of Climate Smart Agriculture

Concurrently the project will also provide mitigating effects to climate change as follows:

- a. Lessen soil erosion through increase in tree cover as well as the effects of flash floods*
- b. Decrease of agricultural emissions*
- c. Increase the carbon sequestration capacity,*
- d. With the right association of trees and crops, leguminous trees will reduce the need for chemical fertilizers, and allelopathic effects of plants would decrease pest occurrence.*

Key figures from the Agriculture, Forestry and Land Use Sector

The AFOLU sector is particularly important as it accounts for carbon sink. CO2 removals increased from 361,000 tons to 367,000 tons during the period 2006 to 2013. Emissions from agricultural activities, mainly as N2O emission, occurred from the use of fertilizers amounted to an average of 83,000 tons CO2eq yearly. Livestock comprising of enteric fermentations and manure management contributed in the emissions of methane. Agriculture practices (soil and livestock) emitted 127,000 tons CO2eq in 2013 compared to 115,000 tons CO2eq in 2006, representing a rise of 10%. (source: Third National Communication for the UNFCCC)

Responses to date

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At present, extreme climate events that have affected the agricultural sector and the related supply chain, the Government has proceeded with monetary compensation schemes and provision of free seeds and fertilizers. Interventions like these allow farmers to start all over again but does not make them less vulnerable to extreme climate events. Instead they enter into a vicious circle of debts and increased use of chemical fertilisers.

Pending gaps & barriers

The responses to climate change are devised to simply compensate or make good the destructive effects of climate change. However, such an approach does not encourage innovation, resilience or mitigation nor it is a financially sustainable model. A paradigm shift is warranted in the agricultural sector. Barriers towards adaptation are mostly due to lack of awareness and technical knowhow in order to encourage resilient agroforestry systems in both small holders and large land holders alike. Thus, there is a large vacuum in the practice of resilient, environmentally sustainable and financially viable production models.

PROJECT DESCRIPTION

Project objective

Overall objective of the project

The overall objective of the project is to transform an estimated 2000Ha of agricultural land from high input agriculture into agroforestry farms within the framework of Climate Smart Agriculture. This will empower vulnerable and marginal landholders to adapt to the climate change effects and run resilient farming models that are both financially viable and environmentally sustainable.

At the end of the project, the farming community will be running resilient agricultural systems, through enhanced knowledge and adoption of climate smart agriculture techniques and entrepreneurship. Capacity building component of the project would also enable farmers to autonomously adapt their farms and promote their creativity in optimizing farm products as well as introduction of new agricultural produce whenever market demands vary in a sustainable fashion and with climate resilient farm characteristics.

The project will enhance food security and nutrition by bringing in, a greater diversity of healthy food with little or no use of chemical fertilizers and pesticides.

The implementation of agroforestry systems within the framework of Climate Smart Agriculture will enhance ecosystem services by increasing the tree cover over the island for carbon sequestration and ecosystem services critical to agriculture.

Project components

The project components would be to:

- a. Raise awareness on agroforestry within the framework of Climate Smart Agriculture, its economic advantages and resilience towards the effects of climate change.*
- b. Produce land suitability maps and propose list of commercially viable crops and model agroforestry farming.*
- c. Gather data in the form of a survey and profiling of farmers.*
- d. Define accompanying measures for farmers to encourage and facilitate towards the transition to agroforestry.*
- e. Support the setting up of several model farms for early adopters of agroforestry.*
- f. Production of a customized agroforestry handbook based on the different climatic zones and land suitability map.*

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- g. Study present supply chains and their optimization potential that will promote agroforestry products and eco labelling as well as fair trade within the context of the UN Sustainable Development Goals.*
- h. Accompany and monitor newly set up farms during their initial implementation period, build capacity among farmers in farm management and innovative entrepreneurship.*
- i. Explore the setting up of an insurance scheme for farms adopting agroforestry.*
- j. Set up a long-term capacity building program with an accredited University in relation to tackling climate change in agroforestry farms and entrepreneurship to ensure long term benefits of the project.*

Institutional set-up

Ministry of Agro Industry and Food Security through the:

- a. Forestry Service*
- b. Food and Agricultural Research and Extension Institute (FAREI)*
- c. Mauritius Cane Industry Authority (MCIA)*
- d. Small Farmers Welfare Fund*

University of Mauritius and University of Technology, Mauritius

Commission for Agriculture, Environment and Forestry, Rodrigues Regional Assembly

Mauritius Chamber of Agriculture

Sustainability

The project activities will allow the Government to better direct future investments based on the land suitability maps and farmers practicing agroforestry. The induction of agroforestry practices into and university curricula will ensure the long-term adoption, practice and innovation of agroforestry within the Republic of Mauritius. The multiple crop production will also stabilize income flow through-out the year along with optimized income creating a win-win for farmers and consumers and will ensure the objectives of optimal farming techniques. The paradigm shift will be therefore in terms of farmers transformed from being vulnerable to resilient, and from being marginalized to being empowered and being independent.

Furthermore, the setting up of an insurance scheme will encourage farmers to further adopt sustainable and climate smart practices knowing that their crops are covered against the vagaries of the changing climate.

ENVIRONMENTAL AND SOCIAL SAFEGUARDS

Does the project involve or have an impact, either directly or indirectly, on indigenous peoples?	<i>Mauritius does not have indigenous people. It is a country of settlers coming from Europe, Asia and Africa and started populating it around the year 1638.</i>
Is the project implemented in or around protected areas of any type?	<i>No. The Project will be implemented within unproductive and intensive agricultural farm areas.</i>
Will the project involve the development of infrastructure?	<i>Minor infrastructures e.g. sheds and water harvesting ponds may be envisaged.</i>

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Does the project involve any other environmental or social risks?

Please specify (if any): No

Sources of information

Due to the Covid 19 lockdown in Mauritius, most data was gathered through the official websites of the different institutions holding critical data worthy of analysis and are as follows:

- a. Koena.com, worldwide data repository, <https://knoema.com/atlas/Mauritius>
- b. Mauritius Meteorological Services, <http://metservice.intnet.mu/>
- c. Ministry of Agro-Industry and Food Security, <http://agriculture.govmu.org/>
- d. Mauritius National Exports Strategy, Agro Processing sector 2017-2021, The International Trade Centre, <http://www.intracen.org/country/mauritius/>
- e. Mrs Rachna Ramsurn, Senior Analyst, Resource Mobilisation Cluster, Development Cooperation Directorate Ministry of Finance and Economic Development, Government of Mauritius
- f. Mr Richard Payandee, Commissioner of Environment, Rodrigues Regional Assembly, Rodrigues
- g. Statistics Mauritius, <http://statsmauritius.govmu.org/>
- h. United Nations Food and Agricultural Organization, <http://www.fao.org/home/en/>
- i. Dr S Ganeshan, CEO, Food and Agricultural Research and Extension Institute, Republic of Mauritius
- j. Mr V Tezoo, Conservator of Forests, Forestry Service, Republic of Mauritius