



# PROJECT IDENTIFICATION FORM (PIF)

**PROJECT TYPE: Full-sized Project**

**TYPE OF TRUST FUND: LDCF**

## PART I: PROJECT IDENTIFICATION

<b>Project Title:</b>	Enhancing adaptive capacity and resilience to climate change in the agriculture sector in Comoros		
<b>Country(ies):</b>	Comoros	<b>GEF Project ID:</b>	4974
<b>GEF Agency(ies):</b>	UNDP	<b>GEF Agency Project ID:</b>	4926
<b>Other Executing Partner(s):</b>	Ministry of Fishing, Environment, Livestock, Industry and Agriculture (MPEEIA)	<b>Submission Date:</b>	May 11, 2012
<b>GEF Focal Area (s):</b>	Climate Change	<b>Project Duration (months):</b>	48
<b>Name of parent programme: For SFM/REDD+</b>		<b>Agency Fee (\$):</b>	899,091

### A. FOCAL AREA STRATEGY FRAMEWORK:

<b>Focal Area Objectives</b>	<b>Expected Outcomes</b>	<b>Expected FA Outputs</b>	<b>Trust Fund</b>	<b>Indicative grant amount (\$)</b>	<b>Indicative co-financing (\$)</b>
<b>Objective 2:</b> Increase adaptive capacity to respond to the impacts of climate change, including variability, at local, national, regional and global level	<b>Outcome 2.2</b> Strengthened adaptive capacity to reduce risks to climate-induced economic losses	<b>Output 2.2.1</b> Adaptive capacity of national and regional centers and networks strengthened to rapidly respond to extreme weather events	LDCF	622,900	4,700,000
	<b>Outcome 2.1</b> Increased knowledge and understanding of climate variability and change-induced risks at country level and in targeted vulnerable areas	<b>Output 2.1.2</b> Systems in place to disseminate timely risk information	LDCF	2,280,000	1,900,000
<b>Objective 3:</b> Promote transfer and adoption of adaptation technology	<b>Outcome 3.1</b> Successful demonstration, deployment, and transfer of relevant adaptation technology in targeted areas	<b>Output 3.1.1</b> Relevant adaptation technology transferred to targeted groups	LDCF	5,660,909	26,724,500

Sub-total		8,563,809	33,324,500
Project management cost		427,100	1,675,500
<b>Total project cost</b>		<b>8,990,909</b>	<b>35,000,000</b>

## B. PROJECT FRAMEWORK

<b>Project Objective:</b> Strengthen the capacities of vulnerable communities to cope with the additional risks posed by climate change and variability on Comorian agro-sylvo-pastoral systems.						
Project Component	Grant type	Expected Outcomes	Expected Outputs	Trust Fund	Indicative Grant Amount (\$)	Indicative co-financing (\$)
<b>Strengthening the adaptive capacity of the agricultural sector institutions</b>	TA	<b>1. Adaptive capacities of institutions mandated to manage the agricultural sector are strengthened to enable them to plan for and respond to climate risks for agriculture.</b>	<b>1.1.</b> Training programme for management of climate risks for Agro-sylvo-pastoral systems is designed and implemented to support the design and implementation of agricultural adaption measures and the mainstreaming of climate changes risks and adaptation options into key development national, sub-national, local and sectoral policies and plans relevant for the agricultural sector <b>1.2.</b> The national, regional and local development plans as well as the key sectoral (agriculture, forestry, livestock) strategies and policies are reviewed and revised to integrate climate risks and incentives to advance adaptation	LDCF	622,900	4,700,000
<b>Production and dissemination of agrometeorological information for informed decision making in the agricultural sector</b>	INV	<b>2. Agro-meteorological and decision support information are packaged into agricultural advisories and disseminated by agricultural extension officers to key stakeholders to promote agricultural resilience to climate change</b>	<b>2.1.</b> Priority weather, including severe weather warnings, and climatic information needs for climate resilient agricultural in the 30 most vulnerable communities are identified and climate monitoring equipment including automated agro-meteorological, weather and hydrological stations installed for monitoring conditions in those communities <b>2.2.</b> A training programme	LDCF	2,280,000	1,900,000

			<p>is developed and implemented for 20 staffs of the Meteorology Division, 10 staff of the Ministry of Agriculture and 10 staff of the Disaster Management division to enable them to use weather forecasts, seasonal forecasts, crop models, satellite and weather station observations, as well as crop and input prices etc. to produce agricultural advisory able to support a climate resilient agricultural sector.</p> <p><b>2.3.</b> A decision support system for agriculture (including Ministries of Agriculture, Disaster management and Meteorology) is designed, institutionalized , and operationalised to combine key information on current agricultural conditions (including satellite monitoring data), climate change forecasts, early warnings of severe weather and cyclones, and agronomic and economic valuations of climate change impacts and adaptation)</p>			
<b>Diffusion of climate resilient agro-sylvo-pastoral technologies in the most vulnerable communities</b>	INV	<b>3. Climate resilient strategies are tested and transferred to strengthen the climate resilience of agro-sylvo-pastoral systems</b>	<b>3.1.</b> Climate resilient food crop, and fruit farming and livestock breeding technologies, including but not limited to, the use of crop calendars and other relevant climate and weather information, climate resilient inputs, climate resilient land, forest and soil fertility management strategies are identified and disseminated through the implementation of training package for 3,000 farmers from the 30 most vulnerable communities in	LDCF	5,660,909	26,724,500

			<p>Comoros.</p> <p><b>3.2.</b> Low-costs community infrastructures to fight against climate induced erosion (terracing, rain water control, wind breaks and other forms of erosion control), to collect and distribute rain waters in order to prevent climate induced irrigation water shortage in dry seasons, and resilient irrigation systems are built and maintained in the most vulnerable communities</p> <p><b>3.3.</b> A climate resilient agriculture advisory support group, made up of the extension staffs of the agriculture advisory centers (CEAs) and trainers trained as a result of output 3.2 is established and operationalized (through the provision of functioning resources and equipments ), to provide climate resilient agricultural advisory support to farmers.</p> <p><b>3.4.</b> A sustainable climate resilient agricultural inputs delivery system built on a win-win partnership between inputs supply companies and strengthened rural retailers ( trained in resilient inputs usage and handling, knowledge and crop husbandry practices and business and financial management) is established in the Comoros to allow farmers to access to the right inputs, in appropriate quality, quantity and in packaging tailored to smallholders needs and resources</p> <p><b>3.5.</b> A public private</p>			
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		partnership aiming to encourage and enable the combination of public and private sector contribution in the provision of institutional, financial and technical support to promote the integration of climate risks and adaptation options and sustainably advance climate resilience of the ylang-ylang and cloves value chain.			
		<b>3.6.</b> Innovative financial products to finance farmers to make climate change adaptation investments and resilient alternative income generating activities (IGAs) are developed by the Meck and Sanduk Microfinance Institutions Networks			
Sub-total				8,563,809	33,324,500
Project management cost				427,100	1,675,500
<b>Total project costs</b>				<b>8,990,909</b>	<b>35,000,000</b>

**C. INDIATIVE CO-FINANCING FOR THE PROJECT BY SOURCE AND BY NAME IF AVAILABLE, (\$)**

Sources of Co-financing	Name of Co-financier	Type of Co-financing	Amount (\$)
National Government	Government of Comoros	In-kind	500,000
National Government	Government of Comoros	Grant	8,400,000
Bilateral cooperation	Government of Iran	Grant	4,700,000
Bilateral cooperation	Qatar Emirate	Grant	11,800,000
Bilateral cooperation	Arab Committee	Grant	5,200,000
GEF Agency	UNDP	Grant	3,900,000
GEF Agency	UNDP	In-kind	500,000
CSO			
<b>Total Co-financing</b>			<b>35,000,000</b>

**PART II: PROJECT JUSTIFICATION**

**A. DESCRIPTION OF THE CONSISTENCY OF THE PROJECT WITH:**

**A.1.1 THE GEF FOCAL AREA STRATEGIES:**

This PIF was formulated in compliance with LDCF guidelines and aligned with the updated Results-Based Management Framework for the LDCF and SCCF (GEF/LDCF.SCCF.9/Inf.4, October 20, 2010). The project is in line with LDCF/SCCF focal area Objective 2 to “Increase adaptive capacity to respond to the impacts of climate change, including variability” and Objective 3 to “Promote transfer and adoption of adaptation technology”. The link to related expected outcomes in the LDCF/SCCF Result Based Management Framework include “strengthened adaptive capacity to reduce risks to climate-induced economic losses”, “increased knowledge and understanding of climate variability and change-induced risks at country level and in targeted vulnerable areas” as well as “successful demonstration, deployment, and transfer of relevant adaptation technology in targeted areas”.

### **A.1.2 FOR PROJECTS FUNDED FROM LDCF/SCCF: THE LDCF/SCCF ELIGIBILITY CRITERIA AND PRIORITIES:**

The Union of Comoros has signed and ratified the United Nations Framework Convention on Climate Change (UNFCCC) in June 1992 and October 1994 respectively. Consistent with LDCF GEF/C.28/18, May 12, 2006, the Government of the Comoros seeks LDCF funding for a Full-Sized Project to implement a priority project identified in its National Adaptation Programme of Action (NAPA, submitted to UNFCCC in November 2006). Specifically, LDCF resources will be used to enhance the adaptive capacities of the agriculture sector to climate change and variability. The proposed project is also aligned with Comoros' First National Communication (completed in April 2003) including important proposed response strategies such as building technical and institutional capacity, and promoting the adoption of climate resilient technologies in order to advance food security.

The project will implement priority interventions identified in the Comoros NAPA, specifically priorities 1, 4, and 6, and it satisfies criteria outlined in UNFCCC Decision 7/CP.7 and GEF/C.28/18. It will address urgent and immediate climate change adaptation needs and build upon a number of baseline development initiatives that are financed by domestic, bilateral and other multilateral sources. It will contribute to integrating climate change risk considerations and appropriate adaptation measures into the policies and strategies concerning food security including the transfer of necessary technologies to support resilience of communities. The project focus is therefore aligned with the scope of expected interventions as articulated in the LDCF programming paper and decision 5/CP.9.

### **A.2. NATIONAL STRATEGIES AND PLANS OR REPORTS AND ASSESSMENTS UNDER RELEVANT CONVENTIONS:**

Comoros completed its NAPA in 2006. The NAPA identified and ranked six (6) priority sectors, of which food security and terrestrial ecosystems related priorities, which this project will deal with, ranked first and fourth, respectively:

- Food security: the project will contribute to strengthen the climate resilience of the Comorian agriculture sector by enhancing the adaptive capacities of the institutions and individuals involved in the development of the agricultural sector including the farming communities and support the development, demonstration and transfer to communities of climate resilient agriculture strategies including the use of agro-meteorological tools, climate resilient inputs and climate resilient agriculture technologies. It will, therefore, contribute to improve the conditions of production and valorization of food crops in Comoros, and thus contribute to food and nutritional security of Comorian populations.
- Terrestrial ecosystems: the LDCF aims also at protecting agriculture ecosystems against climate changes and variability impacts in order to increase the climate resilience of agricultural systems in Comoros. For this purpose, the LDCF will support the design, development and maintenance of low-costs measures to fight against land water erosion and mudslides and sustainable land, forest and soil fertility management strategies.

The priority adaptation options and measures proposed by the Comoros NAPA take into account Comoros' PAN/LCD strategies, particularly those related to livelihood production in agricultural communities including the ones related to the protection of natural resources and the environment. Moreover, adaptation options are chosen in synergy with the Convention to Combat Desertification (UNCCD) and the Convention on Biological Diversity (CBD) country-related objectives as embodied in the National Strategy and Action Plan on Biological Diversity and the National Action Plan to Combat Desertification (PAN/LCD).

## **B. PROJECT OVERVIEW:**

## **B.1. DESCRIBE THE BASELINE PROJECT AND THE PROBLEM THAT IT SEEKS TO ADDRESS:**

### **The problem and how it is driven by climate change**

The agricultural sector is the foundation of the Comorian economy. It contributes nearly 44.7% to GDP and export crops generate over 90% of export earnings (DTIS, 2007). Export crops include vanilla which represents 6% of the world market, ylang-ylang (70 to 80% of world demand) and cloves. Food crops account for about 47% of the added value of the agricultural sector (including livestock). Agriculture, particularly Ylang-Ylang, cloves and vanilla, employs 80% of the Comorian workforce (Comoros Economic Outlook, 2011). Despite the crucial role of agriculture in the economy and for employment, the domestic agricultural sector is struggling to provide the food needs of the population. Local food production in the Comoros covers only 49% of consumed food. Food security indicators generated by the FAO (FAO, Comoros profile, food insecurity indicators) reveal for the 2006-2008 period: (i) inadequate national dietary energy supply of 1,840 kcal / person / day against a normal dietary energy requirement of 2,200 kcal / person / day; (ii) 47% of the population is undernourished; (iii) a low protein intake of 44.3 g / person / day.

Comoros imports 95% of its rice consumption (which is the main staple). However, with export revenues that depend mostly on ylang-ylang, cloves and vanilla, the production and price of which decline from year to year, Comoros is in a highly vulnerable economic situation. From 2002 to 2010, Comorian exports have decreased from 7.8% of GDP to 1.9%, while imports have increased from 21.3% to 29.2% (Comoros Economic Outlook, 2011). The result of weak agricultural production has increased rates of poverty in rural agricultural communities.

The poor performance of the agricultural sector is explained by several factors including:

- Land degradation: An estimated 57.5% of arable land, representing 42% of the total land area of the Comoros, is degraded by 50%, 65% and 52%, respectively, in Grande Comore, Anjouan and Moheli (PANA, 2006). The root causes of land degradation in the Comoros are linked to unsuitable crop management practices (28.3%), uncontrolled deforestation (28.3%), natural causes related to the terrain, soil type (17%), soil management practices (13.2%), overexploitation of vegetation (9.3%) and climate induced factors such as increased precipitation intensity (Ndiaye, 2011). Many of these causes are inter-related and compounded by poor agricultural practices such as slash and burn agriculture, infrequent use of chemical and organic fertilizers, poor management of soil microbiological activity and chemical composition (loss of nutrients, salinization and acidification), resulting in a loss of soil fertility. To compensate for this decline in the fertility of agricultural soils, farmers in Comoros tend to clear forests for new virgin and more fertile land. The land tenure system, inadequate legislation, resources and technical support constraints, combined with population pressures and increased incidence of poverty have long promoted the conversion of forests to agriculture lands and the exploitation of timber for commercial purposes. Producers cut timber and in the clearings plant taro, banana, pepper, sweet potato, fruit trees, litchi, etc. This leads to a reduction in vegetation cover which has been accompanied by loss of species habitat and biodiversity. Land degradation, combined with climate variability has led to the disappearance of 400 hectares of forest per year. Between 1974 and 1985 the forest decreased from 19,100 to 12,375 ha, an overall reduction of 35% with an annual reduction of 3.1, 1.3 and 6.1% respectively for Grande Comore, Anjouan and Moheli;
- Low technical capacity of farmers coupled with the lack of technical support (due to a weak national extension service), does not support productive agriculture in the Comoros. The disappearance of most management structures and the lack of human and financial resources to provide technical services, led to the abandonment of sustainable management practices such as fallow land and crop rotation;
- Agricultural production continues to be hampered by low level of mechanization and investments: indeed, owing to low farm incomes, weak access to credit, the lack of funding strategy for agriculture, Comoros' farmers cannot make the investments necessary to promote successful farming. For example, the majority of available arable land still requires significant work such as stone removal, fertilizer application, terracing and other erosion control techniques, as well as agricultural tools and

equipment. This situation is made worse by the lack of government investments in agricultural infrastructures like roads, markets, storage and processing facilities, technical support structures and water management infrastructure, to support agricultural productivity.

Moreover, this weak agricultural baseline is exacerbated by climate related stresses. According to the NAPA, average annual temperature increased more than 1.5° C between 1960 and 1996 (with particularly high increases during the months of March, April and May<sup>1</sup>). In addition to an increase in average temperature, rainfall has been erratic after 1976<sup>2</sup>. Heavy rains, increased aridity and loss of vegetation cover have led to soil erosion, development of retreat cracks, and landslides. These factors have contributed towards the increased degradation of more than 65,000 ha of land, approximately 57.5% of total agricultural land. This level of degradation suggests advanced rates of desertification and has forced the penetration of agriculture into forest lands, which in turn are disappearing at a rate of 400 ha per year (4,3% per year).

Vulnerability is compounded by the fact that agriculture remains strictly rain-fed and is significantly impacted by climate induced hazards. Increasingly erratic rainfall, accompanied by shorter and shifted rainy seasons affects the cropping zones and crop calendar. Underutilization of irrigation infrastructure and reliable sources of water for irrigation, renders crops susceptible to drought, and the non-functioning or nonexistent drainage systems, terracing and other forms of erosion control (e.g. wind breaks) increase the vulnerability of crops to increasingly heavy rains and high winds. Moreover, between 1967 and 1986, the country was hit by 13 cyclonic events, an average of one cyclone per year, whereas 2004 was marked by violent cyclones in the South West Indian Ocean, which caused extensive damage to infrastructure and loss of life. Whilst there has been a tendency for higher intensity cyclones in this region of the South West Indian Ocean, it is not clear if this is a result of climate change or natural variability<sup>3</sup>.

Other impacts include disturbances of the hydrological cycle with drying up of rivers and water sources, increased runoff resulting in floods, lowering of the water table and an acceleration of soil erosion. Of the forty permanent rivers that existed on Anjouan in the fifties, only a dozen remain now, most of which dry up during the dry season. These impacts effect fertility reduction, forest degradation, reduced agricultural yields and increased deficits in national food supply relative to domestic food demand.

Future climate projections predict disruptions of climate that will undoubtedly worsen Comorian agriculture if measures to reduce its vulnerability to climate are not taken. Whilst projections of climate change depend on the scenarios and models used, some risks are likely to increase regardless of the chosen scenario:

- Temperatures will continue to increase by 0.8 ° C to 2.1 ° C in all seasons by 2060;
- Hot days (which currently happen 10% of the time) will occur from 30 to 61% of the time in 2060. Increases will be higher during December-February. Hot nights will increase in frequency by a similar amount. The frequency of cold days and nights will decrease;
- Although there is more uncertainty in projections of rainfall, there is a tendency to predict reduced rainfall during the period from June to November and an increase in rainfall during the period from December through February. The intensity of rainfall (1 to 5 consecutive days of rain) is likely to increase, particularly during the period from December to May;
- Changes in the frequency and paths of tropical cyclones are very uncertain but given the current understanding and assessment of the phenomenon, an increase in intensity is generally more likely.

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<sup>1</sup> <http://country-profiles.geog.ox.ac.uk>

<sup>2</sup> NAPA, 2006

<sup>3</sup> INGC. 2009. Synthesis report. INGC Climate Change Report: Study on the impact of climate change on disaster risk in Mozambique. [van Logchem B and Brito R (ed.)]. INGC, Mozambique.



Given the inability of global models to accurately capture cyclones, their contribution to increases in the intensity of rainfall may currently be underestimated;

- Estimates of rising sea levels vary, but recent estimates suggest an increase of about 34cm by 2050, which could lead to damages of US\$ 6.4 million per year according to an assumed A1B scenario.

The most consistent changes observed in both past and projected climate changes (and therefore likely to present immediate and long term climate risks) are: increases in temperature, changes in the seasonality of rainfall and temperature and increases in precipitation extremes. Whilst some of these changes in temperature are likely to be widespread across the three main islands, changes in rainfall may be more localized and, for example, depend on altitude and orientation with respect to the monsoonal winds. One key need is therefore to understand how these general changes in climate may be refined and used for defining specific risks for agriculture under the varied geographical and socio-economic situations found across the islands of the Comoros.

### **The underlying causes of Comorian agriculture vulnerability to climate change and variability**

*Land and forest regulations are inadequate* in the context of the challenges posed by climate change and cannot prevent practices of shifting and slash-and-burn cultivation, which contributes to land degradation. Land in Comoros is mainly governed by laws introduced more than 25 years ago concerning deforestation, reforestation and forest management. These laws, which especially target the ban of logging, have resulted in an increase of illegal deforestation. It has not met the challenge of reconciling the colonial, Islamic and customary systems of land tenure that currently regulate Comorian lands. Thus, the existing law corpus regarding forest is inappropriate and not enforced. Thus, various measures are not implemented to regulate and organize the sustainable access and use of forest resources. Instead, there is uncontrolled use and frequent invasion of natural forests for agricultural purposes, clearing the undergrowth without risk of being punished. Moreover, the majority of decision makers in the forestry sector, population, forest guards and the police ignore all or part of the forestry legislation. Furthermore, the lack of systematic registration of land does not encourage farmers to invest in any improvements or technical innovation because their investment will not be secure given that they do not own the land.

*The weak financial capacity of farmers and poor access to credit:* Comorian farmers experience low profit margins. This is attributed to low agricultural productivity, inefficient storage, transportation and commercialization systems for agricultural products and a high home consumption. Additionally, they have difficulty to access credit due to low density of decentralized financial institutions (the penetration of decentralized financial institutions was only 25% at December 31, 2008). Comorian farmers, therefore, have difficulty securing financial resources that are necessary to develop efficient and economically viable agricultural practices. High-return agriculture would require good quality inputs, availability and options for financing efficient agricultural equipment, undertake good landscaping including measures to prevent soil erosion and slopes, and have an efficient irrigation and drainage systems.

*Lack of efficient agricultural inputs distribution system in rural areas.* The most recent agricultural strategy of the Comoros (adopted in 2001) called for the transfer of state-run activities related to the input distribution (e.g. nutrients, pesticides, seed crops) to the private sector. The Comorian government had opted, through a project for the Support to the Agricultural Inputs Supply Chain (PAFIAC), to encourage the creation of private agricultural inputs supply organizations such as the CAPAC (Centrale d'achat des professionnels agricoles des Comores / Supply Centre for Comorian Professionals of the Agriculture Sector). This organization brought together producer and former agricultural extension workers with the objective of making necessary agricultural inputs available to farmers at all times in sufficient quantity and quality. The CAPAC is currently the main importer and vendor of agriculture inputs. There are currently 20 private stores of inputs sales in Grande Comore, 4 in Anjouan and 5 in Moheli installed by the CAPAC. In the area of livestock, the Comorian Association of Veterinaries (ACTIV) is the main actor

for the commercialization and distribution of veterinary products and livestock inputs. Despite this progress, the input supply system is not always able to provide agriculture and livestock farmers with inputs in quantity and quality needed and at a competitive price that can enable them to ensure productive agriculture. In addition, the private sector is not encouraged to invest in this sector due to low financial capacity of the producers, difficult access to production areas, and the lack of incentive policies (such as exemption from taxes and duties, for example).

*Low awareness of farmers of the negative impacts of their farming practices:* few Comorian farmers are aware that their current farming practices contribute to degradation of natural resources, agricultural lands and ultimately to increase the vulnerability of Comorian agriculture to climate change.

*Poor management of water resources:* as described above, climate change is not expected to result in an overall decline in rainfall, but rather a disruption of rainfall patterns resulting in a shift of seasons and an increase in extreme precipitation. Thus, the development of systems for collecting and storing water during the rainy season and its timely distribution to farmers when needed could reduce the impacts of climate hazards in Comorian agriculture. In addition, it will also contribute to reduction of one of the most crucial problems of agriculture: water erosion.

*High population density* coupled with the islands' limited land area causes inland migration as a result of search for fertile land for agriculture. This often leads to deforestation and soil degradation. Increasing population density places additional pressure on limited natural resources (78% of the population is reliant on fuel wood as a primary source of energy) whilst increasing the demand for land. Heavily utilized soil surrounding villages is commonly degraded, and the remaining functional arable land has also become a source of territorial conflict between communities.

*Low institutional capacity, both in the private and public sectors.* Within government, institutional memory is low due to staff turnover following frequent changes in government and a lack of resources for training and education. Government capacity is low, which does not lend itself to the kind of political push that is necessary to advance the implementation of adaptation priorities. Capacity is often built through various interventions (funded by development agencies) and is then lost due to lack of continual investment in both functional and technical capacities.

*Very little relevant information is available for planning climate resilient agricultural activities and early warnings for severe weather.* Climate forecasts, where they are available, are not used to efficiently plan ahead for expected cropping seasons, or to warn of expected heavy rains, dry spells or cyclones that will affect farm management decisions, e.g. when to plant and what crop/cultivar to plant, the need for additional investments to better protect crops, food stocks, irrigation systems and other agricultural infrastructure against cyclone damages. The current situation with respect to rainfall, soil moisture conditions, temperature and evaporation, winds, probability of cyclones etc., is not monitored effectively. In part, this is due to the absence of a dense enough weather station network that lends itself to credible information being generated and the difficult to access and utilize relevant satellite imagery. Moreover, this information is not used with suitable crop and economic models to explore effective and benefit maximising farm management decisions. Furthermore, this information is not combined with other relevant information for farm management decisions, including current and future fertiliser and seed prices, or the current and expected market prices of crops (both domestically and internationally).

Relevant information for improved decision-making is further not packaged into advisories suitable for agricultural extension officers to discuss with farmers and inform farm-level decision-making. In terms of future climate change, there are currently no scenarios for Comorian agriculture that can be used to effectively plan for future adaptation to expected risks. Neither downscaled or sensitivity based analyses

of climate from scenarios produced by different climate models, nor economic valuation of the net-benefits of alternative adaptation options are used in the decision-making process.

### **Long-term solution and barriers to achieving it:**

An ideal solution, in the context of climate change and variability is that decision makers at all levels understand the impacts of current and anticipated climate risks to agricultural systems and rural livelihoods, as well as have the capacity to plan and respond to those risks. Particularly, the local and decentralized authorities of the most vulnerable areas of the country should have the capacity to identify, develop and implement measures that could efficiently reduce the vulnerability of rural communities and support them to face any negative impacts of climate change. Communities, including households relying on subsistence level food production should also have adequate information and capacities on alternative approaches, technologies and tools needed to strengthen their resilience to climate risks and benefit from incentives to use them. Any solution therefore needs to at least incorporate the following:

- Increasing the capacity of relevant public and private institutions and rural households to understand and plan for climate-related impacts, including available risk management options;
- Making available up to date information on climate, short term forecasts, seasonal forecasts, long-term climate scenarios, environmental monitoring, early warnings of severe weather and cyclones, and other relevant data, all at a suitable spatial scale and packaged in a manner suitable for making on-farm management decisions. This includes adding the necessary infrastructure and building the required core capacity of human resources;
- Developing agricultural extension services that can engage farmers in discussions of current climate hazards, how best to present and package information for decision support, and help develop appropriate advisories given current technology, forecasts and information;
- Testing of different technologies, crops and strategies to build resilience to climate-related hazards. This could include diversification of farm activities and investigating alternative livelihood options.

The Union of Comoros is, however, currently facing several barriers that could prevent the country from achieving this ideal solution. Among these barriers, the following are important:

- Low awareness of decision makers of climate risks and increasing low technical capacity of authorities and officials of key ministries and regional and local governments to incorporate these climate risks and adaptation measures into appropriate policies, strategies, plans, budgets and local development;
- Low technical capacity of community agro-pastoral activities to identify, develop and implement strategies for long-term adaptation to climate change. They lack access to agricultural inputs, plant materials resilient to climate risks and appropriate agricultural extension services that could enable them to address current climate variability and later climate change;
- Stakeholders at all levels do not have access to information on agriculture, forestry and climate which would allow them to incorporate climate risks into their decision-making process. In the context of climate change and variability, it is essential that strategies and agricultural programmes are underpinned by relevant agro-meteorological information, such as cropping calendars, agricultural suitability zones, and agro-hydro-climatic forecasts for different time horizons into the future (incorporating a range of planning horizons for managing agriculture). This requires development of a framework for combining multiple sources of information (climate, environmental, social), the infrastructure to access and combine these data, as well as ways to communicate and update such information based on feedback from farmers and extension officers;
- The lack of a performing inclusive finance system to overcome the low financial capacities of farmers in order to allow them to make the necessary investments for strengthening their adaptive capacity, e.g. afford quality inputs, farms lay-out, anti-erosion, water control and wind-break infrastructures and also diversify their sources of incomes;

- There is little consolidation and dissemination of knowledge and experience of successful models and strategies (including endogenous) for climate risk management.

**B. 2. Incremental /Additional cost reasoning:** describe the incremental (GEF Trust Fund) or additional (LDCF/SCCF) activities requested for GEF/LDCF/SCCF financing and the associated global environmental benefits (GEF Trust Fund) or associated adaptation benefits (LDCF/SCCF) to be delivered by the project:

The project's objective is to strengthen the capacities of vulnerable communities to cope with the additional risks posed by climate change and variability on agro-sylvo-pastoral systems. To do this, the project will work to achieve the following outcomes:

### **Component 1: Strengthening the adaptive capacity of the agricultural sector institutions**

**Outcome1: Adaptive capacities of actors involved in the agricultural sector are strengthened to enable them to plan for and respond to climate risks for agriculture.**

**Baseline:** It is widely accepted that the institutional and technical capacities within the agricultural sector are low and hinder the agricultural sector to be the driving force of the economic growth and the main levy for fighting against poverty and food insecurity in the country. Indeed, the required capacities for the development of policies and regulations to strengthen the productivity of the agricultural sector do not yet exist in the country. Furthermore, the structural adjustment policies and the withdrawal of the state in the agricultural sector, have severely affected the agricultural extension and research capacities. Existing capacities of structures such as the agricultural advisory centers (CEA) or the Comoros National Institute for Research in Agriculture (INRAPE) are limited (insufficient trained human resources, inadequate logistics and equipment, infrastructure, etc). This absence of support structures and advice close to the producers has led to inadequate dissemination of appropriate technologies which are essential to improving food production, as well as a lack of validation and capitalization of many pilot programmes which have been initiated in the country for over 20 years with support from development partners. The Government of Comoros is aware of this situation and, with the support of its partners, has undertaken to implement a number of initiatives to strengthen the institutional and human capacities within the agricultural sector of Comoros. Among these projects we can consider the following:

- a) **The Programme for the renovation of the agricultural institute of Moheli** (Co-financing US\$ 4.7 million)

The government of Comoros is financing the reopening of the agricultural institute of Wanali Moheli to promote an increase of the agricultural technical capacities in the country. For this purpose, the government of Comoros is allocating a budget of US\$4.7 million for the rehabilitation of the institute's infrastructure, the supply of the institute with the required equipment, the updating of the trainers' knowledge and skills and the improvement of the institute training curricula. The institute will be opened to the agriculture and livestock farmers, the agricultural and veterinary technicians (extension staff), the decision makers for the agriculture sector, as well as present an opportunity for young people who have left school without any formal qualification to acquire vocational skills. The training programmes will be organized around the following themes: (i) improved production systems of the main food and commercial crops; (ii) integrated pest management (IPM); (iii) on-farm seed demonstration and multiplication; (iv) nursery development and maintenance; (v) landscapes management and techniques of soil conservation and fertility improvement. For the livestock sector, the agriculture institute will deliver training on the following themes: (i) artificial insemination; (ii) animal reproduction and other health domains such as small surgery, vaccination, deworming; etc, and (iii) livestock feeding. The institute will also offer training programmes on agricultural development policy and strategy development for the high-level and technical staff of the public and private institutions involved in the development of the sector.

The project for the renovation of the agricultural institute has been designed to be the baseline of all the agriculture development initiatives in Comoros. Indeed, the agriculture institute will allow developing within the country the technical capacity necessary for the successful implementation and the durability of the achievement of these initiatives. For this purpose, it will give priority to stakeholders involved and tailor its training according to the needs of the agriculture development initiatives. It will also have the mandate to design and carry out short-term training activities organized by different agriculture development projects. To contribute to the development of the Comorian agriculture, the agricultural training institute must also include in its curriculum, climate risk evaluation and adaptation modules that will provide the Comorian agricultural actors with the adequate capacities to support the agricultural and livestock sectors to face climate changes risks. Indeed, all the training themes identified for the agricultural institute are influenced by climate changes and need, therefore, to be strengthened by climate change knowledge to allow the beneficiaries to integrate climate risks and consider adaptation options.

**Additionality:** Building on the project for the Moheli agricultural institute renovation, and through complementarity with the forest management programme, this outcome will implement climate change capacity development related activities, including the revision of key sectoral strategies and policies to integrate climate risks and incentives into the agricultural sector (including forestry and livestock).

Under **Output 1.1**, a training programme for management of climate risks in Agro-sylvo-pastoral systems will be designed and implemented by the Moheli agricultural institute to support the following objectives: (i) the design and implementation of agricultural adaption measures including those outlined in outputs 3.1 and 3.2 below as well as future initiatives and (ii) the mainstreaming of climate changes risks and adaptation options into current key national, sub-national, local and sectoral policies and plans affecting the agricultural sector. The LDCF financed capacity development components in this project will, for this purpose, integrate into the curricula of the agricultural institute of Moheli, relevant climate change modules that will provide, concerned policy-makers and national- and local-government officials, with the necessary training and knowledge on climate change risks. Furthermore, it will integrate adaptation strategies that they can implement to address climate risks in The Comoros agricultural sector. This knowledge combined with the skills provided by the aforementioned capacity building projects, will capacitate them to design and implement climate resilient policy, national and local development plans and environmentally sound agricultural adaptation measures. The LDCF financed training programme will target: (i) At least 100 high-level policy makers from the Ministry in charge of agriculture, livestock environment, and forestry as well as local authorities for the mainstreaming of climate risks and appropriate adaptation measures in the key sub-national and local development plans, policies and strategies; (ii) At least 100 mid-level officers from the Divisions of agriculture, forestry, natural resource management, and livestock (including extension staff), the NGOs and CBOs for undertaking climate change risk assessment as well as gender sensitive vulnerability assessments for agriculture, livestock and forestry, as well as the design, implementation and monitoring of climate resilient agricultural systems including measures for managing soil fertility, for fighting against soil erosion and slopes, for promoting rain water management, and countering against livestock diseases,; (iii) At least 30 INRAPE staff trained on the design, test and dissemination of climate resilient agriculture technologies planned under the outputs 3.1 and 3.2; and (iv) at least 100 extension staff of the agricultural advisory centres (CEAs) to make them able to train farmers on agriculture adaptation option (to support the implementation of outputs 3.1 and 3.2) and provide farmers with climate change advisory support. To strengthen the sustainability of the achievements of this output, the experience and lessons drawn from the implementation of the activities of this output will be documented, codified, and disseminated to serve as input for the development of a plan for the Moheli agriculture institute to regularly update its capacity to provide climate change adaptation training. Furthermore, this output will help to develop a strategy for the Moheli institute to be a reference training institute for agricultural adaptation for the Indian Ocean Island region. Further details of these sustainability strategies will be elaborated in the project document submitted for CEO endorsement.

Under the **Output 1.2**, national, regional and local development plans as well as the key sectoral (agriculture, forestry, livestock) strategies and policies will be reviewed and revised to integrate climate risks and provisions to address the technical, financial, regulatory, organizational and other constraints to the adoption by the communities of the climate resilient agro-sylvo-pastoral strategies tested and transferred under Outputs 3.1 and 3.2. During the LDCF preparation phase, multiple stakeholder consultations will take place to identify constraints with a special focus on those that could impede women to adopt these technologies. These consultations will be backed by an assessment during the project preparatory phase to identify solutions to address these constraints. The results of this study will support the revision of relevant policies and strategies, to integrate provisions to address these constraints in the context of activities planned under Outcomes (2) and (3), such as training of farmers in climate resilient agricultural strategies, the establishment of sustainable advisory support systems and the development of climate resilient supply chains. The results, experience and knowledge generated from the integration in development policies and strategies of climate change concerns and the solutions to address the constraints to the adoption of tested adaptation technologies will be documented to serve as guidelines.

## **Component 2: Production and dissemination of agrometeorological information for informing decision making in the agricultural sector**

**Outcome 2: Agro-meteorological and decision support information are packaged into agricultural advisories and disseminated by agricultural extension officers to key stakeholders to promote agricultural resilience to climate change**

**Baseline:** The integration of climate and severe weather related disaster risks (including cyclones) into the agricultural development policies and strategies as well as the development of adaptation strategies must be underpinned by relevant climate and weather forecast information. However, there is no decision support system (DSS) or mechanism for coupling the climate risk information with the available social and environmental information to support informed and efficient agriculture policy making and on-farm decisions regarding when to plant, which crops to plant, how much fertilizer/irrigation to apply etc. ***The UNDP (BCPR) project on managing risks related to natural hazards in the Comoros (US\$ 1,000,000)*** focuses on cyclones and tsunamis and in particular: (i) assessment of the capacity needed in the country to manage the natural and climatic (weather) risks and disasters; (ii) set up of a system, at the national and local levels, for managing climate (weather) and natural disasters; (iii) strengthening of the capacity to manage risks related to natural hazards in the Comoros, particularly cyclones and tsunamis; and (iv) developing and implementing community based action plans for the management of damages due to cyclones and tsunamis, including the building of artificial and natural protection and promotion of alternative activities to income generating activities depleting the natural protection to the cyclones.

Unfortunately the National Meteorological Service (ANACM) does not have enough monitoring equipment and trained human capacity to make forecasts, on a daily, seasonal or longer term period. There are currently only 3 functioning synoptic weather stations, which transmit data from airports on each of the 3 islands. In the past there were 12 climatological and 14 pluviometric stations, all of which stopped functioning in the early 1990's and some of which are now being restored to operational capacity (ANACM began this process in 2009). Unfortunately most of these stations are pluviometric (manually operated rainfall-only) stations and have limited functional use for continuous monitoring and early warning systems. They currently receive cyclone forecasts from Reunion and weather forecasts from other regional Meteorological services. Furthermore they are currently not supported by sufficiently trained human capacity to utilize other monitoring information and generate results that are useful for decision-making e.g. satellite observations of rainfall, vegetation and soil moisture. The development of agricultural forecasts using available information, including its translation into meaningful, agriculturally

relevant information, is a critical need. There is therefore clearly a need, beyond the generation of data, to develop an agricultural information system that incorporates up-to-date monitoring information with available climate change and weather forecast information.

In addition, a DSS mechanism that includes computer based systems that spatially integrate multiple sources of information at different timescales and allows flexibility to change the ways in which information is combined based on feedback from the CEAs needs to be put in place. The DSS system will need to be available to farmers as part of their interaction with the CEAs, and also the CEAs need to be able to take the available information from the DSS and package it into advisories that they can transmit to farmers. Such a system needs to be accessible by all partners, including ANACM, INRAPE and COSEP, and build on the expertise of these partners. The UNDP-BCPR project is currently not focused on this type of activity.

**Additionality:** Building mainly on the UNDP-BCPR project related to managing climatic and weather natural hazards risks in the Comoros, LDCF resources will support the identification of the agrometeorological information needed to support climate resilient agricultural production, the installation of the required climate and weather monitoring instruments for the production of information that is needed for planning purposes and the establishment of a mechanism for disseminating the agrometeorological information to relevant end users. The ongoing LDCF project on developing water resources will provide 5-6 new automatic weather stations, focused on providing information for water resource planning. However, ANACM seeks to install at least 6 more automatic weather stations (and 20 agromet stations) to cover agricultural regions (across the different agroecological zones of the 3 islands) not covered by the water resource project. Additionally these agro-meteorological stations would record variables important for community-, farm-level management decisions (including soil moisture, humidity, winds, rainfall and temperature). LDCF resources will be utilized to put in place a mechanism for transmitting data via local GPRS networks (mobile phone networks). In the long term, the data generated, stored and managed (which LDCF resources will also make provision for) can be used to better map the different agroecological zones and develop higher resolution scenarios of climate change for the islands.

Under the **Output 2.1**, priority needs for agricultural information, including severe weather related early warning information, in the 30 most vulnerable communities will be identified and climate monitoring equipment installed in appropriate locations in collaboration with ANACM. Exact locations will be identified during the project preparation phase. This output will include the transfer of higher capacity data processing and storage equipment, satellite data receiving and processing facilities and training in the use of these data for climate change risk management. Furthermore, the technologies will facilitate access to international and regional forecasts on daily to seasonal timescales, as well as training and capacity building to generate Comoros specific forecasts. Through this output, the project will liaise with other projects undertaking related work on early warning systems (including the ones currently under development in Malawi, Tanzania, Zambia and Uganda Ethiopia with UNDP support) to allow the ANACM and Disaster Revision Division to access severe weather and cyclone warnings from other countries and centres. The project preparation will help to identify the most appropriate countries and the type and contents of these partnerships. This will allow them to improve the integration of severe weather related disaster risks in agricultural decision making, as well as at the policy making and farm level. Local technicians will be trained to service and repair equipment and any new stations will be linked to existing communication networks and databases, preferably through mobile phone networks. Quality control procedures will be instigated where necessary and procedures established for making the data available to partner institutions and the DSS established as part of output 2.3.

Under the **Output 2.2**, a capacity building programme will be developed and implemented for at least 20 ANACM staff, 10 staff from the INRAPE and 10 staff from the Disaster Reduction Division to collate, receive, package according to the end users specific needs and disseminate i) agrometeorological

information, ii) early warnings of severe weather produced both locally, regionally and internationally and iii) decision support tools that can support climate and severe weather resilient agricultural practices at the community level. This capacity development programme will include training in the application of methods and tools to analyze the economic impacts of climate change on agriculture, including adaptation options. Training in the development and use of seasonal forecasts will be undertaken as these tools are currently not undertaken by ANACM on an operational basis. The use of weather forecasts for evaluating the potential for floods, cyclones and other severe weather disasters in the near term will also be instigated. Additionally, ANACM and INRAPE will use LDCF resources to develop their capacities to evaluate agricultural impacts using crop models and integrated agroeconomic models drawing on data that is collected, as outlined in output 1.1.

**Output 2.3** will support the establishment of a decision support system (DSS) to enhance the capacity of ANACM and INRAPE to produce agro-meteorological forecasts at the daily and seasonal timescales and to enhance the capacity of COSEP and INRAPE to utilise agro-meteorological and weather forecasts for early warning, planning and dissemination processes in the agricultural sector (including extension services). The DSS will include computer equipment and software to allow the spatial combination of multiple sources of data including: climate monitoring data from weather stations, seasonal climate forecasts, weather forecasts, climate change projections, crop model simulations, satellite monitoring images (vegetation, soil moisture, rainfall), environmental databases on agriculture (soils, farming systems, land use, rivers etc), infrastructure (roads, bridges), water availability and other information related to the vulnerability of agricultural systems to climate hazards (market centres, prices of inputs etc). Furthermore, the DSS, through internal and external partnerships, will receive extreme weather information, package this information into appropriate early warnings and disseminate these to farmers and decision makers at the national, regional and local level to improve prevention and management of the negative impacts of climate and weather related disasters like cyclones and floods. The computer DSS will be available to all partners (including the climate resilient advisory support group established under the output 3.3 below) and will be used as a tool to understand which information is useful to farmers and how it should be interpreted, to explore effective and net-benefit maximising farm management decisions, to support economic valuation of the net-benefits of alternative adaptation options. It will also provide data and images to be used in the agricultural advisories.

### **Component 3: Diffusion of climate resilient agro-sylvo-pastoral technologies in the most vulnerable communities**

#### **Outcome 3: Climate resilient strategies are tested and transferred to strengthen the climate resilience of agro-sylvo-pastoral systems**

**Baseline:** The under performance of the agricultural sector is compounded by many factors among which are the lack of agricultural technical capacity, the absence of agricultural advisory support, the weak development of agricultural value chains, and the weakness of the farmers financial capacities to make the appropriate investment to boost productivity. To address these limiting factors, the Government of Comoros has programmed a certain number of initiatives aiming to develop and disseminate new agricultural, livestock and forestry technologies to farmers and to increase their access to sustainable financial services that will allow them to make productive investments. Among these projects we can identify the following:

a) ***The FAO- Islamic Development Bank (IDB) supported project for the intensification, diversification and improvement of agricultural production*** (co-financing US\$1.4 million)

The objective of this 3-year project (June 2011-June 2014) is to contribute to the improvement of production and development of food crops on the island of Moheli, and thus contribute to food and nutritional security of Comorian populations. For this purpose, the project supports: (i) the establishment



of a network of operational agricultural advisory-support and service centres (through the strengthening of the current agricultural advisory centers - CEAs) to support the rural stakeholders on Moheli; (ii) the promotion of innovative and reproducible approaches contributing to improved management of soil fertility, to stop soil degradation, to limit post-harvest losses, to favor a better commercialization of agricultural products and secure agricultural production and (iii) the sustainable strengthening of smallholders' capacities and the intensification, diversification and development of food crops and horticulture. This IDB-FAO supported project aims at addressing the challenges that Comorian smallholders face to increase agricultural production, enhance the productive potential, and strengthen their livelihoods. These difficulties which include inefficient and natural resources depleting production systems, weak technical knowledge, lack of advisory support, inefficient processing, storage and commercialization facilities, very important post-harvest losses, prevent them to take full advantage of favorable conditions for agricultural production and diversification of sources of revenue.

***b) FAO - IFAD - UNIDO - UNDP supported project for the Agricultural Value Chain and Agro-processing Development Programme for the Union of Comoros (co-financing US\$7 million)***

This 4-year programme (2013-2016), funded up to US\$7 million, aims at developing agro-processing and value chain for the Comoros. The commodities to be targeted will be determined through a value chain and agro-processing study that will be commissioned by the four agencies and will include the ylang-ylang and cloves. Special emphasis will be placed on building productive and local trade capacity along the value chain. Selected cooperatives and micro and small enterprises in the Comoros will be assisted in the organization and upgrading of their production capabilities and in exporting to other markets, particularly regional markets (Maore-Mayotte, Mauritius, Réunion, Indian Ocean Community (IOC), SADC, COMESA, EU). The focus will be to enhance agricultural sectoral competitiveness, promote technology transfer and diffusion and ensure increased added value at each segment of the value chain, with a view to increase price capture for the rural poor as well as to contribute to building a sustainable agro-business industry. The project will support also the establishment of commodities platforms to facilitate efficient dialogue and collaboration among the stakeholders of the agricultural product value chain, in order to achieve: (i) the institutionalization of sustainable production practices; (ii) the development and enforcement of supporting policy and (iii) the strengthening of national institutions with the mandate for providing long-term assistance to the commodity production. The platforms will build on the umbrella association "Maison des Epices" which groups producers, food processors and exporters associations of the private sector for key exports crops notably ylang-ylang, cloves and vanilla that are critical for the Comorian economy and smallholder livelihoods. .

***c) Islamic Development Bank - Qatar Emirate supported project for the Development of fruit farming in Comoros (Co-financing: US\$5.9 million)***

The micro climates and the volcanic soils in Comoros are favorable for diversified and productive fruit trees farming. The fruit production has the advantage to be an off-season farming and could be a real profitable and niche in the international market of fruits. However, the fruit production in Comoros remains marginal and is, more often, under the form of fruit trees scattered within the agricultural plots. They are planted and abandoned without any maintenance. And they are no real orchards in the country. To exploit a natural comparative advantage that has to date not been capitalized upon, the Government of Comoros, with the support of the Islamic Development Bank and the Qatar Emirate, has undertaken to develop mangoes, litchi, avocado, citrus fruits and the annonaceae farming within the country in order to increase production and meet both domestic demand for these fruits and export demand for derived products (syrup, juice, jam). To achieve this objective, a 3-years project (2013-2015) aims at: (i) improving the local production through the introduction and dissemination of improved and new varieties; (ii) improving the technical knowledge of farmers through the dissemination of techniques of vegetative reproduction and at term the development of in vitro techniques and the diversification of in vitro plants in the in-vitro laboratory existing in the country; and (iii) support financially and technically the establishment of private orchards

**d) *Agriculture intensification and strengthening of the rural hydraulic*** (Co-financing: US\$5.2 million)

The agriculture census in Comoros has revealed that proper mapping of hydrology that can in turn be used to guide decision making for the control and management of the enormous quantities of rainwaters falling each year in the country is non-existent. Indeed, if the average rainfall in the country is 2000 mm and 1700 mm for Grande Comore and Moheli and Anjouan respectively, it is not well distributed in the space and the time. Thus, the requested quantity of waters necessary for food crops and horticulture intensification is not available everywhere and every time. To remedy this situation, the Government of Comoros with the financial and technical supports from the UNDP, French Development Agency (AFD) and the IFAD has undertaken to develop the hydraulic system and an irrigation system in rural areas. The objectives of this 3-year (2012-2015) project are to: (i) develop water storage systems in order to regularly supply the irrigated perimeters with enough water for a productive agriculture; (ii) disseminate efficient irrigation techniques within the farmers communities; (iii) intensify food crop and horticulture agriculture through the development of irrigation systems, and (iv) promote off-season agriculture. This project aims, among other things, to support the initiatives of the Government of Comoros to develop agriculture, notably the project for the development of the fruit farming, the FAO - IFAD - UNIDO - UNDP supported project for the Agricultural Value Chain and Agro-processing Development Programme, by making available for the farmers communities during all the year the quantity of water they need for a productive agriculture.

**e) *Development of goat breeding in Moheli*** (Co-financing US\$5.9 million)

Livestock is considered by the majority of Comorian as a secondary activity to agricultural production. The bred animals are in majority ruminants: cattle, goats, muttons and poultry. The Comorian livestock has produced in 2007 only 570 tons of beef meat, 306 tons of lamb/goat meat and 173 tons of poultry which is far below the meat domestic demand in Comoros, the gap being imported. To reduce the burden of meat import in the Comorian economy and contribute to increase food security in Comoros, the Government of Comoros, with the support of the Islamic Development Bank and the Qatar Emirate, aims to significantly increase goat livestock production in the country. To achieve this objective, the project will support: (i) the improvement of the local goat species and in particular the popularization of the Boer goat species; (ii) increase in fodder production; (iii) increase the breeders capacities in improved breeding techniques; and (iv) the improvement of the veterinary and sanitary control systems in the country.

**f) *UNCDF-UNDP supported project: Support programme for inclusive finance in the Comoros (PAFIC)***. (Co-financing: US\$2.5 million)

This 4-year project (2009-2013) funded for an amount of US\$2.5 million aims at contributing to the establishment of an enabling environment to increase access to sustainable financial services in a professional and secured framework for the poor and low income populations. . The strategy relies on supporting the process of financial inclusion through capacity building and consolidation of microfinance institutions (MFIs). In parallel, the institutional sector will be strengthened by facilitating a participatory process involving all stakeholders to provide the sector with a policy framework through the adoption of a Master Plan for an Inclusive Financial Sector in the Comoros. During the first two years, the programme has focused on direct support to MFIs and the development of financial infrastructure for the professionalization of the sector. The key intervention areas of the project are:

- At the micro level: support for the consolidation of MECK and Sanduk networks, and the development of a viable and sustainable supply of financial services of quality by professional MFIs
- At the meso level: supporting the development of an appropriate financial infrastructure contributing to the professionalization of the sector;
- At the macro level: support to the participatory process of developing a Master Plan of Inclusive Financial Sector (PDSFI) and the development of partnership for its implementation.

The ultimate objective of the PAFIC is to promote the access of people excluded from traditional financial services in particular micro-entrepreneurs, low income households and women, environment and natural resource protection stakeholders of to varied and perennial microfinance services thanks to viable and professional Micro-Finance Institutions, improving their integration in the domestic financial market.

**Additionality:** With the current and forecasted risks related to climate change and variability in Comoros, it is critical that climate resilient strategies be transferred to agricultural communities in order to allow them to cope with these climatic risks and promote the achievement of the objectives of the initiatives undertaken or programming by the Government of Comoros to enhance the productive capacity and the livelihoods of the farmers. Indeed, the Comorian farmers face to numerous climatic risks which contribute to increase soil erosion and fertility decrease, water deficits, disruptions in agricultural calendars, crop destructions and post-harvest losses and, thus, greatly undermine the productive capacity of the Comorian agriculture. The fruit farming has recently experienced problems highlighting its vulnerability to climate change. Indeed, the fruit trees have suffered from early trees flowering, delay in maturation due to the prolonged droughts, shifted rainy seasons and high temperatures. Additionally, the appearance of new diseases such as coconut aleurodidae (*Aleurotrachelus atratus*) and cercosporiosis (*cercospora fijiensis*) has been linked to the climate disturbances according to the NAPA. These diseases have led to important losses in fruit production, reduction of income and an increase of food insecurity. Furthermore, according to the NAPA, the displacement of climate zones threatens the suitability of the farming of certain fruit in their traditional areas. It is therefore necessary to take in account these climate risks in the implementation of the fruit farming development project if the Comoros want to achieve the objective of increasing the national production of fruits and meet the domestic demand for the fruits and their derived products (syrup, juice, jam) and also strengthen the livelihoods of fruit value chain actors above all the fruit growing smallholders. The climate vulnerability of livestock production and breeders families in Comoros is related to the reduction of the quantity and quality of fodder production, the proliferation and the emergence of new animal health diseases. The NAPA states that early and prolonged droughts in Comoros has led to the reduction of pasture, through the drying out of grasses, accelerated soils degradation and led to the diminution of the quantity and the quality of fodder as well as to changes in geographic distribution of a certain number of fodder species. This will in return lead to an accentuation of competition among livestock breeders themselves and between this later and the agriculture farmers. Additionally, the reduction of water resources due to the drying up of watercourses in the three (3) islands has reduced the drinking possibilities for livestock: most of the time, banana trees are chopped to water cattle (NAPA, 2006). This leads to under nourishment and a high sensitivity to parasites and epidemics such as “theileriosis”, which decimated 20% of bovines in Grand-Comoros, thus decreasing them from 55,000 heads in 2002 to 45,000 in 2003. This situation particularly affects goat breeding which constitutes the main source of income for the peasants and makes more and more difficult the access to meat, particularly for the poorest. These vulnerabilities need to be addressed by increasing farmers’ adaptive capacities if the Comoros wants to sustainably improve the condition of production and valorization of food crops and thus contribute to food and nutritional security of Comorian populations.

Through the **output 3.1**, LDCF resources will support the diffusion and sustainable adoption of climate and extreme weather related disaster resilient agriculture, fruit (such as mangoes, litchi, avocado, citrus fruits and the annonaceae) farming, fodder production and goat breeding technologies to 3,000 farmers (among which 32%<sup>4</sup> will be women) in 30 of the most vulnerable communities in Comoros. These technologies will also be supported by water-saving irrigation techniques, climate resilient land, forest and soil fertility management strategies. The technologies will be designed by the Comoros National Institute for Research in Agriculture and Fishing (INRAPE in partnership with relevant international research centers and the full participation of communities. LDCF resources will be used to also roll out a training module for end users of the technologies through existing extension services (a training of

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<sup>4</sup> This represent the ratio of women in the agricultural population

trainers approach will be adopted for the roll out of the efforts to train farmers). The training materials will be designed and developed in a way to facilitate their update when it will be deemed necessary and facilitate its use by other projects and programmes beyond the scope and the life of this project. For this purpose, this output will support the agriculture institute of Moheli and the INRAPE to jointly develop the necessary infrastructure to store and disseminate relevant training materials and lessons learned.

Through **Output 3.2**, the LDCF will support the design, the implementation and the maintenance of low-cost community infrastructures to counter climate-induced soil erosion. Activities include terracing, strengthening drainage systems, rain water control, landscaping, wind breaks and other forms of erosion control. Additionally, low-cost infrastructures to collect and distribute rain waters to counter periods of water shortage, and develop water saving irrigation systems in the most vulnerable communities will be built. Furthermore, this output will support the integration of climate and weather information (rain forecast, evapotranspiration, humidity, cyclones) in the use and management of irrigation systems (quantities of water to be used, when to use the irrigation systems,) in order to promote efficient use of water resources. Additionally, these infrastructures will be designed and built to resist damage from likely hazards such as storms, cyclones and other climate disasters.

The **Output 3.3** will support the establishment and the functioning of a climate resilient advisory support group to provide to farmers climate resilient agricultural advisory support and other advisory support to prevent and manage the negative impacts of extreme weather related disasters like cyclones and floods. The IDB-FAO project will facilitate the creation of a network of operational agricultural advisory-support and services centres (through the strengthening of the current agricultural advisory centers - CEAs) to support rural stakeholders on Moheli. LDCF resources will contribute to develop climate change advisory capacity within the CEAs of Moheli. For the other Islands, the climate resilient advisory groups will be made up of the trainers trained as a result of output 3.2 including extension staff. This output will also develop and implement a plan that will allow for the maintenance of the advisory group services beyond the project life. This strategy will assess the feasibility of a public-private partnership for the generation and delivery of critical advisory services.

Under the **Output 3.4** climate resilient agricultural inputs will be made available through the CAPAC (Centrale d'achat des professionnels agricoles des Comores / Supply Centre for Comorian Professionals of the Agriculture Sector) and the existing Village level input distributors. There are ongoing project that are developing the supply chains for delivering inputs to improve farm level productivity. LDCF funds will be used to ensure that these supply chains also distribute climate resilient agricultural inputs (crop seeds and livestock species) that will help farmers to practice climate resilient farming. This output will build the ongoing baseline projects that are seeking to develop agricultural value chains, development of fruit farming and development of goat farming. Win-win partnerships between the CAPAC and rural retailers (who will also be trained in the usage and handling of resilient inputs, knowledge and crop husbandry practices and business and financial management) will be established. Policies will be developed and introduced that will incentivize the private provision of most appropriate inputs that can support climate resilient practices, in appropriate quality, quantity and tailored to smallholders' needs and resources. A feasibility analysis will be undertaken in order to identify specific needs for the improvement of the existing supply chain for the delivery of climate resilient inputs. This includes identifying changes required in the institutional and regulatory frameworks that currently govern and direct the adoption of the climate resilient agro-sylvo-pastoral strategies.

**Output 3.5** will help to develop a public private partnership (PPP) to foster private sector engagement in the integration of climate risks and adaptations options in the ylang-ylang and cloves value chains. This will be achieved by technically assisting government to design and operationalize a national multi-stakeholder platform that will facilitate dialogue on the climate change and variability concerns for the value chains between the public and private sector. On top of the climate vulnerability shared by all the

Comorian commodities and pointed out in the description of the climate related problem of the agricultural sector, the agriculture value chains in Comoros face other climate related constraints such as climate induced threats to the transport network, climate vulnerable storage and processing constraints that could break the commodity chain and impede the commodity to gain the expected value throughout the chain.. The rapid pace of deforestation of ylang-ylang forests because of the use of ylang-ylang wood as combustible/fuel for distillation stills affects the sustainability of production. Distillation activities require each time the use of 5 m<sup>3</sup> of wood for the production of 2,8 Kilos of oil. Since production is set at 60t of oil, that implies a yearly consumption of 12,000 m<sup>3</sup> of wood. Together with the population's wood consumption and without a sound programme of reforestation, the pace of wood consumption and thus ylang-ylang production is not sustainable in the medium term. Other sustainability issue relate to the permanent decrease in the quality of production and the availability of water in the dry season, as fresh water is needed to operate the capacitor. And when water is not available costs increase It is, therefore, necessary for this project to succeed, to integrate the current and forecasted climatic risks for Comorian agriculture. The LDCF will support this FAO-IFAD-UNIDO-UNDP project to integrate the climate change concerns in its implementation by supporting the inclusion of climate change issues and adaptation in the commodity platforms, the training programmes, the production and use of agrometeorological tools (agricultural, calendars, yield forecast, harvesting period and methods) and climate resilient storage and processing techniques. The goal of the platform will be to identify and align concrete partnership opportunities (based on mutual needs) to address all these issues. Once those needs are identified, measures will be put in place to draw up a PPP that will increase climate resilience of these economically important value chains. The PPP approach will support the collaborative development of a national strategy to strengthen climate resilience of these economically important commodities and create a national implementation plan to programme platform activities that will: (i) develop climate change adaptation measures in conjunction with output 3.1 (the PPP will organize and support the implementation of the output 3.1 in the ylang-ylang and cloves value chains); (ii) create an action plan for policy discussion and data collection to address desired policy change (iii) use a platform approach to build institutional capacity that will effectively support farmers adoption of climate resilience best practices at national scale – the platforms implementation plan will combine and sequence the alignment of public, private, donor and NGO programmes to coordinate institutional capacity building efforts to deliver technical support services to producers. These training activities will be linked to outputs 1.1, 1.2 and 3.2; (iv) the development of market based incentive for the adoption of climate change adaptation measures by value chain actors. The PPP process will drive discussions on the formulation of verifiable climate change adaptation standard(s) that could lead to product premium payments that are based on the supply of high quality sustainably produced product. (v) to verify farmers voluntary adoption of climate change adaptation standards , the platform will create the financial and technical framework to initiate a national monitoring scheme that will undergo 3rd party spot checks.

Under the ***Output 3.6***, the Meck and Sanduk networks will be technically and financially supported to develop innovative financial products for farmers to acquire climate resilient inputs, low-cost land erosion and slopes and water control investments, sustainable climate resilient land and soil fertility management and climate resilient alternative income generating activities (IGAs). For the IGAs, a particular interest will be given to activities aiming to supply climate change adaptation goods and services such as climate resilient inputs, water and land management, extension services, erosion control etc... This output will provide the Meck and Sanduk networks with a climate change adaption start-up fund that will allow their members to provide the farmers with credit facility to finance measures that will help them to increase their climate resilience. This fund will pay a special attention to women farmers' financial needs to strengthen their resilience to climate change. This fund will be managed through the investment committee set up by the PAFIC (Projet d'Appui a la Finance Inclusive) jointly funded by UNDP and UNCDF and which has been operating in Comoros since 2010. Thus, the LDCF project will benefit from the tools, technical capacity and systems already developed by the PAFIC. The fund will be leveraged with other funds from UNCDF and UNDP and their partners. Furthermore, to allow the Meck

and Sanduk network to efficiently manage the funds, this output will also support raising awareness and capacity building of the Meck and Sanduk staff on how to integrate climate risks and adaptation measures in market analysis and business plan development, how to carry out feasibility studies for climate change adaptation options including climate resilient alternative income generating activities, how to develop innovative financial products like climate risks insurance and to match them with the regulations in effect in the country. This activity is additionally aiming to put in place in these MFI networks the capacity and interest that will promote the sustainability of such mechanism.

**B.3. DESCRIBE THE SOCIOECONOMIC BENEFITS TO BE DELIVERED BY THE PROJECT AT THE NATIONAL AND LOCAL LEVELS, INCLUDING CONSIDERATION OF GENDER DIMENSIONS, AND HOW THESE WILL SUPPORT THE ACHIEVEMENT OF GLOBAL ENVIRONMENT BENEFITS. AS A BACKGROUND INFORMATION, READ [Mainstreaming Gender at the GEF](#).**

As a result of the outcome 1 of the project, 370 targeted stakeholders (high-level policy makers, mid-level officers from the ministry of agriculture, the Meteo service, the local authorities, the NGOs/CBOs and the farmers' communities) will have developed skills and capacity on how to mainstream climate changes concerns and adaptation options in the key development policies and plans of the agricultural sector and to design, implement and monitor climate resilient agriculture measures and strategies. This will allow them to support and facilitate the implementation of agricultural adaptation measures that will contribute to strengthen the resilience of agricultural activities and the other related activities through all the main commodities value chain as well as the social assets of the most vulnerable actors involved in these value chains. The project will also demonstrate how the management of the Comorian agricultural sector can be adapted to climate change within a prevailing situation of considerable climatic variability. To ensure the sustainability of these capacities, the project will support the documentation and the codification of the knowledge and lessons drawn from the mainstreaming of climate changes and the implementation of agriculture adaptation measures. These knowledge materials will be shared among the line ministries technical staff, the NGOs involved in the development of the agricultural sector and the Institute of agriculture of Moheli and will benefit to future initiatives and training related to the mainstreaming of climate change in agriculture sector and the development of climate resilient agricultural technologies in Comoros. The adaptation benefits of the outcome 1 of this project include the development of strategies, plans and policies, at the national and local levels, that will sustainably remove the main barriers for the adoption by the communities and the up-scaling of climate resilient agricultural technologies the project will develop. This will directly benefit to the 54,264 farmers (including 17,094 women grower) and their 335,842 dependants and the other actors of the agricultural commodity value chain like the 425 ylang-ylang distillers and their families. These benefits will be supported by the outcome 2 which will provide the decision support information that will allow efficient and informed decision making as well as the policy level than the farmer's level for a climate resilient development of the agricultural sector.

The outcome 3 will result in 3,000 people (among which at least 1,500 women) and their families in agricultural communities being better prepared to becoming more 'resilient' to the emerging long-term risks of climate change. Farmers' communities will be better equipped to manage their environment and make it more resilient to climate change. They will correspondingly be able to apply improved practices with respect to agriculture management, what will be particularly useful in the context of a changing climate. These activities, combined with the agrometeorological tools that will be supported by outcome 2 and the agricultural development strategies, plan and policies that will be improved under the output 3.1, will benefit actors beyond those targeted for capacity building activities notably a big share of the 54,264 Comorian farmers (in which 33% are women), the other actors of the commodity value chains and their dependants. This project will therefore mainstream gender concerns within the context of climate change. The risk and vulnerability assessment that will be done during the project preparation will put a special emphasis on gender disparities and related vulnerability and the special needs in term of financial and

technical capacities, support and organization faced by women active in agricultural sector will be introduced in the design and the implementation of the agriculture adaptation measures and the diversification of rural livelihoods strategies. Thus, during preparatory phase, the project work plans will be formulated to be sensitive to gender and social vulnerability, particularly with regards to Outcome 3 on the identification, test and dissemination of climate resilient agricultural technologies in the rural areas. Information about climate change and adaptation measures will therefore be designed and disseminated in gender-sensitive ways and be combined with explicit efforts to ensure that women and girls – especially those who are poor or have been denied the right to formal education – can easily have access to and absorb the necessary information. The project will ensure that the capacities and skills gained by the women through these activities will be sustained by developing strategies to include them in the informal alphabetisation programmes in rural areas. In consultation with the project proponents and stakeholders who will lead the operational design of this project, indicators will be integrated into the logical framework to ensure that gender dimensions are adequately addressed throughout the implementation phase.

The project benefits also concern the prevention or reduction of the lost tax revenues and the increase of the commercial balance deficit that could be incurred if measures to prevent the decline of the agricultural productivity will not be undertaken. Another major benefit is related to the reduction of the food insecurity in the country. By contributing to the increase of the agricultural productivity and production, the project will promote an increase in the food availability in Comoros and in the cover rate of the national diet by the local production (which is currently only around 49%). Furthermore, the project will contribute to the increase of the incomes of the most vulnerable farmers and the other actors of the commodity value chain, the cash agriculture and the ylang-ylang transformation being the sole source of incomes for many poor people in rural areas.

The project preparation phase will allow a more detailed assessment of these adaptation and socioeconomic benefits of the LDCF and will be outlined in the project document submitted for CEO endorsement.

**B.4. INDICATE RISKS, INCLUDING CLIMATE CHANGE RISKS THAT MIGHT PREVENT THE PROJECT OBJECTIVES FROM BEING ACHIEVED, AND IF POSSIBLE, PROPOSE MEASURES THAT ADDRESS THESE RISKS**

<b>Risk</b>	<b>Level</b>	<b>Mitigation</b>
The Meck and Sanduk MFI capacities to develop appropriate innovative financial products to	Medium	The PAFIC team and investment committee have a strong experience in innovative financial products and will provide the Meck and Sanduk with training in the development of new financial products. This support will be completed by a pool of consultants the PAFIC will put at the disposal of the MFI
Climate risk reducing finance mechanisms increase indebtedness and vulnerability	High	Capacity building and technical support programmes will be designed and implemented by the PAFIC for any innovative financial product intended to finance climate risk reduction that will be introduced. The capacity building will target to improve the capacity of Meck and Sanduk MFI to assess applicants suitability for any climate risks reduction credit facilities and the economic profitability of the climate risks reduction strategies seeking financing.
Meck and Sanduk networks' ability to develop innovative products to finance adaptation can affect their engagement, as they can	Medium	The presence of in-house climate change capacity and knowledge in these microfinance institutions can enable them to assess climate risks, develop and implement adaptation financing products more easily. The output 2.5, with the technical support of the PAFIC, will support the raising awareness about risk climatic and capacity strengthening of Meck and Sanduk staff on the development of appropriate innovative financial products. The presence of a private

Risk	Level	Mitigation
be deterred from incurring upfront expenses even when the overall balance of costs and benefits is positive.		sector partnership with the public sector could also convince the MFI about the relevance and profitability to develop new appropriate products.
Uncertainty of climate impacts can limit companies' incentives to engage and invest in adaptation measures. As companies' investment decisions are based on assessments of costs vs. benefits, they may be reluctant to commit to significant upfront Investments given uncertainties around the extent of the end benefits.	Medium	The institutional context in which companies operate can significantly influence private sector engagement. The existence of a PPP will encourage the requiring policy changes to set up the policy and regulatory environment that can stimulate private sector engagement. The project under the output 1.3 will undertake desired policy changes to include provisions, including market based mechanisms, to address the technical, financial, regulatory, organizational and other constraints for the participation of the private sector in the adoption by the communities of the climate resilient agro-sylvo-pastoral strategies tested and transferred under the Outcomes 2 and 3. Additionally, the project will undertake raising awareness about the climate risks for the private sector in Comoros in order to convince them about the benefits of their engagement in adaptation measures
Political resistance/inertia to adjust 'governance frameworks' (i.e. policies, plans, strategies, programmes etc.).	Low	Stakeholders, in particular decision-makers, the media and advocacy groups will be sensitized by the project. The project development phase included major ministries to be involved in policy changes in this project. Initial training/engagement with high level decision-makers (e.g. Ministry of Finance) to be implemented by the project will emphasize the financial benefits and opportunities available internationally. One of the project's first activities will be raising awareness of decision makers about climate change and the necessity to adjust governance frameworks. Policy matters will be discussed. In output 1.1 and a politically sensitive policy analysis will highlight areas of opportunity for policy influence when policies are being reviewed for the Climate Change Committee to take forward with the Project Team
Frequent political post shifts high in government may hinder policy change	Low	Strong support for the policy changes in key ministries will be generated at the Directorate General level, which has been relatively stable in staffing despite political changes. SEADD is directly linked to the Prime Minister's office and therefore should be able to leverage necessary influence to achieve policy reforms necessary. UNDP is a trusted partner of both government and opposition parties in situations of political and institutional instability in Comoros. UNDP invests significant resources in governance programmes as a critical basis for the country's development.
Cultural barriers in accepting new techniques can be expected from populations and impede the transfer of climate resilient strategies under the outcome 3 .	Medium	The project preparation phase will support multi-stakeholders consultations (including communities) to identify the most appropriate resilient strategies to be tested and developed through this output. Identifying the climate resilient strategies with the communities will contribute to sensitize them about the relevance of these strategies and lead them to accept these strategies. In addition, the project will enter into strategic partnerships at the local level, not just with local government, but in particular with local NGOs and community based organisations. Understanding the local reality and having the project intervention being facilitated by organisations already on the ground will be crucial to overcome cultural barriers. The project's communication and outreach



Risk	Level	Mitigation
		strategy will take this into account. Many of the expected communication products will be adapted to local languages and skill-sets
Natural disaster: Unusual and catastrophic climatic events may happen during project implementation	Medium	Unusually difficult climatic circumstances could threaten the demonstration projects. Although the overall mitigation strategy is to diversify agricultural production and build climate resilient eco-agricultural systems, major natural disasters could hamper the local level demonstrations. As the project intervention is planned over a four years time period annual variations should be accounted for.

**B.5. IDENTIFY KEY STAKEHOLDERS INVOLVED IN THE PROJECT INCLUDING THE PRIVATE SECTOR, CIVIL SOCIETY ORGANIZATIONS, LOCAL AND INDIGENOUS COMMUNITIES, AND THEIR RESPECTIVE ROLES, AS APPLICABLE:**

Stakeholder	Relevant roles
<b>A) Ministries and related agencies</b>	
<b>DNSA</b> ( <i>National direction for agriculture strategy of the MPEEIA</i> )	<ul style="list-style-type: none"> <li>Will assume the role of implementing agency and therefore will be accountable for programme execution.</li> <li>Will be part of the Steering Committee.</li> <li>Will chair the project technical committee (CTP).</li> <li>Will designate a national director for the project within it.</li> <li>The DNSA will host the project management team (allocate appropriate work spaces, including water and electricity).</li> <li>The DNSA will implement project activities and assure the involvement of its representing institutions at the islands level</li> <li>Will ensure the integration and sharing of lessons learned from the project in sharing knowledge networks.</li> </ul>
<b>DGEF</b> ( <i>Direction Générale de l'Environnement et des Forêts</i> )	<ul style="list-style-type: none"> <li>Will be part of the Steering Committee.</li> <li>Will participate in the project monitoring / evaluation.</li> <li>Will ensure the integration and sharing of lessons learned from the programme in networks of knowledge sharing.</li> <li>Will ensure compliance of the project actions with the forestry policy and forestry development four-year action plan</li> </ul>
<b>National Agency of Civil Aviation and Meteorology (ANACM)</b>	<ul style="list-style-type: none"> <li>Will be a member of the PTC.</li> <li>Will be responsible for coordination and implementation of outcome 2 related to meteorological information production and dissemination.</li> <li>Will serve as a resource institution for activities related to meteorology during project implementation phase in relation with the impacts of climatic hazards, dissemination of data of the weather stations.</li> <li>Supervises and provides technical assistance on climate modeling and downscaling of climate information.</li> <li>Will be a recipient of project information and input from the project to incorporate climate change projections into disaster management plans, policies and projects</li> </ul>
<b>Island Direction of Agriculture</b>	<ul style="list-style-type: none"> <li>Will be the Interface between the Island project Technical Unit and authorities of the Autonomous Islands;</li> <li>Participate in the mobilization of in-kind contributions of the Country;</li> <li>Participate in the Island Technical Committee Islander;</li> <li>Will be part of the Project Steering Committee;</li> <li>Will participate in the monitoring of the project activities implemented in the island</li> <li>Will provide first screening and clearance of the monitoring of the project implemented in the islands Is receiving;</li> <li>Will ensure the project coordination with the other initiatives and the integration of lessons learned in the programmes and initiatives across the island.</li> </ul>

<b>Planning, monitoring and evaluation unit of the MPEEIA</b>	<ul style="list-style-type: none"> <li>• The SPSE will coordinate the monitoring and evaluation of the project</li> <li>• Will participate in the development of the monitoring and evaluation strategy and plan</li> <li>• It will be associated in the development of project Implementation Report (PIR) and semi-annual progress reports</li> <li>• Participate in joint missions UNDP / VP MPEEIA monitoring the implementation of programme activities in the development and implementation of the monitoring strategy</li> </ul>
<b>INRAPE</b> (National Institute of Research for agriculture and fishing of the MPEEIA)	<ul style="list-style-type: none"> <li>• Will be part of the Steering Committee.</li> <li>• Will be responsible for the identification and the test of climate resilient agriculture (including livestock and forestry) technologies packages</li> <li>• Will support the Moheli agriculture institute in the design and implementation of a training package on climate resilient agriculture technologies packages</li> <li>• Will ensure the integration of climate change in any research programme on agriculture</li> <li>• Will be responsible for setting strategy, policy and protocol research to develop varieties more resistant to climate change</li> <li>• Work in collaboration with the Moheli agriculture institute for the development of a national platform for sharing knowledge and experiences from the climate change adaptation projects in the agricultural sector, including this project</li> </ul>
<b>B) Unions, communautés, associations, ONGs</b>	
<b>Agricultural Development associations and cooperatives intervening in the project implementation areas</b>	<ul style="list-style-type: none"> <li>• Participate in the selection of three sites at the local and community level</li> <li>• Facilitate the efficient coordination of the project at the national, local and community level</li> <li>• Be responsible for community mobilization</li> <li>• Will share responsibility for supporting and monitoring the project at local and community level</li> </ul>
<b>Maison des Epices (Umbrella association of different producers, transformers and exporters of the different main exports crops)</b>	<ul style="list-style-type: none"> <li>• Will be responsible to set up the ylang-ylang and glove commodity platforms to facilitate efficient dialogue and collaboration among the stakeholders of the agricultural product value chain;</li> <li>• Will be the main animator of the ylang-ylang and glove platform,</li> <li>• Will be responsible for the vanilla and glove value chain actors mobilization</li> </ul>
<b>C) Institutions et Partners</b>	
<b>Moheli Agriculture Institute</b>	<ul style="list-style-type: none"> <li>• Will be part of the Steering Committee.</li> <li>• Will be responsible for the design and implementation of a training package on climate resilient agriculture</li> <li>• Support the INRAPE in the identification and tests of climate resilient agriculture technologies</li> <li>• Participate in the development and review of the policy of the country in research on agricultural development</li> <li>• Work with the INRAPE for the development of a national platform for sharing knowledge and experiences from the climate change adaptation projects in the agricultural sector, including this project</li> </ul>
<b>Agricultural advisory centers (CEAs)</b>	<ul style="list-style-type: none"> <li>• Provides technical supervision of beneficiary farmers;</li> <li>• Technical support and advice for the benefit of the beneficiary communities;</li> <li>• Implementation of training programmes and extension of good agricultural practices to adapt</li> </ul>

## **B.6. OUTLINE THE COORDINATION WITH OTHER RELATED INITIATIVES:**

Coordination and management arrangements will be addressed during the detailed design phase. Based on initial discussions with the Government, the National Direction for Agricultural and Livestock

Strategies (DNSA) of the Ministry of Fishing, Environment, Livestock, Industry and Agriculture (MPEEIA) will provide overall leadership for the project as national implementing partner, in close collaboration with the DGEF (General Direction of Environment and Forests) and the island directions in charge of agriculture of Moheli, Anjouan and Grande Comore. The PMU will be located within the General Secretariat in charge of the Vice Presidency of the MPEEIA.

The national direction for agricultural and livestock strategies (DNSA) will be the lead agency of project for the reopening of the agricultural training institute of Wanali Moheli, which provides the baseline and the main entry point for the component 1 on the strengthening of the adaptive capacity of institutions mandated to manage the agriculture sector. The forestry policy, and the four-year priority action plan for the forestry development within the General Direction of Environment and Forests will provide further entry point for component 1, particularly the proposed output 1.3 for the revision of the local development plans as well as the key sectoral (agriculture, forestry, livestock) strategies and policies to integrate climate risks and provisions to address the technical, financial, regulatory, organizational and other constraints for the adoption by the communities of the climate resilient agro-sylvo-pastoral strategies tested and transferred under the Outcomes 2 and 3.

The National Meteorological Service (ANACM) will likely act as the responsible party for the component 2 on the production and dissemination of agrometeorological information. It will also collaborate with the DNSA for the development of the decision support system for climate informed agriculture decision making and the island agricultural directions of Moheli, Anjouan and Grande Comore for the establishment and functioning of the climate resilient agriculture advisory support group. It will also liaise with the National Directorate of Environment and Forests (DNEF) which is the lead implementing agency for the UNDP/UNEP/GEF supported project for Adapting water resource management in the Comoros to expected climate change. Indeed this project is installing climate and weather equipments to assess and monitor water resource availability and the ANACM will make sure that the selection of project areas of this second UNDP/GEF supported LDCF will take in account these activities of the UNDP/UNEP/GEF supported project.

The DNSA, which is the executing agency of the project for the intensification, diversification and improvement of agricultural production in Comoros, the project for the agricultural value chain and agro-processing development, the project for the development of the fruit farming in Comoros, the project for the development of goat breeding in Moheli and the project for the agriculture intensification and strengthening of the rural hydraulic will be responsible of the outcome 3. It will be supported by the three Island agricultural directions of Moheli, Anjouan and Grande Comore. The DNSA will also ensure coordination with the DNEF, to ensure that the activities of installing community based infrastructures for water control and increase resilience of irrigation will be coordinated with the UNDP/UNEP/GEF supported project for Adapting water resource management in the Comoros to expected climate change.

### **C. DESCRIBE THE GEF AGENCY'S COMPARATIVE ADVANTAGE TO IMPLEMENT THIS PROJECT:**

The comparative advantage of UNDP country office in the Union of Comoros for this project takes its legitimacy in the Country Cooperation Framework 2008-2012, which focus on three priority areas, namely: ( i) poverty reduction and achievement of the MDGs, namely the results domain A1: Promoting inclusive growth, gender equality and the MDGs; (ii) Democratic governance, axed on the result B1: encourage inclusive participation, and B2: promote governance institution more responsive and accountable; and (iv) environment and sustainable development, based on the results D1: integration of environmental and energy concerns in the development and implementation of policies, strategies and programmes, and D3: adapting to climate change and take systematic account of the management of risks associated with climate change into national development strategies.

Since the Rio Conference of 1992 on environment and sustainable development, UNDP supports the country to engage in an innovative and sustainable development dynamic, as well as at political decisions that development programmes levels. Thus, UNDP accompaniment to the Comoros to fulfill its commitments to engage in the path of sustainable development has resulted in the adoption and implementation of numerous instruments which have allowed to increase the government intervention capacity in important areas such as natural resources and environment management, climate change, disaster risk reduction, energy and agriculture. This is the case for: (i) diagnosis of the condition of the environment and natural resources, (ii) the national environmental policy, (iii) the environmental action plan, (iv) the national biodiversity strategy and action plan, (v) the first national communication on climate change, (vi) the national action plan for climate change adaptation (NAPA), (vii) the national agricultural policy (viii), the growth and poverty reduction strategy paper, (ix) the strategy for the revival of agriculture and rural development. UNDP has also supported the country for the adoption of the Framework Law on Environment, and more recently, this support has enabled the Union of the Comoros to have a multi-year strategic programming framework (CSP 2011-2016), designed as a tool to address multisectoral challenges and issues related to climate change, conservation of the environment, and disaster risk reduction. In the same vein UNDP support has also resulted in the adoption by the Government of a Green Development Manifesto reflecting its commitment to put the country onto a path of sustainable growth and green climate resilient and low carbon emission development. This document lays the foundation for an overhaul of the development vision adopted so far and to engage the Comoros in the path of a low carbon development, which facilitates social integration and conserve the environment, while enhancing, biodiversity and ecosystems services.

In terms of capacity building UNDP has already conducted several programmes for assessment of capacity building needs and formulation of action plans relating thereto, including the implementation of the UN Framework Conventions on biodiversity and climate change, for environment and natural resources management, the development of national capacities for the successful implementation of the priority areas of the strategy for agricultural and rural development. All these interventions were carried out in close collaboration with UNITAR, FAO, IUCN, WWF-Madagascar. UNDP is also the implementing agency for the LDCF supporting project “Adapting water resource management in the Comoros to expected climate change”.

UNDP is also supporting Comoros to promote the access of the majority of low-income households and micro-entrepreneurs to varied and perennial microfinance services through the Programme for Inclusive Finance in the Comoros implemented in collaboration with the UNCDF. Thanks to this project, UNDP has developed a strong expertise in how strengthening the MFI to develop appropriate financial products for the most vulnerable groups like the low income households, the women and the other excluded from the traditional financial market.

In addition, UNDP supports the Comoros since 2007 to develop and implement institutional and systemic management of natural disasters and climate risks. This has enabled the country to carry out a number of actions aiming to enhance the coastal ecosystems capacity to play the role of natural barrier against natural disasters. This accompaniment of the country has positioned UNDP Comoros as a preferred partner in reducing disaster risk (DRR) and climate change adaptation (CCA). UNDP Comoros, through the Small Grant Programme (SGP), has also supported a number of pilot initiatives for the development of sustainable alternative income generating activities in the areas of adaptation and mitigation of impacts of climate change.

The numerous interventions of the UNDP Country Office in various areas of concentration of the Country Cooperation Framework has allowed the country office to develop capacity and experience in the areas of food security, sustainable energy, participatory local governance, biodiversity, poverty reduction, inclusive financing, agricultural and development infrastructures building and gender mainstreaming into

national programmes and projects. This experience is based on a solid team both locally with an Eco-Advisor, a programme analyst/specialist in democratic governance and decentralization, three programme associates/specialist in fight against poverty, environmental management, capacity building and mainstreaming of major issues such as climate change. In addition, the Country Office has established solid relationships with the Ministry for Agriculture, Fishing, Environment, in charge of Energy, Industry and of Artcrafts, particularly through the signing of a joint agreement for strategic partnership and resource mobilization.

It is worth also to mention that UNDP Comoros is member of the Agriculture Sector Technical Group in charge of the monitoring of the sector in the framework of the growth and poverty reduction strategy. Furthermore, UNDP is part of the Comoros National Multisectoral Committee for drafting the national document of the comprehensive African agriculture development programme (CAADP) of NEPAD.

Regionally and internationally, UNDP is already implementing a number of other UNDP-GEF projects using an approach similar to this project, this confirms the availability within UNDP of sufficient technical expertise on which we can rest and a lot of experience in the field on which we can capitalize for replication or scaling of the various experiments. UNDP also has thematic networks to share experience and proven knowledge that make available its technical experts and all the innovations and recent advances in relevant fields, in order to ensure success and maximum impact its programmes and projects.

**C.1. INDICATE THE CO-FINANCING AMOUNT THE GEF AGENCY IS BRINGING TO THE PROJECT:**

The co-financing UNDP will bring to this project will mainly be through 2 projects: 1) “support programme for inclusive finance in the Comoros (PAFIC)” funded to the amount of US\$2.5 million and, 2) “project Développement des capacités de gestion des risques naturels et climatique funded to the amount of US\$1,000,000. In addition UNDP will provide US\$400,000 of its core resources and in-kind contribution of nearly US\$500,000. This is resulting in a total contribution of UNDP in the range of US\$4.4 million.

**C.2. HOW DOES THE PROJECT FIT INTO THE GEF AGENCY’S PROGRAMME (REFLECTED IN DOCUMENTS SUCH AS UNDAF, CAS, ETC.) AND STAFF CAPACITY IN THE COUNTRY TO FOLLOW UP PROJECT IMPLEMENTATION:**

The project is in line with three of the four priority areas of cooperation within the UNDAF 2008-2014 which are: i) Sustainable economic growth and fight against poverty; ii) Democratic governance and social cohesion, and iii) Environment and Sustainable Development.

Activities and results that will be developed under this project are also fully consistent with the UNDAF outcome 1: "By 2014, revenues, jobs, decent work and security food of the poor and vulnerable people are improved; and the UNDAF outcome 4: "By 2014, ecosystem integrity is preserved and eco-services they provide are valued for the benefit of the population and vulnerability to natural and climate hazards is significantly reduced in a sustainable development perspective."

In addition, this programme is in line with the Country Cooperation Framework, as well as its action plan (CPAP) and focus on three priority areas: (i) poverty reduction strategy, especially in the field of the result area A1: promoting inclusive growth, gender equality and the MDGs; (ii) Democratic governance, particularly the result areas B1: encourage inclusive participation, and B2: promoting governance institutions more responsive and accountable, and (iv) environment and sustainable development, through its result areas D1: integration of environmental and energy concerns in the development and implementation of policies, strategies and programmes, and D3: adapt to climate change and take

systematic account of the management of risks associated with climate change and extreme weather hazards into national development strategies.


**PART III: APPROVAL/ENDORSEMENT BY GEF OPERATIONAL FOCAL POINT(S) AND GEF AGENCY(IES)**

**A. RECORD OF ENDORSEMENT OF GEF OPERATIONAL FOCAL POINT (S) ON BEHALF OF THE GOVERNMENT(S):**

NAME	POSITION	MINISTRY	DATE (MM/DD/YYYY)
Ali Mohamed Soilihi,	Permanent Secretary, GEF Operational Focal Point	vice Presidency in charge of the ministry of Production, Environment, Energy, Industry and Handcraft	04/13/2012

**B. GEF AGENCY(IES) CERTIFICATION**

is request has been prepared in accordance with GEF policies and procedures and meets the GEF criteria for project identification and preparation.

Agency Coordinator, Agency name	Signature	Date	Project Contact Person	Telephone	Email Address
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