GEF-6 REQUEST FOR PROJECT ENDORSEMENT/APPROVAL
PROJECT TYPE: Full-sized Project
TYPE OF TRUST FUND:Least Developed Countries Fund

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PART I: PROJECT INFORMATION

Project Title: Building Climate Resilience through Rehabilitated Watersheds, Forests and Adaptive Livelihoods			
Country(ies):	The Union of the Comoros	GEF Project ID:[1]	5694
GEF Agency(ies):	UNEP (select) (select)	GEF Agency Project ID:	01249
Other Executing Partner(s):	Ministry of Production, Environment, Energy, lndustry and Handicrafts (MAPEEIA) – National Directorate of Environment and Forests (DGEF)	Resubmission Date:	24 May 2016 October 18, 2016
GEF Focal Area (s):	Climate Change Adaptation	Project Duration (Months)	48
Integrated Approach Pilot	IAP-Cities ☐ IAP-Commodities ☐ IAP-Food Security ☐	Corporate Program: SGP ☐	
Name of Parent Program	[if applicable]	Agency Fee ($)	488,300

A. FOCAL AREA STRATEGY FRAMEWORK AND OTHER PROGRAM STRATEGIES[2]

Focal Area Objectives/Programs	Focal Area Outcomes	Trust Fund	(in $) GEF Project Financing	(in $) Co-financing
(select) CCA-2 (select)	Outcome 2.3: Institutional and technical capacities and human skills strengthened to identify, prioritize, implement, monitor and evaluate adaptation strategies and measures	LDCF	929,807	5,093,334
(select) CCA-1 (select)	Outcome 1.1 - Vulnerability of physical assets and natural systems reduced	LDCF	1,999,043	1,793,333
(select) CCA-1 (select)	Outcome 1.2 - Livelihoods and sources of income of vulnerable populations diversified and strengthened	LDCF	2,211,150	9,593,333
	Total project costs		**5,140,000**	**16,480,000**

B. PROJECT DESCRIPTION SUMMARY

[1] Project ID number remains the same as the assigned PIF number.
[2] When completing Table A, refer to the excerpts on *GEF 6 Results Frameworks for GETF, LDCF and SCCF*.

Project Objective: Build climate resilience in the Comoros by rehabilitating watersheds and forests and diversifying adaptive livelihoods						
Project Components/ Programs	**Financing Type[3]**	**Project Outcomes**	**Project Outputs**	**Trust Fund**	**(in $)**	
					GEF Project Financing	**Confirmed Co-financing**
1. Enhanced capacity to address climate risks through watershed management	TA	Outcome 1: Strengthened technical and institutional capacity for resilient integrated watershed management at the national and local levels	1.1 Assessments of climate change risks and impacts on Comorian forests and watersheds, contributing to a geo-referenced information system 1.2 Training and information is provided to introduce integrated watershed management into public policy and practice as an adaptation strategy 1.3 A strategy and an intersectoral platform to sustain and replicate integrated watershed management are developed and institutionalized	LDCF	781,474	5,000,000
2. Resilient watersheds and ecosystem-based adaptation demonstrations	TA	Outcome 2: Rehabilitated and sustainably managed watersheds and sub-catchments in project areas	2.1 Watershed rehabilitation and management plans and implementation mechanisms adopted by communities 2.2 3500 ha of the targeted watersheds are rehabilitated through reforestation, conservation and anti-erosive measures	LDCF	1,850,710	1,700,000

[3] Financing type can be either investment or technical assistance.

3. Resilient and diversified ecosystem-based livelihoods for local communities	TA	Outcome 3: Increased and sustained income from alternative livelihood strategies among project communities	3.1 Ecosystem-based livelihoods, such as agroforestry practices are adopted among project communities 3.2 Climate-proof innovative sources of livelihoods adopted in project communities	LDCF	2,062,816	9,500,000
			Subtotal		4,695,000	16,200,000
			Monitoring and Evaluation (M&E) Project Management Cost (PMC)[4]	LDCF	200,000 245,000	100,000 180,000
			Total project costs		5,140,000	16,480,000

C. CONFIRMED SOURCES OF CO-FINANCING FOR THE PROJECT BY NAME AND BY TYPE

Please include evidence for co-financing for the project with this form.

Sources of Co-financing	Name of Co-financier	Type of Cofinancing	Amount ($)
Recipient Government	DNSAE (FAO)	Grants	10,000,000
Recipient Government	DGEF (Japan)	Grants	200,000
Donor Agency	FADC (Fonds d'Aide au Développement Communautaire)	Grants	6,000,000
Recipient Government	DGEF	In-kind	280,000
Total Co-financing			16,480,000

D. TRUST FUND RESOURCES REQUESTED BY AGENCY(IES), COUNTRY(IES) AND THE PROGRAMMING OF FUNDS

GEF Agency	Trust Fund	Country Name/Global	Focal Area	Programming of Funds	(in $)		
					GEF Project Financing (a)	Agency Fee a) (b)[2]	Total (c)=a+b
UNEP	LDCF	Union of the Comoros	Climate Change	(select as applicable)	5,140,000	488,300	5,628,300
Total Grant Resources					5,140,000	488,300	5,628,300

[4] For GEF Project Financing up to $2 million, PMC could be up to10% of the subtotal; above $2 million, PMC could be up to 5% of the subtotal. PMC should be charged proportionately to focal areas based on focal area project financing amount in Table D below.

E. PROJECT'S TARGET CONTRIBUTIONS TO GLOBAL ENVIRONMENTAL BENEFITS[5]

Provide the expected project targets as appropriate.

Corporate Results	Replenishment Targets	Project Targets
1. Maintain globally significant biodiversity and the ecosystem goods and services that it provides to society	Improved management of landscapes and seascapes covering 300 million hectares	*hectares*
2. Sustainable land management in production systems (agriculture, rangelands, and forest landscapes)	120 million hectares under sustainable land management	*3,500 hectares*
3. Promotion of collective management of transboundary water systems and implementation of the full range of policy, legal, and institutional reforms and investments contributing to sustainable use and maintenance of ecosystem services	Water-food-ecosystems security and conjunctive management of surface and groundwater in at least 10 freshwater basins;	*Number of freshwater basins*
	20% of globally over-exploited fisheries (by volume) moved to more sustainable levels	*Percent of fisheries, by volume*
4. Support to transformational shifts towards a low-emission and resilient development path	750 million tons of CO_{2e} mitigated (include both direct and indirect)	metric tons
5. Increase in phase-out, disposal and reduction of releases of POPs, ODS, mercury and other chemicals of global concern	Disposal of 80,000 tons of POPs (PCB, obsolete pesticides)	*metric tons*
	Reduction of 1000 tons of Mercury	*metric tons*
	Phase-out of 303.44 tons of ODP (HCFC)	*ODP tons*
6. Enhance capacity of countries to implement MEAs (multilateral environmental agreements) and mainstream into national and sub-national policy, planning financial and legal frameworks	Development and sectoral planning frameworks integrate measurable targets drawn from the MEAs in at least 10 countries	*Number of Countries:*
	Functional environmental information systems are established to support decision-making in at least 10 countries	*Number of Countries: 1*

F. DOES THE PROJECT INCLUDE A "NON-GRANT" INSTRUMENT? No

[5] Update the applicable indicators provided at PIF stage. Progress in programming against these targets for the projects per the *Corporate Results Framework* in the *GEF-6 Programming Directions*, will be aggregated and reported during mid-term and at the conclusion of the replenishment period.

(If non-grant instruments are used, provide an indicative calendar of expected reflows to your Agency and to the GEF/LDCF/SCCF Trust Fund) in Annex D.

PART II: PROJECT JUSTIFICATION

A. ANY CHANGES IN ALIGNMENT WITH THE PROJECT DESIGN WITH THE ORIGINAL PIF[6]

Some changes have been made in terms of the alignment of the proposed project document with the original project design of the PIF. The following summarises the most significant changes in terms of GEF Focal Areas, baseline projects, and proposed project's outcomes/outputs:

- The Focal Areas selected at PIF stage were maintained in the Project Document, however because GEF 5 focal areas were used at the PIF stage, and the CEO endorsement is being submitted in GEF 6, the Focal areas have been updated according to new GEF 6 Focal Areas and objectives (see Section A1-(3) below).
- Baseline projects and the co-financing amounts identified at the PIF stage were modified in the Project Document. The following co-financing sources will apply:
    - The FAO Country Programming Framework (CPF) (2014-2019, US$ 10,000,000),
    - The Comoros Social Safety Net Project (2015-2019, US$ 6,000,000), and
    - As part of the Priority Action Plan for Forestry Development (PAPDF), the National Directorate of Environment and Forests (DGEF) of MAPEEIA has received support from various donors, including Japan who will contribute US$ 200,000.

In order to meet the country's current context and requirements, the following changes have been made to the Components, Outcomes and Outputs as detailed in the table below.

PIF	**CEO endorsement**	**PIF**	**CEO endorsement**	**CEO endorsement**
Project component/ expected outcomes	**Project component/ expected outcomes**	**Expected outputs[7]**	**Expected outputs**	**Justification of the change to the PIF**
Component 1. Capacity to address climate risks through watershed management Outcome 1. Strengthened government and local capacity for resilient watershed management	Component 1. Enhanced capacity to address climate risks through watershed management Outcome 1. Strengthened technical and institutional capacity for resilient integrated watershed management at	1.1 Assessments of climate change risks and impacts on Comorian forests and watersheds	1.1 Assessments of climate change risks and impacts on Comorian forests and watersheds, contributing to a geo-referenced information system	Syntax change
		1.2 Resilient integrated watershed management is introduced into public policy and practice as an adaptation strategy	1.2 Training and information is provided to introduce integrated watershed management into public policy and practice as an adaptation strategy	Original outputs 1.2 and 1.3 from the PIF were combined under one output. The community-based ecological monitoring programme was excluded because it would not have been cost effective. There was a lack of awareness and

[6] For questions A.1 –A.7 in Part II, if there are no changes since PIF , no need to respond, please enter "NA" after the respective question.

[7] In case of a single focal area, single country, single GEF Agency project, and single trust fund, no need to provide information for this table.

PIF	CEO endorsement	PIF	CEO endorsement	CEO endorsement
Project component/ expected outcomes	**Project component/ expected outcomes**	**Expected outputs[7]**	**Expected outputs**	**Justification of the change to the PIF**
	the national and local levels	1.3 Technical staff are fully versed in integrated watershed management as a resilience building activity		willingness to participate by the communities consulted. Furthermore, acquiring the means of communication necessary for ensuring this integration would not have been cost-efficient, given the current conditions regarding telecommunications and energy infrastructure in the project areas. It was decided instead to focus on creating the technical capacity at government level that would enable them, at a later stage, to develop community monitoring partnerships. The following activities will contribute to this output: - **Activity 1.2.1** Analysis of current (explicit and implicit) watershed management practices, including of their potential for adaptation, and analysis of IWM factors of success (including local community mobilization, land tenure and property rights, traditional environmental knowledge, institutional and policy issues) - **Activity 1.2.2** Introduction to participatory watershed management as a climate resilience strategy through training and awareness raising among MAPEEIA staff and decentralized stakeholders in the environment, forest, water and agriculture sector - **Activity 1.2.3** Develop policy briefs and technical guidelines for MAPEEIA and communities on the contribution of healthy ecosystems for livelihoods and adaptation, and the integration of ecosystem-based adaptation into watershed and forest

PIF	CEO endorsement	PIF	CEO endorsement	CEO endorsement
Project component/ expected outcomes	**Project component/ expected outcomes**	**Expected outputs[7]**	**Expected outputs**	**Justification of the change to the PIF**
				rehabilitation and management (based, inter alia, on lessons learned from Component 2) **- Activity 1.2.4** Work with INRAPE, the University of Comoros, and other technical and vocational training institutes in Comoros to develop and deliver courses on climate change, climate risk management and watershed management **- Activity 1.2.5** Develop mechanisms for securing access to land, including through the application of the FAO's voluntary guidelines on the governance of land tenure systems.
		1.4 A strategy to sustain and replicate climate-resilient integrated watershed management is developed and institutionalized	1.3 A strategy and an intersectoral platform to sustain and replicate integrated watershed management are developed and institutionalized	Syntax change to better capture the expected outputs under this component
Component 2. Resilient watersheds and ecosystem-based adaptation demonstrations Outcome 2. Rehabilitated and resilient watersheds in project sites	Component 2. Resilient watersheds and ecosystem-based adaptation demonstrations Outcome 2. Rehabilitated and sustainably managed watersheds and sub-catchments in project areas	2.1 Watersheds and sub-catchments in project areas are rehabilitated and sustainably managed using resilient species	2.1 Watershed rehabilitation and management plans and implementation mechanisms adopted by communities	Syntax change
		2.2 Human-induced forest and watershed degradation is reversed through resilient and collaborative catchment management in project sites	2.2 3,500 ha of the targeted watersheds are rehabilitated through reforestation, conservation and anti-erosive measures	Syntax change
Component 3. Resilient and	Component 3. Resilient and	3.1 Increased and	3.1 Ecosystem-based livelihoods,	Syntax change to accurately reflect results at outcome vs.

PIF	CEO endorsement	PIF	CEO endorsement	CEO endorsement
Project component/ expected outcomes	**Project component/ expected outcomes**	**Expected outputs[7]**	**Expected outputs**	**Justification of the change to the PIF**
diversified ecosystem-based livelihoods for local communities	diversified ecosystem-based livelihoods for local communities	sustained income from climate-resilient agroforestry among project communities	such as agroforestry practices are adopted among project communities	output level
Outcome 3. Communities deploy a diversified array of resilient livelihood strategies in the project areas	Outcome 3. Increased and sustained income from alternative livelihood strategies among project communities	3.2 Avenues for climate-resilient innovative sources of livelihoods explored in project communities	3.2 Climate-proof innovative sources of livelihoods adopted in project communities	Syntax change to accurately reflect results at outcome vs. output level

A.1. Project Description

A.1.1 Adaptation problems, root causes and barriers that need to be addressed

The climate change problem for Comoros

The Comoros archipelago is made up of four islands: Grande Comore, Anjouan, Mohéli and Mayotte. The Union of the Comoros (hereafter referred to as 'the Comoros') comprises Grande Comore, Anjouan and Mohéli. Climate change is likely to adversely affect the Comoros with impacts such as i) changes in rainfall levels and patterns and the subsequent shortening of rainy seasons; ii) increased temperatures; iii) sea level rise (and subsequent salinization of critical coastal aquifers as a result of salt water intrusion); and iv) an increased frequency of climatic hazards (such as tropical cyclones, droughts, episodes of heavy rainfall and flooding). Exacerbating these climate change impacts are the inherent environmental vulnerabilities of Small Island Developing States (SIDS), including small land area, susceptibility to natural disasters, geographical isolation, limited natural resources and sensitive ecosystems. This, superimposed on existing anthropogenic practices such as the quickening pace of deforestation rates for agricultural production, threatens water security, food security, economic growth and the livelihoods of communities within the Union of the Comoros.

The observed and predicted climate change and its effects are described in more detail below.

Observed and predicted climate change

As noted in the Comoros' National Adaptation Programme of Action (NAPA) and UNFCCC National Communications, an increase in annual temperatures of around 1ºC has been noted over the last thirty years, as well as a shortening of the rainy season from six months to two to three months and an increase in frequency of severe rainfall events and flooding. A decrease in river flows has also been noted as well as an

earlier drying of rivers at the end of the rainy season, attributed to the degradation of watersheds.[8] Historical observation has shown a trend towards the increase of extreme meteorological phenomena during the last thirty years.[9]

Future climate change is likely to increase the frequency of storms and their severity, exacerbate climate variability and increase the rapidity of sea-level rise. Values shown in Figures 2.5 and 2.6 are anomalies relative to the 1970-1999 mean climate for monthly precipitation and mean temperature under three different emissions scenarios (SRES B1; SRES A2; SRES A1B). Climate change projections for the Comoros include a decline in rainfall of between 2 and 14% during the dry season by 2090.[10] While projections of mean annual rainfall vary from one model to the next, ranging from -15% to +39%, seasonal projections show more accurate projections with decreases in rainfall from June to November and increases from December to April (see reference for seasonal projections graph). As for temperature, projections include an increase in the mean annual temperature of between 0.8 and 2.1°C by 2060, and of 1.2 to 3.6°C by 2090, and an expected 20 cm rise in sea level by 2050.[11]

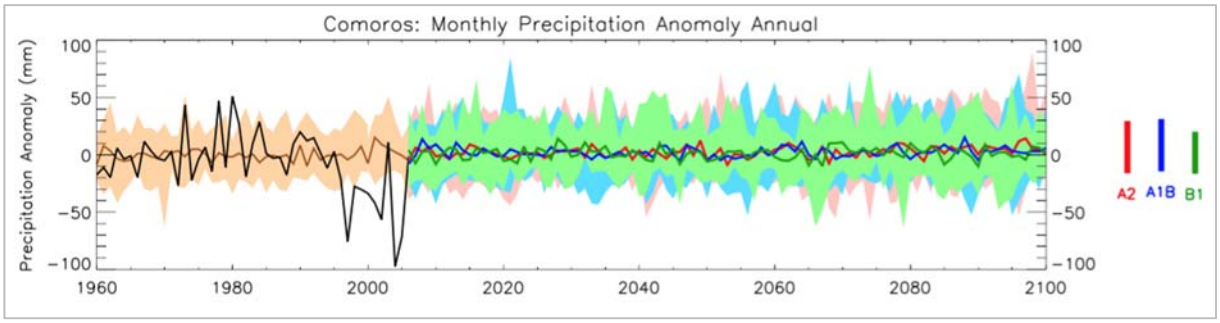


Figure 1: Monthly precipitation anomaly annual in the Comoros from 1960 to 2100

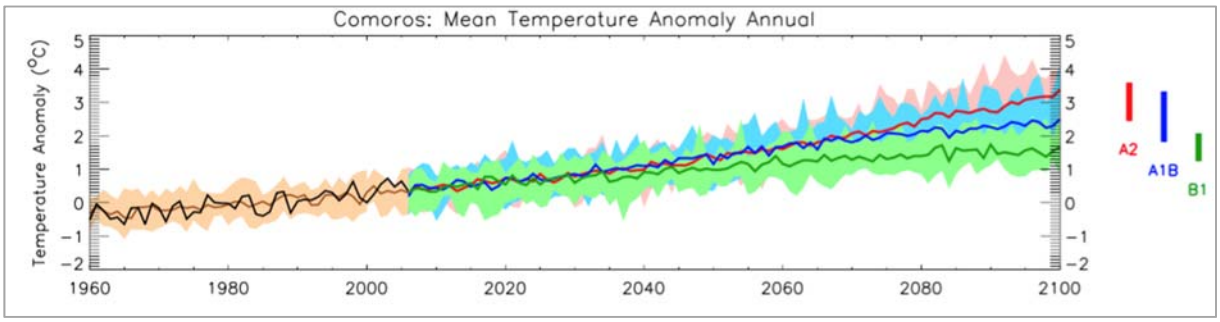


Figure 2: Mean temperature anomaly annual in the Comoros from 1960 to 2100[12]

[8] See for example Watershed management field manual, T.C. Sheng, FAO, 1990.
[9] http://unfccc.int/resource/docs/napa/com01e.pdf
[10] McSweeney, C., New, M. & Lizcano, G. UNDP Climate Change Profiles: Comoros. http://country- profiles.geog.ox.ac.uk
[11] McSweeney, C., New, M. & Lizcano, G. UNDP Climate Change Profiles: Comoros. http://country- profiles.geog.ox.ac.uk
[12] Black curves show the mean of observed data from 1960 to 2006, Brown curves show the median (solid line) and range (shading) of model simulations of recent climate across an ensemble of 15 models. Colored lines from 2006 onwards show the median (solid line) and range (shading) of the ensemble projections of climate under three emissions scenarios. Colored bars on the right-hand side of the projections summarize the range of mean 2090-2100 climates simulated by the 15 models for each emissions scenario.

Observed effects of climate change
Studies conducted in Anjouan and Moheli during the first National Communication (2002)[13] have concluded that out of the 40 permanent river basins that used to exist in the 1950s, merely 10 remain today, and most of those dry up in the dry season, leading to a reduction in water availability for drinking, irrigation and hydro-electricity production. This increasing aridity is also marked by an agricultural water deficit that can last up to 6 months; these phenomena are also confirmed in the case of Grande Comore.

In addition to prolonged droughts, the three islands of the Comoros also suffer from intense flooding episodes during the rainy season. The recent floods of April 2012 were characterized by heavy rainfall, six times what was normally observed at this period of the year, hence impacting agriculture and further degrading forests.[14]

Other observed effects of climate change include cyclones and tropical storms. Between 1910 and 1990, the Comoros went through 40 cyclones, with heavy consequences on the population and infrastructure.[15]

Predicted effects of climate change
Climate change will have negative effects on the Comoros' main socio-economic sectors. This section describes the impacts that are likely to be faced by each sector under predicted climate change conditions.

Climate change is expected to affect the **agricultural sector** in the following ways: it is expected that the increase in air temperature combined with high intensity rainfall events will contribute to accelerating the process of soil erosion in the Comoros, given the fragility of the soil, and will lead to a decrease in agricultural production. Crops cultivated in the open field system would be the most vulnerable to climate change, given the lack of vegetation and forest cover of such systems of production. The systems that feature mixed cropping (traditional agroforestry and cultivation under natural forest cover) would resist climate change better. Small coastal plains where monocultures are found will be threatened by underground and surface salt-water intrusion. Those coastal monocultures, such as cash-cropping estates cultivating coconut palm and ylang-ylang, as well as clove and vanilla cultures (grown in the lowlands), are central to Comoros' economy. Given their economic importance, any loss of earnings resulting from a decrease in production and export would severely impact the livelihoods of Comorians and the Comorian economy.

These current and anticipated climate change effects have impacts on **watersheds and other ecosystems,** and on livelihoods. For example, baseline vulnerabilities created by accelerated declines in soil fertility have been noted in various parts of the country, which has had an impact on agricultural yields in highlands and low-lying areas[16]. As a result of this declining fertility and suitability for cropping, many farmers have reverted back to bush fire for land clearing, leading to further degradation of upper watersheds. With a high level of precipitation, the intensity of which may be magnified by climate change, rapid run-off has created further erosion, exacerbating the need for land clearing.

The supply of **water** is currently insufficient to meet the needs of the Comorian population. The principal sources of water in the Comoros are: rainwater collected in cisterns, river water and coastal aquifers. Negative climate change impacts such as rainfall variation and decline, mean annual temperature increases and climate-induced hazards will exacerbate the shortage of water supply and water quality, both of which are already affected by inadequate management of watershed resources and deforestation.

[13] Abdou, Soimadou, Étude de vulnérablité dans le secteur forestier, 2005.
[14] Mansourou, A., 2013, Contribution à la gestion des risques de catastrophes naturelles: cas des inondations aux Comores, Université Senghor.
[15] Mansourou, A., 2013, Contribution à la gestion des risques de catastrophes naturelles: cas des inondations aux Comores, Université Senghor.
[16] Plan d'Aménagement de la Zone Bandasamlini-Sangani-Diboini, 2013. Plan d'aménagement de la région de Nioumakélé-bas, 2013. Both studies were undertaken in the context of the ACCE project and provide details of land and water degradation in those areas.

Rainfall variations will also continue to impact the **energy sector** in terms of hydroelectricity generation due to both prolonged drought and frequent flood events, which will in turn increase more dependence on wood fuel in rural communities, further degrading forests.

Climate change impacts will also affect the **health sector**. Extreme climate events such as floods will not only promote the spread and incidence of malaria, but also increase the occurrence of waterborne diseases, such as cholera, diarrhea and typhoid. Drinking water will also be affected as a result contamination due to the flooding of supply networks. Furthermore, prolonged droughts will also continue to increase food insecurity, thus further escalating malnutrition. Finally, in times of extreme floods, access to villages and to their hospitals may be more difficult due to roads blocked by landslides, damages to the roads in turn impacting the **transport sector**.

The adaptation problem that this project will seek to address is the vulnerability of rural communities in the Comoros to the impacts of climate change due partly to the rapid degradation of watersheds and river basins in all three islands, which is expected to be exacerbated by increasing variability of rainfall intensity, drier periods and droughts as well as temperature increases. These dynamic changes threaten the livelihoods of communities that depend on healthy watersheds. The degradation of watersheds has long-term impacts on all productive sectors, leading to an exponential increase in vulnerability throughout the rural and urban landscapes in Comoros.

National institutions and local communities have low technical capacity in terms of climate change adaptation and know-how to address these threats. Other barriers include lack of technical staff at the central and island levels and particularly in rural areas, lack of finance, weak coordination between government ministries and island authorities and weak legal enforcement. Given the projected climate change risks for the country and the impacts on development sectors noted above, development investments made by the government and donors in the project regions are likely to be undermined if climate change risks are not integrated into the design of development investments.

The problem to be addressed in the project is compounded by a number of root causes and barriers, as follows:

Root causes

Geographic location

Its geographic location, coupled with the topography and geomorphology of the islands, make the Comoros highly sensitive and vulnerable to climate change impacts. Indeed, all coasts present steep banks, contrasted relief and fragile soils due to the volcanic origin of the three islands, which emphasize the pressure on land for agriculture.

Political and institutional instability

Years of political instability and conflicts within the country have nurtured a lack of confidence in government structures. The lack of political stability exacerbates the negative impacts of climate change. The lack of coordinated and consistent policies and the insufficient clarity on the division of responsibilities and mandates between the Union and island governments, mean that opportunities are lost to integrate climate change considerations in development and sectoral policies and to legislate effective adaptation interventions. With competing - and at times conflicting – mandates, government institutions are unable to coordinate the actions needed to mitigate the negative impacts of climate change.

Poverty and agricultural livelihoods

Classified among the Least Developed Countries (LDCs), the Comoros is one of the poorest countries in the world, with a gross national income per capita of US$ 840 and an annual GDP growth of 3.5% in 2014. Additionally, the population density is among the highest in Africa, with approximately 394.90 people per km^2 in 2013 and population growth rate of 2.4% in 2014.[17] Extreme poverty in the rural areas has led communities to intensify their encroachment on forests for expansion of agriculture, which itself leads to a vicious cycle of degrading watersheds and declining productivity.

Unsustainable agricultural practices are triggered by several underlying factors, including population pressure on land tenure and lack of equipment. These factors result in inappropriate use of land, including the conversion of steep land to cropland, the absence of crop rotation, and ploughing, and subsequently reduce fertility and agricultural productivity. In addition, the current and anticipated climate change effects have impacts on watersheds and on livelihoods. For example, accelerated declines in soil fertility have been noted in various parts of the country, which has had an impact on agricultural yields in highlands and low-lying areas.[18] As a result of this declining fertility and suitability for cropping, many farmers have reverted back to bush fire for land clearing, leading to further degradation of upper watersheds. With a high level of precipitation, rapid run-off has created further erosion, further exacerbating the need for land clearing. Water supply has become an issue in some parts of the country, with declining water quality, and low levels of water recharge in rivers due to rapid run-off.[19]

Small farm size creates disincentives for local investments into ecological restoration and the maintenance of ecological services. One individual unit averages 0.25 to 2.00 hectares and there is a severe lack of farm equipment. Farmers use mostly hoes, bush knives or machetes for their work, which makes it labor-intensive and difficult to adapt to changes. The use of agricultural inputs is very small and most farming is done without the use of any fertilizers or phyto-sanitary products. Negative impacts of climate change on production would be severe given the small scale of farms and the inability to insulate their economic activities with technological fixes.

Livelihoods remain based on traditional crops, and little efforts have yet been made to diversify livelihoods in rural areas. This highlights their vulnerability particularly in light of potential climate constraints on production in the mid- to long-term.

Energy needs

Most of the energy needs in the Comoros are met through the use of fuel wood and oil products – two-thirds of those needs are based on biomass. As such, deforestation for firewood (and construction materials) is increasing, and it was reported in 2010 that nearly 74% of households in the Comoros used fuel-wood as their main source of energy[20]. The energy sector in the Comoros is currently in crisis and represents the major constraint to the country's socioeconomic development due to its high power deficit. Indeed, the country has the highest rate of energy loss among all African countries: in 2015, the Energy Ministry published statistics indicating almost inexistent production level, with 48% of the generated electricity lost, only 33% of energy sold actually paid for and 80% of the country in darkness.[21] The reliance on only one source of energy contributes to the energy crisis and cannot possibly meet the energy needs of the whole country. An energy

[17] http://www.tradingeconomics.com/

[18] Plan d'Aménagement de la Zone Bandasamlini-Sangani-Diboini, 2013. Plan d'aménagement de la région de Nioumakélé-bas, 2013. Both studies were undertaken in the context of the ACCE project and provide details of land and water degradation in those areas.

[19] Id.

[20] FAO, Appui au programme forestier national, 2009

[21] http://www.afdb.org/en/news-and-events/article/discussions-to-reform-ailing-energy-industry-in-the-comoros-14102/

master plan on diversifying energy sources with renewable energies, such as solar and geothermal is under process to meet the country's needs in a sustainable manner.

Land tenure

The State owns most of the agricultural land in the Comoros, which has been known to lead to misuse. For example, in some project sites, the Army practices intensive logging in order to sell wood and coal as an additional income. Although village communities tend to question the State ownership of the occupied lands, because the army represents the State, there is little control of the army's actions, and different ministries have to date failed to come to an agreement on the enforcement of logging laws.

The fact that three tenure regimes (i.e. Colonial, Sharia, and customary laws) are applied on an equal importance also creates confusion and fragmentation in enforcement[22]. This lack of clarity on property rights often leads to land abandonment as soon as land becomes less productive, with further clearing for agricultural expansion involving total deforestation and burning. This also results in a lack of willingness on the part of producers to invest in the protection and improvement of the arable lands, which promotes unsustainable agricultural techniques and deforestation. There is no disincentive to abandoning land, and no clear economic incentive to clarifying land ownership. The Government itself has not yet come to a clear policy in this regard.

Barriers

Limited human capital at the institutional level

Low levels of technical skills, a weak agricultural extension system, lack of infrastructure and access to markets all constitute key barriers to resilience and adaptation in the Comoros. National governments and institutions as well as the islands' administrations do not have the resources nor the capacity to implement effective and efficient environmental laws and regulations. For instance, the DGEF functions in a limited way due to a low level of human, financial, technical and logistical capacity. As a result, there is no forest land-use planning, no sectoral development planning, and no forest protection measures; there is also no comprehensive policy framework for watershed management, and climate change considerations are also not integrated into the DGEF's work on forests. The Framework Law on the Environment and the various regulations are unfortunately poorly enforced due to many constraints – material, human and financial.

There are no clear guidelines on how to effectively maintain or use ecosystem services in an agricultural context, particularly one that is adapted to the soil and climate constraints of Comoros, let alone a set of guidelines that would enable communities to improve the sustainability of their land use practices and adapt them to the emerging climate conditions. Lack of information about forests and their role in maintaining ecological productivity and livelihoods also exacerbate this problem, further enhanced by the lack of information regarding land tenure, property rights and stewardship duties among rural communities. The institutional set-up and capacity for watershed management is weak, the resources available are insufficient, and the application of forestry policies, laws and standards, is low.

There is no technical capacity on parasites control and diseases degrading crop cultivation at the community and national levels. Furthermore, there is no veterinary control beyond initial vaccination, which is increasingly leading to the loss of livestock, notably goats. Comorian communities, autonomous islands' governments, and the national government presently lack the technical capacity, management capacity, institutional mechanisms, physical resources and financial resources to overcome and cope with the

[22] UNEP, 2002, "Atlas des ressources côtières".

anticipated changes in climatic conditions. Some efforts have been made to revitalize and reform the local extension service, for example by transforming the Agricultural Advisory Centres (CCA) into Rural Economic Development Centres (CRDE – Centre rural de développement économique). However, this has not yet led to an effective transfer of knowledge to agricultural producers and natural resources users, owing to the low capacity of staff, limited budgets and weaknesses in the institutional set-up.

Limited technical capacity at the community level

Weaknesses within the forestry management sector, at the institutional level, as well as at the local level also create a vacuum of initiatives, except for small-scale ad-hoc reforestation initiatives undertaken, for example, during annual government-led reforestation campaign (for example: "Un Comorien, Un Arbre"). During consultations, stakeholders quoted the lack of knowledge of the economic benefits of watershed management, as well as a lack of technical and financial resources as reasons for this barrier.

Lack of access to information

All sectors face similar challenges of accessing and transferring information to local communities, due to a combination of remoteness, low levels of education, and a general cultural resistance to "government-imposed" solutions. Access to data and information is also low, particularly in the area of hydro-meteorological monitoring, which hampers the government's capacity to make forecasts and predictions. Data on forests and hydrological basins is mostly unavailable, except for ad hoc studies, and there is to date no comprehensive forest monitoring programme, due to lack of financial and technical resources.

There are some NGOs and CBOs in Comoros, however the associative movement is not as well developed as would be needed to provide support and outreach to local communities. A general lack of technical and financial means is often quoted as a reason for this, although there also appear to be no systemic incentives for the associative movement. Access to the media and public sources of information is also low, which hinders the rapid dissemination of new information, including that related to adaptation.

A.1.2 Baseline scenario or any associated baseline projects

Baseline Scenario

Watershed degradation is contributing to the dyring up of rivers and streams which is a key vulnerability given expected climate change impacts on rainfall. The inadequate management of watersheds is directly linked to deforestation. The reduction in natural forest cover from 26.3% in 1990 to 19.9% in 2015 is largely attributed to the expansion of agriculture at the expense of forested areas, and more recently, to the expanding urbanization, which also encroaches on remaining forests. The underlying factors of these inadequate practices include the lack of capacity to produce and enforce policies and management plans to sustainably use watershed resources.

Comorian watersheds are under increasing pressures both from communities seeking to increase agricultural production and to fulfill their energy needs, as well as from climate change through impacts such as decrease in river water flows and drying of rivers. This is leading to decreases in soil fertility, water availability, and is placing livelihoods in danger from decreased productivity and extreme events such as unabated flooding during severe rainfall events.

Agricultural production techniques are unsustainable and provide low yields. Most farmers rely on manual work and struggle with little technical knowledge, low levels of input, and a general lack of diversification options. Traditional knowledge and practices, including traditional uses of plants and agro-forestry, are

gradually being abandoned to the benefit of less sustainable natural resource use practices, such as monoculture, slash-and-burn agriculture, and itinerant agriculture because of the decline in soil fertility. This leads to an acceleration of the degradation of the ecosystem services that provide a basis for livelihoods (for example soil fertility, nutrient cycling, moisture retention, micro and macro biodiversity), further exacerbating the prevalent poverty among rural populations in Comoros. This also leads to more pressure put on steep land that is unsuitable for agriculture, resulting in more soil erosion and further deforestation and watershed degradation.

Poverty in rural areas is mainly due to the low diversity of livelihood strategies within but also beyond agriculture. For instance, the livestock sector is not contributing to livelihoods as it could, due to low productive the animal breeds and sanitation issues. The fishing industry, although accounting for the highest source of protein, does not contribute enough due to a lack of infrastructure in terms of energy needs and supply chain management to conserve and bring produce to markets.[23]

The existing levels of degradation create a disincentive for communities to embark on large-scale ecological rehabilitation initiatives. Transhumant agriculture is often practiced as a coping mechanism, leading to land abandonment when ecological services have been exhausted. Due to high poverty levels, communities are to some extent risk averse, which means that few communities have explored alternative watershed management practices or alternative sources of livelihoods. According to the last report on sustainable land management (2014), intense flooding, and dry season coupled with high temperature are the main causes of degradation with 57.5% of agricultural land (65,335 hectares) degraded.[24] Land degradation per island is estimated to affect 33,000 ha (50%) in Grande Comore, 24,200 ha (65%) in Anjouan and 8,125 ha (52%) in Mohéli[25]. In addition to the agricultural sector, other key sectors of development are impacted by land degradation, including cattle breeding, reef fisheries (through the destruction of fish habitats via the flow of sediments into the ocean), drinking water and tourism (deterioration of ecosystems and reduced numbers of indigenous species of fauna and flora).

Comorian communities, autonomous islands' governments, and the national government presently lack the technical capacity, management capacity, institutional mechanisms, physical resources and financial resources to overcome and cope with the anticipated changes in climatic conditions. Moreover, the lack of integration between various sectors within a given watershed often exacerbates the competition for use of various natural resources, such as land, water, and biodiversity.

Local communities too have low technical capacity and limited knowledge and awareness on how to adapt their livelihoods to become resilient to climate change. For instance, small-scale water management for production barely exists and is inefficient.[26] The low availability and lack of access to information on ecosystems management emphasize the low community awareness and capacity to adapt to climate change.

This limited knowledge and awareness at government and community level is compounded by the limited access to information on ecosystems services. In the Comoros, there is limited information about forests and their role in maintaining ecological productivity and on the extent to which watersheds and their resources are degraded. Livelihood strategies also exacerbate this problem due to unsustainable agricultural practices. This is coupled with a lack of information regarding land tenure, property rights and stewardship duties among rural communities. All sectors face similar challenges of accessing and transferring information to local

[23] Stratégie de croissance accélérée et de développement durable (SCA2D) pour les Comores 2015-2019
[24] Plan d'Action National contre la Désertification aux Comores PAN/LCD - 2013
[25] Dernier Rapport d'évaluation, Gestion Durrable des Terres, 23 mars 2014 ; 2ème communication nationale
[26] SCA2D Comores 2015-2019

communities, due to a combination of remoteness, low levels of education, and a general cultural resistance to "government-imposed" solutions. Access to data and information is low, particularly in the area of hydro-meteorological monitoring, which hampers the government's capacity to make forecasts and predictions.

Associated Baseline Projects

There are a number of projects and programs in the Comoros addressing sustainable development, biodiversity, natural resources, and human development, but none of these address climate change and its negative impacts on watersheds as a central component. This creates an institutional, infrastructure and policy gap, which this project proposes to address. This project builds on four baseline projects:

The first baseline project on which this project will build upon is the **FAO Country Programming Framework (CPF)** (2014-2019, US$ 10,000,000). The CPF is jointly developed with the government of Comoros and other stakeholders and focuses on three priority areas that are in line with key national development policies, such as the new Rapid Growth and Sustainable Development Strategy (2015-2019) and the Growth and Poverty Reduction Strategy (2010-2014). The three priority areas of the CPF are: i) intensification, diversification and commercialization of agricultural and livestock production for improved food security, including efforts to foster a more competitive and diversified agriculture sector; ii) strengthening governance and sustainable management of forest and other natural resources, with an emphasis on agroforestry development; are iii) improving the collection and quality of agricultural statistics, including support to the national agriculture census and the establishment of a permanent agricultural information system. The CPF also takes into account sectoral policies such as the National Agricultural Strategy, the National Fisheries Strategy, the National Forestry Policy, and the Food and Nutrition Strategy. However, the CPF does not take into account climate change impacts on agriculture and natural resources. This project aims to fill this gap by assessing climate change risks and impacts on forests and watersheds, introducing integrated watershed management in the light of expected climate change impacts as an adaptation strategy to develop climate resilience of vulnerable rural communities, recognizing the interrelationships among land use, soil, and water, and the linkages between uplands and downstream areas. This will be complemented by the promotion of ecosystem-based and climate-resilient livelihoods strategies, which will include agroforestry practices, zero grazing small-stock production, value chain development of vegetable production, as well as the collection of knowledge on traditional plants to develop pharmaco-cosmetic plant-based products.

The second baseline project which this project will build upon is the **Comoros Social Safety Net Project (2015-2019, US$ 6,000,000),** which is supported by the World Bank through the Community Development Support Fund (FADC), with the objective of increasing poor communities' access to safety net and nutrition services. The project is made up of three components: (1) establish a productive and disaster responsive safety net, (2) improve the nutrition of young children and mothers from poor communities, and (3) strengthen safety net management, coordination, and monitoring evaluation. The project targets areas on each of the three islands and covers villages in each of the three watersheds covered by the LDCF project: Séréhini on Grande Comore, Nyumakele on Anjouan, and Mibani on Moheli. There is also partial overlap in the specific villages targeted, specificially Kiyo and Komoni on Anjouan and Hamavouna on Moheli. Although this social safety net project aims at building capacity of the vulnerable Comorian population to cope with disaster and malnutrition, it does not take into account future impacts of climate change. This project will add value to the social safety net programme through livelihood strategies that invest in ecosystems in order to achieve better food security for the local communities even with expected climate change effects.

The National Directorate of Environment and Forests (DGEF) of MAPEEIA implements several projects within the National Forestry Action Plan (NFAP) with support from various donors, including Japan who will

contribute US$ 200,000 focusing on forest management and rehabilitation and on water mobilization from 2015-2019. The NFAP includes the following components, which this LDCF project will build upon: (1) reorganization of the National Directorate of Environment and Forests and its decentralized services, as well as strengthened enforcement means, (2) strengthened communication capacity through data collection and dissemination, and (3) strengthened human capacity. This project will complement the capacity-building and training aspects of NFAP by providing training specifically on climate change and forest interlinkages, and integrated watershed management as an adaptation strategy. Furthermore, the assessments and the georeferenced information system to be developed under the LDCF project Component 1 will directly contribute climate change information to the data collection and dissemination activities to be implemented under NFAP. The NFAP also foresees to further the conservation of remaining forests through forest delimitation and planning activities. The LDCF project assessment and mapping exercises will contribute information to complete the datasets on remaining forests under NFAP, including information on climate change impacts.

A.1.3 Proposed alternative scenario, GEF focal area[27] strategies, with a brief description of expected outcomes and components of the project

The project will address the rapid degradation of watersheds and river basins in all three islands, which is expected to be exacerbated by increasing variability of rainfall intensity, drier periods and droughts as well as temperature increases. The overarching ***goal*** of the project is to build resilience to climate change in the Comoros. The project ***objective*** is to reduce the climate change vulnerability of communities in the Comoros by rehabilitating watersheds and forests and diversifying adaptive livelihoods. This will be achieved through the use of Ecosystem-Based approaches to Adaptation (EBA) and notably by using integrated watershed management (IWM) as an adaptation strategy, in the light of expected impacts of climate change on the watersheds. In particular, the project will strengthen the capacity for watershed management at the national and local levels, demonstrate the rehabilitation and sustainable management of watersheds, and support the adoption of diversified and resilient livelihood strategies in the project areas.

The proposed project is aligned with GEF Focal Area/LDCF/SCCF strategies.[28] Particularly, the following "Focal Area Objectives" are addressed in the proposed project:

CCA-2, Outcome 2.3: "Institutional and technical capacities and human skills strengthened to identify, prioritize, implement, monitor and evaluate adaptation strategies and measures" - Under Component 1, the project will: i) provide strengthened knowledge, information and tools for resilient watershed management, such as the development of watershed maps, a geo-referenced information system on climate change impacts for major watersheds or sub-catchments; ii) introduce participatory watershed planning and management as a climate resilient strategy through training and consult
ative processes; iii) establish an island-based intersectoral platform to develop an upscaling strategy for the resilient integrated watershed management practices; iv) develop policy briefs in order to make sure that technical staff are fully versed in integrated watershed management as a resilience building activity; v) collaborate with INRAPE and universities and training institutes to deliver courses on climate change, climate risk management and watershed management; and vi) develop mechanisms for securing access to land in

[27] For biodiversity projects, in addition to explaining the project's consistency with the biodiversity focal area strategy, objectives and programs, please also describe which Aichi Target(s) the project will directly contribute to achieving..

[28] GEF Programming Strategy on Adaptation to Climate Change for LDCF and SCCF (GEF/LDCF.SCCF.16/03/Rev.01, May 2014)

order to ensure farmers with sustained revenues (see Component 1: Output 1.1 and Output 1.2: activities 1.2.1 and 1.2.2). Indicator 9 will be used to measure the results of Outcome 1.[29]

CCA-1, Outcome 1.1: "Vulnerability of physical assets and natural systems reduced" – EBA interventions within Component 2 will: i) implement watershed rehabilitation and management plans through an integrated approach; ii) contribute to increasing water availability through anti-erosion and anti-flooding measures, and; iii) establish community conservation zones. (see Component 2: Output 2.2, activity 2.2.2). Indicator 2 will be used to measure the results of Outcome 2.[30]

CCA-1, Outcome 1.2: "Livelihoods and sources of income of vulnerable populations diversified and strengthened" – Within Component 3, the project will: i) promote resilient and alternative EBA livelihoods for rural communities, including agro-forestry, including zero-grazing small stock production and value addition; ii) collect and review traditional knowledge to develop pharmaco-cosmetic plant-based products (see Component 3: Output 3.1, activities 3.1.2; Output 3.2, activities 3.2.1 and 3.2.2). Indicator 3 will be used to measure the results of Outcome 3.[31]

The proposed project will intervene in one watershed per island (i.e. 3 main project sites) in the following locations, selected during the project preparation phase (i.e. inception workshop and subsequent meetings), in consultation with the Executing Agency and project stakeholders:

1. Grande Comore (Ngazidja) island: 5 villages will participate in the project in the central area of the island located within the Séréhini watershed, uniting three regions: Bambao region, where the capital of the Union of Comoros, Moroni is located; Hambou region; and Itsandra region.
2. Anjouan island (Nzwani): 5 villages will participate in the project, located within the Nyumakele watershed in the Mremani region (southern area of the island).
3. Moheli island (Mwali): 5 villages will participate in the project, located within the Mibani watershed in the Djando region (southern area of the island).

The selection of the watersheds in which the project will intervene was made on the basis of the following criteria: the state of natural resources, climate impacts, unsustainable practices (including slash-and-burn and shifting cultivation practices, the use of wood for distillation, river pollution from sanitation, and solid waste pollution), socioeconomic vulnerability, and commitment from local, national and international governments and partners.

The project will achieve its objective through the following three components:

Component 1 – Enhanced capacity to address climate risks through watershed management
Component 2 – Resilient watersheds and ecosystem-based adaptation demonstrations
Component 3 – Resilient and diversified ecosystem-based livelihoods for local communities

These project components, and the associated outcomes, outputs and activities are described below.

Component 1 – Enhanced capacity to address climate risks through watershed management

[29] Indicator 9: (a) Number of people (percentage of whom are female) trained to identify, prioritize, implement, monitor and evaluate adaptation strategies and measures; and (b) the degree to which the capacities of those people have been strengthened (measured e.g. through a capacity perception index).
[30] Indicator 2: Type and extent (and value, where applicable) of assets strengthened and/or better managed to withstand the effects of climate change (measured e.g. in ha of cropland/ rangeland/ catchments; km of coastline)
[31] Indicator 3: Number of people benefiting from the adoption of diversified, climate-resilient livelihood options (percentage of whom are female)

Under this component, the project will address the technical and institutional barriers to reducing vulnerability to climate change. This includes the development of a more comprehensive knowledge base on the state of the watersheds and the way in which climate change may affect ecosystem function in the watersheds, as well as understanding the impacts of climate change and vulnerability of the communities and the role the watersheds can play in adaptation. Sound technical and institutional capacity will be developed for the application of integrated watershed management as a key strategy for resilience-building.

Building on the strengthened knowledge base and tools developed, awareness will be raised about IWM as an adaptation strategy, and guidelines and training developed to support its introduction into public policy and climate risk management practice. The sustainability of the project interventions and their replication and upscaling will be further strengthened by the establishment of an intersectoral platform to develop an upscaling strategy. The platform will collect and disseminate project lessons, identify entry points for upscaling the project results and approaches, and assess long-term financing options, opportunities and barriers for the sustainability of the project.

Anticipated benefits of this component will be an increased knowledge base on watersheds and forests, an improved understanding of their and the communities' climate vulnerabilities and adaptation options, strengthened institutional and technical capacity within MAPEEIA (in particular within the DGEF) and local institutions, and the creation of tools and mechanisms for managing watersheds, for addressing or preventing land use conflicts, and for upscaling project results through better integration of IWM practices into national development processes.

This Component 1 addresses the GEF Adaptation Programming Strategy's **second objective**[32] ("Strengthen institutional and technical capacities for effective climate change adaptation"), in particular **Outcome 2.3**: *Institutional and technical capacities and human skills strengthened to identify, prioritize, implement, monitor and evaluate adaptation strategies and measures* and the corresponding **Indicator 9**: "Number of people trained to identify, prioritize, implement, monitor and evaluate adaptation strategies and measures"; and **Indicator 10**: "Capacities of regional, national and sub-national institutions to identify, prioritize, implement, monitor and evaluation adaptation strategies and measures".

This component will be fulfilled through the outcomes and outputs presented in Table 3.1, below.

Table 3.1: Outcomes and Outputs under Component 1

Outcomes	**Outputs**
Outcome 1. Strengthened technical and institutional capacity for resilient integrated watershed management at the national and local levels	Output 1.1 Assessments of climate change risks and impacts on Comorian forests and watersheds, contributing to a geo-referenced information system.
	Output 1.2 Training and information is provided to introduce integrated watershed management into public policy and practice as an adaptation strategy
	Output 1.3 A strategy and an intersectoral platform to sustain and replicate integrated watershed management are developed and

[32] GEF Programming Strategy on Adaptation to Climate Change for LDCF and SCCF (GEF/LDCF.SCCF.16/03/Rev.01, May 2014)

	institutionalized

Outcome 1: Strengthened technical and institutional capacity for resilient integrated watershed management at the national and local levels

Output 1.1 Assessments of climate change risks and impacts on Comorian forests and watersheds, contributing to a geo-referenced information system

Activities under Output 1.1 will build on the National Forestry Inventory (NFI), which was completed in 2011 with support from FAO, and which provided a knowledge base on forest distribution, species and diversity on the three islands. In order to complement the NFI, the project will support the completion of an assessment of possible climate impacts on forests and watersheds. Information generated from this project will also help finalize and adopt a map of watersheds for each of the three islands, which do not currently exist in any final form[33], and which prevents the effective management of watersheds.

The development of climate impact scenarios on forests and watersheds will support the design of "future forests" maps, which will allow the government to understand the potential long-term trends and evolution of forests and the impact on watersheds, and to plan land use accordingly. Climate change scenarios will be provided by the Meteorological Agency and the maps will be developed by the DGEF.

Climate change Vulnerability and Impact Assessments (VIAs) will be undertaken in the selected communities to improve understanding of the ways in which they may be impacted by climate change, the underlying causes of vulnerability, and adaptation options. The VIAs will integrate ecosystem considerations in order to inform the selection and implementation of ecosystem-based adaptation measures under project Component 2. The VIAs will be conducted through workshops and meetings in selected communities and will be based on a participatory approach to engage communities at the very start of the project implementation.

Furthermore, the project will develop key watershed and forest management tools that are lacking at the moment. This will take the form of a geo-referenced information system on watersheds, which will include socio-economic as well as environmental data, and will also allow the integration of downscaled climate information. Socio-economic and environmental data will be collected in each watershed using GPS and other GIS tools in order to create a baseline of information, which can be updated annually through participatory monitoring of the project's activities. The key socio-economic and environmental indicators to be tracked through the information system will be identified at the project inception stage, and the approach and institutional set-up for data collection and analysis will be explored with relevant project partners.

Watershed maps, the VIA process and its outcomes, and the geo-referenced information system will be used by local government officials to raise awareness in each community about integrated watershed management and its potential contribution to climate change adaptation, and to transfer knowledge about forest conservation. They will also serve as a basis for participatory land use planning, and ongoing watershed planning and territorial development at the municipal level, including under Components 2 and 3 of the project. In particular, highly degraded areas and areas for conservation could be marked in the mapping and

[33] In fact, there are conflicting versions of watershed maps, and no final, government-endorsed map has been published. As a result, the identification of watershed boundaries and limits, as well as the stakeholders within them, is difficult. This is also compounded by the fact that administrative boundaries cut across watersheds, and that the decentralized structures such as the former CADER, have either been transformed into CRDE, or closed, leading to a lack of decentralized capacity for watershed management.

information system in order to ensure measures are taken for restoration and conservation, allowing for a visual tracking of project results at local level.

The activities that will contribute to Output 1.1 include:

Activity 1.1.1 Develop a map of watersheds based on the National Forest Inventory (NFI) as well as climate-based forest maps for each of the islands (the state of forests with or without intervention, under a climate change scenario)

Activity 1.1.2 Undertake climate change Vulnerability and Impact Assessments (VIAs) in the selected communities, integrating ecosystem considerations, to inform the selection and implementation of ecosystem-based adaptation measures

Activity 1.1.3 Develop a geo-referenced information system on climate change impacts for major watersheds or sub-catchments, including socio-economic and environmental data, based on NFI and downscaled climate data available

Output 1.2 Training and information is provided to introduce integrated watershed management into public policy and practice as an adaptation strategy

Closely linked to the work under Output 1.1, activities under Output 1.2 are focused on raising awareness about IWM as an adaptation strategy, and on its introduction into public policy. This will strengthen the sustainability of the project interventions after the project lifetime, and facilitate their upscaling in other watersheds in the Comoros.

The project will work with the DGEF to analyze current watershed management practices (including informal land uses implemented by communities) in order to determine the constraints and opportunities for using IWM as a strategy for adaptation in the country. This will include an analysis of IWM factors of success, including local community mobilization, land tenure and property rights, traditional environmental knowledge, and an overview of institutional and policy issues to be addressed in order to make full effective use of the IWM methodology.

Based on the results and recommendations from this study, technical guidelines will be produced, on the basis of which awareness raising and training will be undertaken within MAPEEIA and among the targeted communities on the various uses of the IWM approach. This will also entail awareness raising on the contribution of healthy ecosystems for livelihoods and adaptation, and on the links between ecosystem-based adaptation, watershed management and forest rehabilitation and management. The purpose of this training will also be to harmonize approaches and methods used by the different stakeholders who engage in land-use related activities in the country. By strengthening the technical and institutional capacity of the Ministry as the main interlocutor for this area of environmental management, the project will help ensure that future interventions are consistent with the principles of IWM and EBA.

Building on lessons learned within Component 2’s implementation of watershed rehabilitation and management plans (reforestation, establishment of conservation zones, anti-erosive measures, etc), policy briefs and technical guidelines will be developed in consultation with identified key stakeholders, in order to enable the integration of IWM in policies and the future replication of IWM in other areas of the Comoros.

The project will also work with the National and Island Directorates of Environment and Forests to upgrade, sustain and upscale the skill set and institutional setup needed to ensure watersheds are managed in a sustainable and resilient manner. This will include working with the INRAPE, University of Comoros and other training institutions to develop courses, modules and technical certificates on climate change, climate risk management and IWM as strategies for resilience. This will help create a cadre of experts and knowledgeable personnel on which to rely for staffing in the future, within and outside the Ministry.

In addition, because issues of land tenure and access to land have been identified as a key institutional obstacle to IWM and sustainable forest use, the project will seek to strengthen the DGEF's capacity to develop viable and equitable mechanisms for access to land. The project will support consultations with land users (communities, private sector, government, army) in order to develop systems for collaborative land allocations that take environmental issues into account, while respecting the need for communities to access land for agriculture. The project will seek to implement past lessons learned in this regard, such as the use of the FAO's voluntary guidelines on the governance of land tenure systems, which provide avenues for preventing/solving conflicts related to access to land. The project will also work with relevant stakeholders active in the land certification and registration process in the Comoros.

The activities that will contribute to Output 1.2 include:

Activity 1.2.1 Analysis of current (explicit and implicit) watershed management practices, including of their potential for adaptation, and analysis of IWM factors of success (including local community mobilization, land tenure and property rights, traditional environmental knowledge, institutional and policy issues)

Activity 1.2.2 Introduction to participatory watershed management as a climate-resilient strategy through training and awareness raising among MAPEEIA staff and decentralized stakeholders in the environment, forest, water and agriculture sector

Activity 1.2.3 Develop policy briefs and technical guidelines for MAPEEIA and communities on the contribution of healthy ecosystems for livelihoods and adaptation, and the integration of ecosystem-based adaptation into watershed and forest rehabilitation and management (based, inter alia, on lessons learned from Component 2)

Activity 1.2.4 Work with INRAPE, the University of Comoros, and other technical and vocational training institutes in Comoros to develop and deliver courses on climate change, climate risk management and watershed management

Activity 1.2.5 Develop mechanisms for securing access to land, including through the application of the FAO's voluntary guidelines on the governance of land tenure systems.

Output 1.3 A strategy and an intersectoral platform to sustain and replicate integrated watershed management are developed and institutionalized

Output 1.3 will focus on enhancing the sustainability of the project interventions, and on enabling their replication and upscaling in the Comoros, the region, and internationally. As a mechanism for upscaling and replicating project results and lessons, the project will support the creation of an island-based intersectoral platform which will gather and analyse project lessons, disseminate them nationally and internationally, review relevant policies and strategies to identify entry points for upscaling the project results and approaches, and to identify areas of policy and legal harmonization needed, and assess long-term financing options,

opportunities and barriers for the sustainability of the project. The intersectoral platform will be tasked with the integration these findings in the development of a strategy for upscaling the IWM approaches and practices introduced by the project.

Consistent with lessons learned from other projects, this platform will be established at a relatively early stage in the project (second half of the second year), rather than at the tail end of the project, to allow for the gradual building of trust and cooperation, and to provide sufficient time for policy processes to take place. A platform will be convened on each of the three islands, chaired by the Environment Commissioner of the island, bringing together all relevant sectoral stakeholders - agriculture, forestry, water -as well as the private sector and NGOs. An inter-island platform will act at the Union level to address national-level policy issues that may provide opportunities for upscaling the resilient IWM practices introduced by the project and for integrating IWM into relevant development planning frameworks.

The activities that will contribute to Output 1.3 include:

1.3.1 Collect lessons from demonstration activities (Component 2) and disseminate them nationally and internationally

1.3.2 Establish an island-based intersectoral platform to develop an upscaling strategy, including: financing options, opportunities and barriers and review of relevant policies and strategies to identify entry points for upscaling the integrated watershed management practices introduced by the project

Component 2 – Resilient watersheds and ecosystem-based adaptation demonstrations

Under this component, the tools and capacity developed and knowledge acquired on integrated watershed management and climate change through the first component will be put into action to demonstrate the rehabilitation and sustainable management of watersheds on each island.

The project will support the development of collaborative sub-catchment and/or watershed rehabilitation and management plans through consultative processes. Following the training of local communities on climate risk management, watershed management and EBA, resilient integrated watershed management techniques and approaches will be implemented in one watershed per island, thus directly addressing the current inadequate management of watershed resources outlined in Section 2.3.

This will be done using an ecosystem-based management approach, whereby activities to rehabilitate and manage degraded ecosystems (including reforestation using resilient species, anti-flooding and anti-erosive measures, and the establishment of conservation zones) will be accompanied by measures to monitor environmental parameters and the ability for ecosystem-based approaches to mitigate the effects of climate change and extreme events, resulting in reduced impacts on local communities' livelihoods. This component will include activities implemented in close partnership with local communities at the selected pilot sites to rehabilitate degraded ecosystems that form the basis for their livelihoods.

This component addresses GEF Adaptation Programming Strategy's **first objective** [34] ("Reduce the vulnerability of people, livelihoods, physical assets and natural systems to the adverse effects of climate change"), in particular **Outcome 1.1**: *Vulnerability of physical assets and natural systems reduced*, and the

[34] GEF Programming Strategy on Adaptation to Climate Change for LDCF and SCCF (GEF/LDCF.SCCF.16/03/Rev.01, May 2014)

corresponding **Indicator 2**: "Type and extent of assets strengthened and/or better managed to withstand the effects of climate change".

This component will be fulfilled through the outcomes and outputs presented in Table 3.2, below.

Table 3.2: Outcomes and Outputs under Component 2

Outcomes	Outputs
Outcome 2. Rehabilitated and sustainably managed watersheds and sub-catchments in project areas	Output 2.1 Watershed rehabilitation and management plans and implementation mechanisms adopted by communities
	Output 2.2 3,500 ha of the targeted watersheds are rehabilitated through reforestation, conservation and anti-erosive measures

Outcome 2: Rehabilitated and sustainably managed watersheds and sub-catchments in project areas

Output 2.1 Watershed rehabilitation and management plans and implementation mechanisms adopted by communities

In each of the selected watersheds on the three islands, the process will begin by the participatory development of Watershed Management Plans (WMPs). Using the information generated under Component 1 on climate change impacts and vulnerabilities, these plans will include watershed rehabilitation plans, as well as collaborative land-use mechanisms in which all land users are equitably represented. The mechanisms for land allocation among different uses (forest conservation, charcoal production, agriculture) will be expressed in agroforestry land use plans at the community scale, to be developed under Component 3.

In each community, facilitators will conduct consultations for the identification of current land uses as well as ecosystem rehabilitation and conservation objectives that will allow for achieving a balance between ecosystem services and sustainable production, while reducing the communities vulnerability to the impacts of climate change.

The WMPs will also include mechanisms for implementation and enforcement, and will be designed so as to facilitate inter-village cooperation, as well as collaboration with other land users and local municipal law enforcement. The DGEF will act as a facilitator for the development, design and enforcement of the agreements throughout the duration of the project. Partnerships will be developed with municipal law enforcement and with community groups to support long-term enforcement, while the monitoring process set up in Component 1 will also provide continued data to assist with the management of rehabilitated zones.

The activities that will contribute to Output 2.1 include:

2.1.1 Support community-based negotiations towards the development of collaborative sub-catchment and/or watershed rehabilitation and management plans and implementation mechanisms, that aim at reversing human-induced watershed degradation and integrate climate risks and impacts, using the models and information produced in Component 1.

Output 2.2 3,500 ha of the targeted watersheds are rehabilitated through reforestation, conservation and anti-erosive measures

In order to further support the implementation of the WMPs developed under output 2.1, the project will provide extensive training to local authorities, traditional leaders, and communities on the principles of watershed management, ecosystem-based adaptation, and climate risk management. This will help in building awareness and understanding of the potential benefits of IWM as an adaptation strategy, and to empower local communities to develop home-grown strategies that respond to their own priorities, as well as to promote local enforcement. The participants will also be trained to monitor and sustain adaptation interventions in the longer term. Climate data and watershed maps from Component 1 will be used to engage communities in the training.

The training will create the basis on which to implement the WMPs. Trained community stakeholders will implement the WMPs, with local NGOs and contractors, through an integrated approach including the following measures:

a. Reforestation using resilient multi-purpose species with proven soil restoration properties (as predetermined by studies conducted through other projects, such as the LDCF-funded ACCE project), and the establishment of dedicated woodfuel production lots;
b. Anti-erosive and anti-flooding measures, including stone dykes and small retaining walls, terracing on cropped land, as well as anti-fire corridors;
c. Well delimited crop and livestock areas with limits on expansion, and the establishment of cropping plots through fencing, bunding, and other soil conservation measures. This will be undertaken in concurrence with Component 3 activities supporting the development of better agricultural production techniques; and
d. Establishment of temporary and/or permanent community conservation areas, with defined no-take zones, designed to increase the watershed rehabilitation rate, in particular in and around headwaters.

Each community will determine the location and boundaries of the activities with the support of technical experts and the DGEF. The execution of these works will rely on community-based organizations, local NGOs as well as private sector actors for the more intense labor.

It is expected that by the end of the project, communities will have rehabilitated 3,500 ha of watersheds on the three islands (400 ha per year in Grande Comore, 250 ha per year in Anjouan and 225 ha per year on Moheli).

The activities that will contribute to Output 2.2 include:

2.2.1 Conduct local training on climate risk management, watershed management and ecosystem-based adaptation in project sites

2.2.2 Implement watershed rehabilitation and management plans, developed under output 2.1, through an integrated approach, including: reforestation using resilient species; anti-erosive and anti-flooding measures; establishment of temporary and/or permanent community conservation zones.

Component 3 – Resilient and diversified ecosystem-based livelihoods for local communities

Under this component, the project will introduce and implement a diversified array of climate-resilient alternative livelihood strategies in targeted communities. This will include the development of potential

innovative livelihoods pathways, such as renewing the exploitation and commercialization of traditional plants and other niche food and cash crops, all within an integrated watershed management approach.

By reducing pressures on the environment, this approach will help to maintain the ecological services that form part of resilience; as well as reducing the vulnerability of communities to climate shocks by providing them with sustainable development pathways. The diversified livelihoods will support sustainable land and water use and decrease incentives towards unsustainable natural resources use. It is expected that increased productivity and income from the sustainable use of natural resources and the restored ecosystem services will provide continued incentives for the communities to practice resilient integrated watershed management in order to sustain livelihoods. These development results will be tracked.

This component addresses GEF Adaptation Programming Strategy's **first objective** [35] ("Reduce the vulnerability of people, livelihoods, physical assets and natural systems to the adverse effects of climate change"), in particular **Outcome 1.2**: *Livelihoods and sources of income of vulnerable populations diversified* and the corresponding **Indicator 3**: "Number of people benefiting from the adoption of diversified, climate-resilient livelihood options".

This component will be fulfilled through the outcomes and outputs presented in Table 3.4, below.

Table 3.4: Outcomes and Outputs under Component 3

Outcomes	**Outputs**
3. Increased and sustained income from alternative livelihood strategies among project communities	Output 3.1 Ecosystem-based livelihoods, such as agroforestry practices are adopted among project communities
	Output 3.2 Climate-proof innovative sources of livelihoods adopted in project communities

Outcome 3: Increased and sustained income from alternative livelihood strategies among project communities

Output 3.1 Ecosystem-based livelihoods, such as agroforestry practices are adopted among project communities

Building on the WMPs developed under Component 2, communities will develop climate-resilient and ecosystem-based land use plans through a consultative participatory process. These land use plans will help communities determine the areas dedicated to cropping and agroforestry, as well as the type of crops and interventions to be promoted in each village.

Beneficiaries will be encouraged to associate into producer groups, so as to strengthen cooperation, increase resource efficiency, maximize land use, and to facilitate training and capacity building. Technical support as well as inputs for small stock production will be provided by the project. The project will also provide technical support and input acquisition towards a value-chain approach that will include all aspects of production, transformation and marketing. In addition, technical support and tools will be provided to identify

[35] GEF Programming Strategy on Adaptation to Climate Change for LDCF and SCCF (GEF/LDCF.SCCF.16/03/Rev.01, May 2014)

and analyze constraints to production in order to relieve farmers from crop and livestock loss due to pests or parasites.

The implementation of these community-driven plans will include the following interventions, which were selected during the project preparation phase, based on community consultation and preliminary technical advice. Further feasibility studies, market assessments and cost-benefit analyses will be conducted during inception in order to inform the development of the community-based plans.

a. The project will support the development of zero-grazing small stock value chains, such as dairy cows, chicken and egg production, and goats. It has been determined that a local market exists for such products, provided that producer groups can be adequately supplied with necessary inputs, and that phytosanitary and veterinary constraints can be overcome. This will include the provision of animals, materials for fencing and protection, as well as small transformation and packaging equipment, in order to facilitate commercialization. This will also be done by building on the established producer groups, with particular attention to women's producer groups.

b. The project will support the deployment of enhanced fruit and vegetable production, which, at the moment, remains at an artisanal and subsistence level, despite the availability of high-quality source materials. The project will support the production and processing of vegetables and vegetable products (for example tomato conserves and sauces, peppers and spice assortments, etc). This activity will be deployed with the support of a value chain specialist, who will be able to help communities identify and overcome constraints to production and commercialization, while providing support to the implementation of sustainable production techniques.

In order to further support agricultural production in the targeted areas, the project will seek to identify and address the major phytosanitary constraints experienced by various producers. Plant and animal diseases have been known to decimate entire stocks and crops in the past, without well-defined causes and solutions. Therefore, the project will seek to ensure that investments into production systems also provide adequate training and capacity to address pests and diseases, in particular those that are related to changes in climate or land use.

In addition, the project will also support the installation of water conservation and mobilization infrastructure in project sites. This will help address climate-related water constraints to production, including accelerated run-off, low soil water retention, and the unpredictability of rainfall. For those sites which do not have an immediate source of water, the project will support the installation of small rural hydraulic infrastructures, such as cisterns, buried reservoirs, or impluviums, depending on their feasibility. Their location and type will be determined through the consultations for the development of the WMPs, and detailed technical design will be supported by MAPEEIA before implementation.

The activities that will contribute to Output 3.1 include:

3.1.1 Based on integrated watershed rehabilitation and management plans (Component 2), establish community-agreed climate-resilient agroforestry land use plans

3.1.2 Implement ecosystem-based livelihoods production strategies, focusing on climate-resilient production activities and using a value-chain approach

3.1.3 Analyze and address phytosanitary constraints to production, including pests and parasites affecting crops and livestock

3.1.4 Develop small rural hydraulics for water harvesting and conservation (cisterns)

Output 3.2 Climate-proof innovative sources of livelihoods adopted in project communities

The project will also seek to develop new and innovative sources of livelihoods that are less at risk of climate change and that provide viable diversification avenues for communities. One such avenue that was identified during project preparation is the cultivation, preparation and commercialization of natural medicinal and cosmetic products.

An analysis of traditional knowledge and practices in Comoros has revealed that many indigenous herb species have in the past been used for traditional medicinal purposes. Preliminary scientific research into these applications during the project preparation phase (see Appendix 18 for the full report) has also shown significant potential for natural medicinal applications using local species and plants.

These species include, for example, *Tambourissa leptophylla,* which is a tree endemic to the Comoros, and whose fruits are used traditionally for the treatment of malaria, diarrhoea, and wound healing. Other species, like clove, are already among the main cash crops in the country. This plant is well-known worldwide both as a spice and in traditional medicine. The phytochemistry and biological activities of clove have been extensively studied. Reported therapeutic potentials include antioxidant, antimicrobial, antiparasitic, insecticidal, anticancer, anti-inflammatory and analgesic activities, to name a few.

The following course of action would allow for significant multiple benefits to be realized:

a. Conservation of traditional indigenous knowledge, which is gradually disappearing with older generations,
b. Conservation of local biodiversity and potentially genetically important species and varieties, including endemic species, and
c. Creation of producer groups which can earn income while providing access to viable alternative medicine options for minor ailments to those who may not have access to medical services. At present, while the Comorian population uses natural medicines, all the supplies are imported, making them too expensive.

Through this project, traditional knowledge on pharmaco-cosmetic uses of plants will be collected and reviewed with the participation of local NGOs, the University of Comoros, and community stakeholders. In addition, other niche food crops will be investigated in consultation with community stakeholders to identify potential cash crops. A shortlist of products will be selected in cooperation with producer groups and national authorities, based on criteria combining ecological appropriateness, value for watershed rehabilitation, as well as climate resilience and, most importantly, feasibility of production and transformation.

It is expected that through this project, a few producer groups, comprised mainly of women of all ages, will be supported in acquiring the adequate knowledge on the cultivation, uses, administration of medicinal plants.

They will also be supported in developing a commercialization and marketing plan, using local markets, and including a certification process that may allow for expanding market access later on.

This activity will be realized in cooperation with international phyto-cosmetic experts, in partnership with the Herbier des Comores, which has worked over the past few years to catalogue and characterize the medicinal value of indigenous plants. This will also help make linkages to the activities undertaken under the CBD and the International Treaty on Plant Genetic Resources.

The activities that will contribute to Output 3.2 include:

3.2.1 Collect and review traditional knowledge on pharmaco-cosmetic plant-based products and niche food crops with a view of identifying potential cash crops for diversification (including environmental impact, socio-economic potential and policy barriers)

3.2.2 Organize producer groups, particularly women's groups, towards the production and marketing of niche pharmaco-cosmetic plants

A.1.4 Additional cost reasoning and expected contributions from the baseline, the GEFTF, LDCF, SCCF, and co-financing

Outcome	Baseline and Gaps	GEF Alternative	Additional adaptation cost
1. Strengthened technical and institutional capacity for resilient integrated watershed management at the national and local levels	There is a lack of institutional and technical capacity to plan and implement climate change adaptation in the Comoros. This is characterized by a lack of data and information on climate change impacts and vulnerabilities, a limited inclusion of climate change adaptation in policies and frameworks, and an absence of guidelines to help communities build technical capacity to adapt to climate change impacts, further emphasized by a lack of intersectoral coordination. Although the FAO Country Programming Framework (CPF) contributes to the strengthening of governance and sustainable management of forest and other natural resources with an emphasis on agroforestry development, there is no plan for building capacity to use integrated watershed management as	GEF financing will support the assessment of climate change impacts on forests and watersheds through the development of a geo-referenced information system on climate change impacts. It will also support the introduction of IWM into public policy through training and awareness raising of MAPEEIA staff on integrated and participatory watershed management as a climate resilient strategy to support vulnerable rural populations in adapting to future climate change. For longer-term impact, a strategy and an intersectoral platform will be developed and institutionalized to sustain and replicate climate-resilient integrated watershed management, through the collection of lessons learned in Component 2 and their dissemination nationally and internationally.	US$ 781,473

	an ecosystem-based approach to help Comorians adapt to climate change. Even though the Comoros Social Safety Net Project aims at building a productive and disaster responsive safety net, and strengthening safety net management, coordination, and monitoring and evaluation, this project does not take climate change impacts into account. While the National Forestry Action Plan (NFAP) aims to build the capacity of DGEF and other relevant actors on forests, and strengthen data collection and dissemination, it does not directly consider climate change impacts and interlinkages.	GEF financing will also add a resilient and sustainable aspect to the Social Safety Net Project by supporting community-based development of collaborative watershed management plans, agroforestry land use plans, and ecosystem-based livelihoods strategies, incorporating climate change risks and climate resilient and sustainable strategies. GEF financing will complement the capacity-building aspects of NFAP by providing training on climate change and forest interlinkages, and integrated watershed management as an adaptation strategy. The assessments and information system to be developed will also contribute climate change information to the NFAP data collection and dissemination activities, as well as to planned work on forest delimitation and management planning.	
2. Rehabilitated and sustainably managed watersheds and sub-catchments in project areas	Comorian watersheds are under increasing pressures both from communities seeking to increase agricultural production and to fulfill their energy needs and the limited capacity and resources prevent the implementation of sustainable forest management and watershed rehabilitation. While there are projects promoting the rehabilitation and management of forests as well as water recovery (funded by Japan), it is not planned through a participatory process with the construction of anti-erosive measures, anti-flooding measures and conservation measures. Although the FAO Country Programming Framework (CPF) will contribute to strengthening sustainable management	GEF financing will support the rehabilitation of 3,500 ha of watershed through integrated watershed management as an ecosystem-based adaptation approach, including reforestation, conservation and anti-erosive measures. It will facilitate community-based negotiations for the development of collaborative sub-catchment watershed rehabilitation and management plans. It will also support the building of local capacity to cope with climate risk and implement watershed management.	US$ 1,850,710

	of forest and other natural resources, it does not assess climate change risks and impacts on forests and watersheds.		
3. Increased and sustained income from alternative livelihood strategies among project communities	Poverty in rural communities of the Comoros is mainly due to the low diversity of livelihood strategies within, but also beyond, agriculture. For instance, the livestock sector is not contributing to livelihoods as it could, due to the low productivity of the animal breeds and sanitation issues. While some projects (FAO CPF; PNDHD) support intensification, diversification and commercialization of agricultural and livestock production for improved food security, including efforts to foster a more competitive and diversified agriculture sector and to reduce poverty by promoting better natural resource management in order to raise agricultural production, these projects do not include innovating in niche products, nor do they promote a participative and integrated approach to reach their goals.	GEF financing will support the development of sustainable livelihood strategies such as resilient agroforestry and zero-grazing small stock production among project communities (including chicken hatcheries, egg production, young goats and cash cows) and vegetable and fruit processing with value chain management; as well as the development and deployment of climate-proof innovative sources of livelihoods, including pharmaco-cosmetic plant products.	US$ 2,062,816

Co-financing by sources and types:

Name of Co-financier	Type	Amount in US$
DGEF	In-kind	280,000
DNSAE	Grant	10,000,000
DGEF	Grant	200,000
FADC	Grant	6,000,000
Total		**16,480,000**

Total co-financing amount by source for each component of the project:

	DGEF (in-kind)	DNSAE	DGEF	FADC
Component 1	-	3,300,000	200,000	1,500,000
Component 2	-	1,200,000	-	500,000
Component 3	-	5,500,000	-	4,000,000
Project Management	180,000	-	-	-
Monitoring & Evaluation	100,000	-	-	-
TOTAL	**280,000**	**10,000,000**	**200,000**	**6,000,000**

A.1.5 Adaptation benefits

The proposed project is expected to benefit 38,306 people on the three islands of Comoros by putting into place watershed management plans and rehabilitating 3,500 hectares of watershed, as well as helping 2,000 people to adopt climate resilient and ecosystem-based livelihoods, 50% of which will be female, resulting in a 20% increase in average annual income in the targeted households. The project will also train 150 community members on watershed planning and ecosystem rehabilitation and climate resilient livelihoods, of whom 40% at a minimum will be women, and strengthening the capacities of 5 institutions on adaptation planning in the watersheds based on investments in restoring ecosystem function, monitoring and evaluation. A capacity assessment scorecard approach will be developed during the inception phase and used to measure an increase of planning capacities of at least 50%.

The restoration and improved management of watersheds will be implemented through an ecosystem-based approach that should provide low-cost and effective means for securing and enhancing multiple ecosystem benefits for vulnerable communities in all three islands of the Comoros. Such benefits will most likely include: i) increased water availability and supply; ii) reduced land and soil degradation; iii) improved soil fertility, leading to improved agro-forestry production; iv) mitigation of the effect of floods and landslides; v) improvement and potential increase in biodiversity, and vi) improved livelihoods. Overall, benefits generated through the proposed project should have a positive ripple effect in terms of mitigation of climate-induced events, as well as poverty reduction through diversified and sustainable livelihoods. The key socio-economic and environmental indicators will be tracked to enable this causality to be evidentially established for Comoros.

The adaptation benefits of this project are expected to include: 1) gains in agro-ecological productivity; 2) reduced loss of forests and water (3,500 ha of watersheds will be rehabilitated and sustainably managed); 3) reduced losses of infrastructure and livelihoods; 4) increased water availability thanks to the development of small rural hydraulics for water harvesting and conservation; 5) increased biodiversity; 6) increased livelihoods and income (at least a 20% increase in average annual income in each project community and at least 1,000 people will adopt new livelihood strategies, of which 500 will be women).

The project will provide fundamental adaptation benefits to the country in the form of increased adaptive capacity among key institutions, including the agriculture, forestry and water sectors, who are most affected by climate change. Capacity constraints and barriers will be lifted through this project, through the creation of enabling tools and frameworks, guidelines, and the development of emerging capacity and expertise with local NGOs and academic institutions. Knowledge, data and policy-relevant information will also be provided by this project as a key adaptation benefit.

Finally, once implemented, the project will offer the potential of being scaled up to other watersheds, therefore reinforcing the climate change adaptive capacity of various communities on all three islands of the Comoros.

A.1.6 Innovativeness, sustainability and potential for scaling up

Innovativeness

The project seeks to implement an innovative approach to adaptation in the Comoros, by focusing on the rehabilitation of watersheds and ecosystems as a means to reduce community vulnerability to climate change. The project will introduce integrated watershed management as a no-regrets option for resilience and adaptation that can achieve development results such as protection of water supply, environmental rehabilitation as well as poverty reduction. The project will also introduce innovative measures such as island-based intersectoral platforms to develop an upscaling strategy and to demonstrate the links between a healthy environment and livelihoods, integrating new technologies such as GIS and crowd-sourcing platforms to empower local natural resources management. The project will also work with local NGOs and academic institutions to develop emerging capacities in the country. Finally, the project will seek to pilot economic innovations through the use of niche plant-based products (pharmaco-cosmetics and food crops) towards sustained diversification of livelihoods in the face of emerging climate conditions.

Sustainability

This project includes considerations that promote the continued achievement of its objectives and outcomes after the completion of its implementation. One of the challenges of many international development projects in developing countries is the lack of continuity once the project concludes. In order to ensure that the investments of the project do not meet the same challenges, several key principles that support sustainability will be advocated:

Country ownership, which will include:

- Partnering with public institutions including national, departmental and local governments and structures, and supporting them to establish their own effective management structures during implementation,
- Working with community-based organizations,
- Supporting interventions that reinforce government plans and activities, and that can be integrated into government policies, which will make project interventions and results more relevant to government institutions,
- Working with the government, non-governmental organizations, community-based groups and the research community in Comoros to build home-grown adaptation capacity and knowledge which will outlast the project's interventions, and
- Working at the village level, leading to greater ownership and participation of local communities, resulting in the integration of resilient practices in local activities. The development of alternative and adaptive livelihoods is expected to open the gateway to more resilient income-generating activities in the long-term, and provide economic incentives for sustainable activities.

Promoting a learning-by-doing approach will allow beneficiaries of the project to put into practice the approaches and strategies proposed in the project and share new knowledge and lessons learned on ecosystem rehabilitation, agroforestry techniques and small livestock production. The project will be adaptive in nature for this very purpose: to identify the activities that are most sustainable and beneficial leading to improved

livelihoods. The improved livelihood strategies will be piloted and adapted to optimize the achievement of results.

Implementation of effective capacity building, awareness raising and communication strategies will also contribute to the sustainability of the project's long-term impacts. The communication strategies will foster long-term commitment of local government and communities to implement IWM thanks to:

- Continuous awareness raising on participatory watershed management and its role in climate change adaptation within the selected villages and watersheds in each island,
- The development and delivery of training and courses on climate change, climate risk management and watershed management, provided not only to government institutions but also to targeted communities of the project, and
- The national and international dissemination of the lessons learned through the project, which facilitate the replication of the project in other watersheds.

Specific mechanisms and processes will also be put in place in the course of the project implementation to ensure the long-term sustainability of the project interventions. In particular, the establishment of an island-based intersectoral platform (Output 1.3) will provide a platform for continued dialogue on IWM as an adaptation strategy. The development of the watershed rehabilitation and management plans and implementation mechanisms (Output 2.1) will put in place the processes and structures for ensuring, together with the training provided to local communities, the long-term follow-up and monitoring of the project interventions.

Interventions in the policy area, beyond contributing to already established country priorities and needs, will also serve in the long-term, by promoting new thinking and investments into forests and watersheds as mechanisms to promote resilience.

Upscaling

The project components have the potential to be scaled up in order to ensure greater aggregate impact at the national level and beyond. By increasing capacity at the institutional level (Component 1), and through inclusion and participation at the stakeholder level, the project ensures that agency and capacity remains in the country. The introduction of integrated watershed management as an adaptation strategy into public policy and practice under in Component 1 will put in place the information, awareness and capacity needed for its integration in relevant sectoral and development policies to support systematic upscaling of the project interventions.

Stakeholders can apply the expertise gleaned in this project and can expand and adapt it. Reforestation and watershed rehabilitation, when successful, can easily be replicated and upscaled in other sites. The project will seek to learn from previous experiences and successes in this area, as well as identifying lessons from implementation of demonstration activities and disseminating them within the Comoros and internationally (Component 2). Indeed, demonstrations conducted in Component 2 will prove that the concept of ecosystem-based adaptation approach works in the Comorian context and will provide an example for replication. The interventions on alternative livelihoods (Component 3) is a foray into upscaling community and private sector activities for income generation, and provides a pivotal first step for enhancing economic activity at a larger scale.

More specifically, this project will be replicated and up-scaled not only through local NGOs who will take part in the implementation of most activities, but also thanks to the establishment of an island-based intersectoral platform for the development of an upscaling strategy. The upscaling strategy will include

financing options, opportunities and barriers, and a review of relevant policies and strategies to identify entry points for upscaling the resilient integrated watershed management practices introduced by the project (activity 1.3.2).
Furthermore, replication and upscaling will be possible because of the training and awareness raising among MAPEEIA staff and decentralized stakeholders in the environment, forest, water and agriculture sector on the benefits of participatory watershed management and ecosystem-based adaptation (activities 1.2.2 and 2.2.1). Finally, through the support of community-based negotiations, stakeholders will be fully engaged in the development and implementation of watershed rehabilitation and management plans (activities 2.1.1 and 2.2.2), and will be able to transfer lessons learned and new knowledge to neighboring communities in order to upscale the project's results.

A.2. Child Project?

This is not a child project under a program.

A.3. Stakeholders

Given the scope of this project, there is a need for the involvement of a variety of stakeholders. Stakeholder participation and validation of key processes is expected for all activities, commencing with their engagement in the project preparation phase. The communities, institutions and partners in this project have been involved from the start in the project's design, during the project preparation phase, in order to ascertain buy-in and ownership of project activities. The project preparation phase included workshops and local level consultative forums, including participatory vulnerability assessments and the assessment of potential impacts to the environment, and discussions with all stakeholders involved. Among these, the Project Preparation Inception Workshop (held in March 2015) brought together all stakeholders and potential partners, and other prospective stakeholders that were identified during the course of project preparation.

A second consultation mission took the project preparation team to all suggested project sites, during which there were village-based focus groups and discussions on the main challenges and vulnerabilities. During the focus groups, vulnerable groups such as women, youth and the elderly were particularly active in expressing their concerns. They will be specifically targeted in this project, in particular through component 3 which will provide activities designed around their specific needs, capacities, knowledge and social roles.

Finally, the validation workshop, which took place in December 2015, brought together project stakeholders from each island, including representatives from NGOs and specific sectors (water, agriculture, livestock, forestry), to discuss the final list of project activities and expected results.

Stakeholders have been consulted since the onset of project development to help:

- Identify and select criteria for site selection,
- Gather local climate change observations for each selected site,
- Validate the project's components, outcomes and outputs,
- Identify local needs and socioeconomic factors,
- Identify ongoing projects and other initiatives relevant to the project activities, and
- Define potential project stakeholders and partners as well as opportunities for coordination and synergies.

The implementation strategy for the proposed project also includes extensive stakeholder participation. A wide range of government institutions, non-governmental organizations, as well as the University of the Comoros will be involved in the implementation of project activities where necessary and possible,

particularly for their scientific and technical expertise. The various outputs that will be delivered under the project outcomes will fully integrate the expertise available in the country and improve upon what is presently available, whilst also providing a platform for knowledge exchange and mutual learning.

Community ownership will be promoted through the full engagement of local stakeholders in the planning, implementation and monitoring of many of the project activities.

During project implementation, stakeholder consultations will be divided into three phases. Firstly, the 'mobilisation phase' will take place during the first year of the project. This phase includes the following: i) developing time specific details of the activities and local management structures for implementation; ii) forging partnerships for action; and iii) developing and agreeing to the extent of stakeholder engagement in each activity. Secondly, the 'consultative implementation' phase will run during the main implementation phase of the proposed project. This phase involves applying the stakeholder involvement plan to each of the activities defined during the first phase. Thirdly, the 'completion and upscaling' phase will start during the last year of project implementation. This phase will support the sustainability of the project by transferring responsibility for management of the proposed project's investments to the stakeholders.

A list of key stakeholders is provided below:

Government Stakeholders - These stakeholders will coordinate almost all activities in project execution and will report back on successes and challenges. The Ministry for Agriculture, Fishing, and the Environment in charge of Energy, Industry and Handicrafts (MAPIEEA) will be the national executing partner, through the National Directorate of Environment and Forests (DGEF). The National Directorate of Energy and Water Resources (DGEME) will also be an active partner in the project, and along with the National Strategic Directorate of Agriculture and Livestock (DNSAE), will benefit from the project's interventions. These two directorates will be partners in the delivery of local activities designed to implement livelihoods diversification and watershed rehabilitation interventions.

The governments of each of the islands will naturally be essential partners in the project, along with the decentralized technical services, including Rural Economic Development Centres (CRDE - former Centres of Agricultural Expertise) and other extension services. The National Research Institute on Agriculture, Fisheries and Environment (INRAPE) will also participate in the project, along with other academic and research institutions, to develop options for the creation of new expertise in watershed management in Comoros.

The project will also provide dedicated coordination staff in each island (in the same model as previous LDCF projects in the Comoros[36]), with potential cost-sharing arrangements.

The water utilities in each island (MamWE in Grande Comore, UCEA and UCEM in Anjouan and Moheli) will also be invited to participate in the project development and implementation of the provision of water-related and flood-control activities in the project. Their contribution on the monitoring of water services in the project's targeted areas will also be essential.

Local Community Organizations - These actors will be at the forefront of implementing the project's activities and will be the primary recipients of capacity building. This includes Village Development Associations, which are community-based organizations in each village in the Comoros; and Ulanga (Nature) associations whose activities focus on environmental awareness-raising through events, including days

[36] "Adapting water resource management in the Comoros to expected climate change" (ACCE project)

dedicated to cleaning, tree-planting, and domestic waste cleaning. Very often these associations are created and run by youth. Natural Resources Management Groups as well as water user groups will also be included. Because of the role women play in managing natural resources, mainly through fuelwood collection and agriculture, the project will place special emphasis on ensuring that women are consulted and involved in project activities, through existing women's groups. Targeted capacity building efforts will be made and project activities will be designed in a way so as to ensure that women can benefit from resilient technologies and practices, including labor-saving technologies, while also ensuring that women benefit from any increased income from resilient watershed use practices and alternative livelihoods sources.

A key cornerstone of this project is the development of community-wide watershed and land use plans, in which all land users will participate. This will allow for the development of informal or formal agreements on land use sharing and benefit sharing, and provide a basis for enforcement. The use of the FAO's informal guidelines on land tenure will also contribute to this process.

The participation of local stakeholders in the selection and implementation of adaptation interventions will promote local ownership and support for project activities in the implementation phase, as well as strengthening their sustainability after project completion.

NGOs and Educational Organisations - NGOs will provide linkages, research as well as logistical support when needed. They will also be part of consultative processes to ensure that the project has a bottom-up approach and responds to the needs of communities. This includes the tentative list of NGOs and educational and research organizations below (additional stakeholders will be identified and their capacity assessed during project inception):

- NGO'SHAWO: Mouvement de la jeunesse consciente des Comores
- Action Comores Aide (Association for Intervention for Development and the Environment),
- Action for Sustainable Development and Environment (ADDE)
- Association Comoflora
- University of the Comoros
- INRAPE
- CNDRS

Private Sector - The private sector will play a significant role in this project, particularly as Component 3 seeks to encourage alternative livelihoods. Options for artisanal and pharma-cosmetic products will be explored with key private sector partners, as will avenues for marketing and supply to ensure the sustainability and commercial viability of alternate, new or niche products identified by the project. Key stakeholders here include:
Chamber of Commerce (Union des Chambres de Commerce, d'Industrie et d'Agriculture, UCCIA)
Industry associations (forestry, agriculture, fisheries, artisanal groups)

International Partners - International partners have been working in various capacities in Comoros. Their experience, successes, lessons learned and logistical arrangements will all be drawn upon to ensure the success of this project. Coordination will be sought with some activities to ensure complementarity and harmonisation of development interventions, as outlined in Section 2.7. Key partners include: FAO, UNDP, WB, AfDB, and IFAD.

A.4. Gender Equality and Women's Empowerment

Comoros has ratified the Convention on the Elimination of All Forms of Discrimination against Women and has made notable progress on gender equality and equity. The adoption of the National Gender Equity and Equality Policy (PNEEG, 2007) as well as the establishment of Gender Focal Points within each sectoral ministry have allowed the integration of gender in policies and programmes, and improved gender equality in the Comoros. Although women only hold 3% of the seats in parliament, efforts have been made to promote education for girls, and between 2000 and 2014, the ratio of girls to boys reached 0.90, 0.99, and 0.84 enrolled in primary, secondary and graduate schools, respectively[37]. The agricultural sector employs 66.9% of women (2010), involved in poultry farming, food and market garden production, as well as cash cropping and selling fish in markets. While access to land is traditionally inherited and privileged to girls according to matrilineal rule, inheritance is in reality usually shared between boys and girls, with boys sometimes obtaining two-thirds of the family inheritance according to Islamic law.[38] In terms of access to water resources, women and girls traditionally fetch water for their family and devote two hours and half each day to the detriment of education and other productive activities, such as food production.[39] Climate change will likely further impact women's and girls' livelihoods, making resources more scarce and agricultural work more difficult, leading to more food insecurity and to girls dropping out of school.[40]

In the proposed project, gender equity will be promoted in each activity. Gender equity is defined here as the equal participation of men and women in project activities. During the focus groups of the second consultation mission, vulnerable groups such as women, youth and the elderly were particularly active in expressing their concerns on their vulnerability. In order to ensure gender equity, women's voices will be included from the design of the project to its completion. The proportion of women involved in the project activities will be monitored during project implementation.

On Component 2, the perspectives of women and men on the use of their watershed and their priorities given expected climate change will be ascertained in a safe environment in separate meetings as well through equal representation in joint planning meetings. On Component 3, women and men will be helped to engage in climate-resilience and ecosystem-based activities designed around their specific needs, capacities, knowledge and social roles. For women, these include for example the cultivation, preparation and commercialization of natural medicinal and cosmetic products, and the raising of poultry and small stock. Particular attention will also be given to the establishment and strengthening of women's producer groups.

The project has established gender-related targets, and the proportion of women involved in the project activities will be monitored during project implementation. Stakeholder decisions relating to project activities will only be made with a sufficient representation of women in attendance. Finally, indicators and results will also be gender-disaggregated to measure how women are being empowered through the project.

A.5 Risk

The following table describes the risks that might prevent the project objective from being achieved the proposed interventions and measures to mitigate them.

	Description of risk	**Potential consequences**	**Risk rating**	**Mitigation measures/proposed interventions**	**Risk category**	**Probability &**

[37] African Development Bank: African Economic Outlook 2015: Comoros
[38] African Development Bank: 2010 Comoros Country Gender Profile
[39] African Development Bank: 2010 Comoros Country Gender Profile
[40] SCA2D Comores 2015-2019.

						Impact (1–5)
1	Current climate and seasonal variability and/or hazard events prevent implementation of planned activities.	Economic loss or physical damage to infrastructure is a challenge to the timely implementation of project activities.	Medium	• Consider current climatic variability during the restoration process. • Focus on climate-resilient species and techniques to: i) assist plant growth particularly in the seedling/sapling phase; and ii) reduce risk of damage from hazard events. • Take meteorological predictions and seasonal variability into account to reduce the risk of damage to plants.	Economic	P = 3 I = 5
2	Weak institutions and government capacity cause delays and logistical challenges to support project implementation	Given that the institutional capacities are generally low and coordination between different government agencies is not optimal, this could impede the implementation of the project and reduce the number of activities that could be delivered.	High	• Government officials have been engaged since the preparation stage to promote ownership of the project. • Government capacity in terms of climate change adaptation will be assessed at the inception of the project, and measures will be taken to reinforce capacities if needed in order to avoid delays in project implementation. • Government officials will coordinate the activities of all the partners and stakeholders ensuring that the civil service has a central role in the project's success, maintaining their interest and accountability of the project. • The project will promote inter-ministerial collaboration so as to ensure cross-departmental accountability and cooperation. • Training and capacity building will also be provided, which will allow this project to provide learning incentives.	Institutional	P = 4 I = 4
3	The roles, responsibilities and mandates of the Union versus the island governments lack clarity	Given that there is a general lack of institutional capacity and that the coordination between different government agencies is not always well established, this could create an imbalance between	High	• There will be three Island Coordinators who will coordinate activities with the PM. The Island Coordinators will act as a liaison between the PM and the national and international consultants conducting the work in each village. • Workshops and meetings will be held regularly to make sure each	Institutional	P = 4 I = 4

		island governments regarding the implementation of the project and reduce the number of activities that could be delivered.		island government and the Union's government all coordinate efforts to select the right target audiences for each activity. • Government officials have been engaged since the preparation stage to ensure ownership of the project. • Training and capacity building will also be provided, which will allow this project to provide learning incentives.		
4	Poverty and other social factors prevent local communities from adopting resilient ecosystem-based adaptation measures for the long-term, instead opting for maladaptive activities for short-term benefits	If local communities do not engage fully in the project due to social factors, or do not fully see the long-term benefits they can gain from the project, they will perpetuate maladaptive practices that will result in a spiraling of the root causes underlying what the project seeks to address – i.e. unsustainable use of natural resources, which will then lead to further degradation of ecosystems. Consequently, the community will continue to be vulnerable to climate-induced natural hazards.	Low	• The project will carry out information dissemination activities at the local level ensuring that communities are aware of the benefits of ecosystems and adaptation. • The emphasis on livelihoods will also place people's socioeconomic welfare at the heart of the project and offset some of the risks they may incur in choosing adaptive measures. • Inclusive interventions such as building community action plans for water management will ensure that individuals have a role and stake in the project. • During project preparation, stakeholders will be brought on board and local risk-mitigation strategies will be developed for inclusion into the project, so that communities are certain to implement "no-regrets" options.	Social, environmental	P = 2 I = 4
5	Climate change adaptation priorities undermined by national emergencies	Project activities are interrupted. Natural and financial capital is lost.	Low	• The project manager and coordination committee will keep abreast of national events and politics to plan contingency activities when/if necessary.	Social, environmental	P = 3 I = 5

A.6. Institutional Arrangement and Coordination

Institutional arrangement

The proposed project will be implemented by UNEP, and executed by the General Directorate of Environment and Forests (DGEF) of the MAPEEIA. As the Implementing Agency (IA) for the proposed project, UNEP will oversee the project, and provide the technical support required to meet the project goal. As such, UNEP will be responsible for project supervision to ensure consistency with GEF and UNEP policies and procedures. This supervision will be the responsibility of the Task Manager (TM) which will be appointed by UNEP. The TM will formally participate in the following: i) Project Steering Committee (PSC) meetings (at least once a year); ii) the mid-term and final evaluations; iii) the clearance of half-yearly and annual progress and financial reports; and iv) the technical review of project outputs.

The Executing Agency for the project will be the General Directorate of Environment and Forests (DGEF) of the MAPEEIA. DGEF will work in close collaboration with the National Strategic Directorate of Agriculture and Livestock (DNSAE – Direction Nationale des Stratégies Agricoles et de l'Elevage) and the General Directorate of Energy, Mines and Water Resources (DGEME – Direction Général de l'Energie, des Mines et de l'Eau), and island-level institutions responsible for the local level interventions of the project. The Executing Agency will be accountable to UNEP, who will oversee and monitor the implementation of the project.

A **Project Steering Committee (PSC)** will be established at the outset of the project. The PSC will be composed of MAPEEIA, DGEF, DNSAE, DGEME, and UNEP, as well as local authorities. It will be responsible for overseeing project implementation and making management decisions for the project, in particular when guidance is required by the Project Manager (PM). The PSC will be chaired by a representative of DGEF, and the PM will serve as secretary to the PSC. At the discretion of the PSC, members of relevant implementing NGOs or community organizations will be invited to participate in the PSC meetings to ensure local ownership and guidance for the project.

The PSC will play a critical role in project monitoring and evaluation by assuring the quality of these processes and products, and using evaluations for performance improvement, accountability and learning. The PSC will ensure that required resources are committed and will arbitrate on any conflicts within the project or negotiate solutions to any problems encountered with external bodies. The PSC will consider and approve the Annual Work Plans and approve any deviations from the original plans, if deemed necessary. Additionally, the PSC will contribute to reviewing project progress reports and technical reports from consultants. Overall, the PSC will serve as decision-making support, as appropriate throughout project implementation. It will meet at least twice a year.

In order to facilitate UNEP's ultimate accountability for the project results, the PSC's decisions will be made in accordance with standards that ensure management for development results, best value for money, fairness and equity, integrity, and transparency. If consensus cannot be reached within the PSC, the final decision shall rest with the UNEP Task Manager.

The project will be guided in its technical work by a multi-stakeholder **Ad Hoc Technical Committee,** if needed, chaired by DGEF (or a designate). The composition of the Ad Hoc Technical Committee will be inclusive of public and private sector representatives, representatives of research institutions, universities, NGOs, CBOs and civil society, community stakeholders, as well as interested and collaborating donors. As the management of the project is overseen by the PSC, the functions of the Technical Committee will be mainly technical and advisory. However, the Technical Committee may recommend management decisions to the PSC.

A full-time **Project Manager** (PM) will be recruited for the duration of the project by the Executing Agency, DGEF, to execute the management of the project on a day-to-day basis within the parameters laid down by the PSC. The PM's prime responsibility is to ensure that the project produces the results specified in the project document, to the required standard of quality and within the specified constraints of time and cost. The PM will therefore be responsible for the overall planning, implementation, management and reporting for the project. The PM will manage the project budget and resource allocation, and will provide regular updates to the UNEP Task Manager (TM) and the Chief Technical Advisor (CTA) on the progress and challenges encountered during the execution of project activities.

The PM will guide and supervise the work to be conducted by the three Island Coordinators, the Financial and Administrative Officer, as well as the national and international consultants, who will be hired in support of project implementation. Stringent communication channels and lines need to be established to guarantee that the decentralized design of this project will be successful. It will be particularly important that the implementation experiences from the regions feed into the national level activities of the project.

The PM will meet the baseline project managers twice a year or more frequently if necessary. These meetings will include the project coordinators of all baseline projects. The focus will be on sharing lessons learned. Such meetings will also help avoid duplication of activities.

A **Chief Technical Advisor** (CTA) will be hired to provide technical guidance on the implementation of the project to the PM. The CTA will also assist the PM in leading the project. The CTA will fulfill the following functions: i) quality assurance and technical review of project outputs (e.g. studies and assessments); ii) assistance in drafting TORs for technical consultancies and supervision of consultants work; iii) assistance in monitoring the technical quality of project M&E systems, including annual work plans, indicators and targets; iv) providing advice on best suitable approaches and methodologies for achieving project targets and objectives; v) providing a technical supervisory function to the work carried out by the other technical assistance consultants hired by the project; and vi) assisting in knowledge management, communications and awareness raising.

Administrative and logistics support personnel will also be appointed for the duration of the project, including one Financial and Administrative Officer and three Island Coordinators. The Financial and Administrative Officer and the Island Coordinators will report to the PM, who will report to the Project Steering Committee Executive and the PSC.

The **Financial and Administrative Officer** (FAO) will work under the direct supervision of the PM and will be based at the national coordination office. She/he will assist the PM in the effective execution of the project and will be required to undertake intensive coordination with the Ad Hoc Technical Committee, the PM, and with other relevant partners.

The three **Island Coordinators** will work under the direct supervision of the PM and will each be based in their island's capital coordination office for the duration of the project. The Island Coordinators will act as a liaison between the PM and the national and international consultants conducting the work in each village.

The project will develop sub-contracting agreements with national institutions whose excellence is recognized in the field of climatology, agriculture, and climate change adaptation policies (such as INRAPE). These agreements will be developed to conduct an in-depth analysis of current watershed practices and the state of forest resources and to support the implementation of demonstration projects, as well as to prepare a strategy to rehabilitate and reforest watersheds within an integrated watershed management approach.

Consultants will be hired for specific tasks that cannot be carried out by government staff. International technical assistance will be sourced for specialized tasks only when national capacity is insufficient. National consultants will benefit from the support of an international expert when deemed necessary. International consultants will be selected with the assistance of UNEP and in conjunction with the PM.

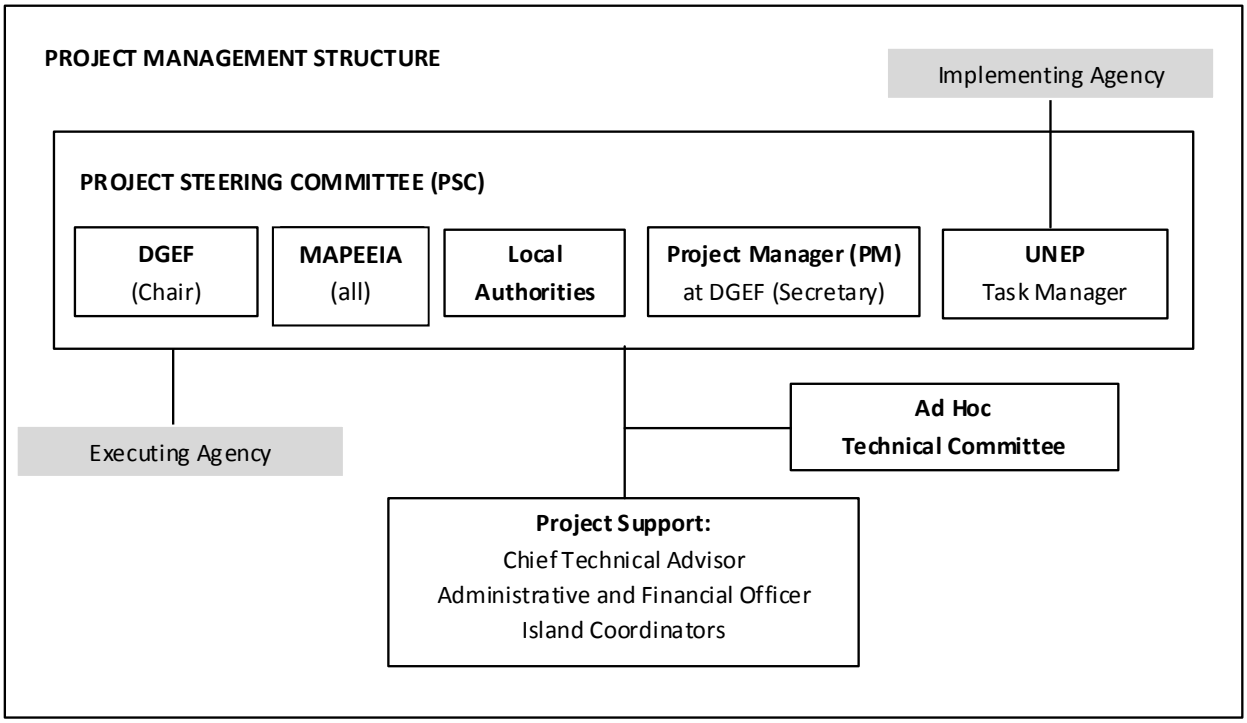


Figure 1: Project management arrangements

Coordination with other GEF and non-GEF initiatives

The proposed project will coordinate with existing projects in order to promote synergies when appropriate, support other interventions, share knowledge, share resources when possible, avoid duplication and ensure value-added to the development sector in Comoros. The key initiatives that the project will coordinate with are listed below:

The second phase of the National Programme for Sustainable Human Development (PNDHD), the **Agricultural Value Chain Development Program (AVCDP)** (US$ 4,300,000, 2017-2021), is scheduled to begin in January 2017. This is an effort to contribute to rural development objectives, to the Poverty Reduction and Growth Strategy (PRGS) and the Accelerated Growth and Sustainable Development Strategy (SCA2D), for which the government (through the MAPEEIA) has received support from the International Fund for Agricultural Development (IFAD). The programme's main objective is to contribute to enhancing food security and create income opportunities for poor rural people through the promotion of cassava, banana and tomato value chains. In each of the three targeted value chain, the AVCDP's specific objectives will include: i) increasing production and productivity; ii) building technical and organizational capacities among producers; and iii) improving conservation, processing and commercialization. The proposed project will complement the AVCDP's objectives thanks to activities aimed at strengthening government and local

communities' capacity to implement resilient integrated watershed management through training, awareness raising and participatory watershed management. Other activities, including the promotion of a diversified array of resilient livelihood strategies conserving natural resources, such as agroforestry practices, zero-grazing small stock production, diversified vegetable production and transformation through a value chain approach, will also complement the AVCDP's own efforts to promote resilient value chains.

Green Climate Fund (GCF) Readiness Programme (US$ 300,000, 2016-2018), funded by the GCF and implemented in partnership with UNEP, will contribute to strengthening the country's technical and coordination capacity, with a view to enhancing its access to adequate climate financing to address climate threats and implement identified priorities for action. The initial phase of the Readiness and Preparatory Support Programme will focus on (i) the strengthening of the National Designated Authority (NDA) / Focal Point and (ii) the development of strategic frameworks for engagement with the GCF, including the preparation of a country programme. As a result of the readiness programme activities, it is expected that an appropriate NDA is identified, and its institutional capacities are built to effectively fulfill its roles and responsibilities in relation to the Fund. This project will engage in the Readiness Programme activities to share information, experiences and lessons learnt, and contribute in particular to the development, through a stakeholder engagement process, of a Comoros GCF country programme, which will include programming priorities and programme/project concepts.

The **National Adaptation Plan (NAP)** process started in 2014, however, it is still to be launched in practice due to delays in accessing funds. The NAP process is set to identify institutional mechanisms and existing coordination in order to include climate change related risks and opportunities within national, insular and sectoral policies and strengthen institutional and technical capacity, which will help crystallize long-term objectives as regards climate change. Close coordination between this project and the NAP process will be ensured, and facilitated by the fact that both processes are housed in MAPEEIA. In particular, the analytical products and improved evidence base, the strengthening of technical and institutional capacity for addressing climate change impacts, and the intersectoral platform undertaken under Component 1 of the proposed project will advance the problem definition, solution identification and institutional coordination needed for the NAP process in the Comoros.

Coordination with other GEF-funded initiatives will also be pursued, as follows:

Implementing Integrated Water Resources and Wastewater Management in Atlantic and Indian Ocean SIDS (US$ 9,700,000, 2011-2017) is a joint UNDP-UNEP project implemented in Cape Verde, Comoros, Maldives, Mauritius, Sao Tome and Principe, and Seychelles. The project objective is to accelerate progress on the World Summit on Sustainable Development targets, Integrated Water Resources Management and Water Use Efficiency plans, as well as water supply and sanitation MDGs for the protection and utilization of groundwater and surface water in the participating countries. The selected sites in the Comoros are located in north Anjouan island, in Mutsamudu. Although the proposed LDCF project interventions on Anjouan will be located in the south of the island, it will seek to build on existing structures and teams, and to learn from lessons from the SIDS project in improving water resource protection through IWRM, including the reforestation and anti-erosion work done at Mutsamudu. The proposed project will also in its awareness raising and training activities build on the communication work done by the SIDS project.

The project **Enhancing adaptive capacity for increased resilience to climate change in the agriculture sector in the Union of the Comoros** (*"Renforcement des capacités d'adaptation et de résilience du secteur agricole aux changements climatiques aux Comores"* – CRCCA, 2014-2018), which was recently CEO endorsed by the GEFSec, funded through the LDCF (US$ 8,990,909 from GEF and US$ 38,309,621 in co-

financing) and implemented by UNDP, has been designed to support the Union of Comoros (Moheli, Grande Comore and Anjouan) to build capacity in order to reduce the vulnerability of agricultural systems to climate change and climate vulnerability. The project includes support to agricultural extension and planning, the development of agro-climate services, including through building climate data collection infrastructure, and demonstrations of resilient agricultural practices in 6 pilot sites. Cooperation with this project will occur through the development of coordination mechanisms such as a joint Steering Committee and Project Management Unit coordination meetings. Linkages between the two national directorates involved (Agriculture and Environment and Forests) will be developed to ensure synergy and cooperation, sharing of methods and lessons learned. These synergies will enable the proposed LDCF project to build on this project's outcomes, mainly the development of agro-climate services and the strengthening of extension services, in order to deliver appropriate watershed management practices.

Strengthening of the Comoros' resilience to disaster risk linked to climate change and variability ("Renforcement de la résilience des Comores aux risques de catastrophes liées au changement et à la variabilité climatiques") is a new LDCF-funded project (currently at PPG stage) to be executed by the Direction Générale de Sécurité Civile, of a total value of US$ 9,000,000 through UNDP and UN-ISDR. This project has three objectives: i) strengthen the systemic and institutional capacities at the local, regional and national levels for a coordinated management of disaster risk caused by climate change; ii) strengthen the national capacities for identification and monitoring of disaster risks linked to climate change, and for production and spreading of early warnings; and iii) strengthen the resilience of means of livelihood and of assets of vulnerable communities against disaster risks brought by climate change. The main point of coordination between this project and the LDCF/UNEP project will be the NAP process, which is starting up. The evidence developed by both projects will be useful to the NAP process. For example, the proposed LDCF/UNEP project will generate evidence on climate change risks on the functioning of watersheds given also baseline vulnerabilities and will develop experience on developing management strategies and adaptation solutions, which is also the aim of the LDCF/UNDP and UN-ISDR project. Furthermore, some of the resilience-building activities of the LDCF/UNDP/UN-ISDR project are planned to take place in the watersheds this LDCF/UNEP project will work in. Coordination of reforestation activities, in particular, in these watersheds will therefore be ensured. Formal coordination processes between the two projects will be initiated at project inception, so that complementarity between their activities is ensured and that information, experiences and lessons learnt are shared between the two project teams.

A.7 *Benefits*

The restoration and improved management of watersheds as a climate change adaptation strategy will provide low-cost and effective means for securing and enhancing multiple socio-economic benefits for vulnerable communities in all three islands of the Comoros. Such benefits will most likely include:

- increased knowledge and institutional capacity for land use planning and management;
- increased water availability and supply, and reduced effects of floods and landslides, as a result of improved watershed management and agricultural practices, as well as water harvesting and conservation efforts;
- improved agricultural productivity from improved means of production, reduced land and soil degradation, improved soil fertility, and better quality seed supply;
- reduced losses of infrastructure and livelihoods, with associated economic impacts;
- sustainable livelihood diversification (at least 1,000 people will adopt new livelihood strategies, of which 500 will be women);
- increased incomes (at least a 20% increase in average annual income in each project community); and
- improved health and well-being, as well as poverty reduction in the longer-term, as a result of the above-

mentioned benefits.

Key socio-economic indicators for monitoring the achievement of these and other socio-economic benefits will be identified at the project inception stage. These indicators will be incorporated in the geo-referenced watershed information system to be developed under project Component 1, alongside with environmental indicators. Possible approaches and institutional set-up for socio-economic data collection and analysis will be explored with the relevant project partners. These indicators will be tracked to build an evidence base for both the socio-economic benefits and their contribution to adaptation benefits.

A.8 Knowledge Management

The project adopts a knowledge management approach that includes the creation of a geo-referenced information system on watersheds and climate change impacts, including socio-economic and environmental data (Component 1). This information system will considerably assist in the management of the ecosystems and increasing the communities' resilience to climate change impacts. This information system will be supplemented by the creation of additional knowledge products, such as assessments and technical briefs, as well as information designed to support policy making. The island-based intersectoral platform that will support the establishment and upscaling of integrated watershed management will also be instrumental in the knowledge management strategy, as it will gather lessons from the demonstration aspects of the project and disseminate them nationally and internationally. Knowledge products will include training materials, as well as pamphlets and brochures, and contributions to social networks and media interventions in local languages. The project has a strong participatory approach that will help disseminate knowledge and information at the local level.

B. CONSISTENCY OF THE PROJECT WITH NATIONAL PRIORITIES

B.1 Consistency with National Priorities

The proposed project will be consistent and aligned with many of the Comoros' national priorities and plans, such as:

The **Poverty Reduction and Growth Strategy (PRGS, 2010-2015)**, aims to increase economic growth to at least 5% annually and to decrease income poverty by 50% by 2015. Sustainable development, including protection of the environment, is a central aim of the strategy, "improving soil productivity", "integrated coastal management", and "increasing water supply" being three of the seven priority programmes. Specifically, the proposed project is consistent with and supports two of the core strategy objectives: (2) "strengthening key sectors of the economy with the highest growth and poverty reduction potential" and (6) "promoting environmental sustainability and civilian security". As the project will look into ecosystem-based alternative livelihoods for local communities on all three islands, as well as restoring important forests and watersheds, it will contribute to reduce poverty and promote sustainable growth, which is consistent with the PRGS.

Taking over the PRGS, the **Accelerated Growth and Sustainable Development Strategy (Stratégie de Croissance Accélérée et de Développement Durable - SCA2D, 2015-2019)** started its five-year implementation period in 2015 with the aim of making the Comoros an emerging country by 2040.[41] The

[41] Stratégie de croissance accélérée et de développement durable 2015-2019 (SCA2D) (Mai 2014)

SCA2D has four objectives: i) strengthen the foundations of a strong, viable, fair and inclusive economic growth; ii) improve the population's living conditions and ensure equity in the access to basic social services; iii) promote the Comorian natural and cultural heritage and the optimal use of natural resources; and iv) promote good governance. Each sector has relevant strategies and policies, and these are adopted and operationalized by each island along the relevant sections of the SCA2D. For instance, the agricultural policy was developed in 1994 and updated in 2011 and 2014 and is implemented alongside the relevant sections of the SCA2D as the strategic reference document for the agriculture sector. Agricultural development targets and climate change adaptation targets are included within the framework of SCA2D. The project is well aligned with the SCA2D as it will promote livelihood diversification strategies as well as collaborative watershed rehabilitation through an integrated watershed management approach involving all key stakeholders and community members, thus fostering good governance, improving population's living conditions through an optimal and sustainable use of natural resources.

The **United Nations Development Assistance Framework 2015-2019 (UNDAF)** was formulated at the same time as the SCA2D, and therefore reflects lessons learned from the PRGS and from the previous UNDAF. It is aligned with three of the four pillars of the SCA2D, namely the strengthening of the foundations of strong, viable, fair and inclusive economic growth; the improvement of the population's living conditions and equity in the access to basic social services; and the promotion of good governance. Since the aim of UNDAF 2015-2019 is to contribute directly to the SCA2D, the proposed project is also well aligned with the framework's expected outcomes, particularly regarding UNDAF Outcome 4 on vulnerable population reaching climate change and crisis resilience by 2019. The proposed project will be mainstreamed in the UNDAF, not only because it will support community-based negotiations towards the development of collaborative watershed rehabilitation and management plans, but because it will also provide a diversified array of resilient livelihood strategies that will allow vulnerable populations to be more resilient to climate shocks.

The **Forest Policy**'s (2010) overall goal is the conservation and sustainable development of the forest cover in order to guarantee the sustainable production of goods and services for the population by contributing to the fight against poverty, environmental protection, and by respecting the Union's commitments to international conventions. Its main objectives are to: i) improve knowledge on forest cover; ii) foster sustainable and participative management and conservation of forestry resources; iii) strengthen institutional framework through the implementation of a forestry administration to develop a national programme of forestry development; and iv) raise awareness through training on participative management of forests to maintain forest cover and develop sustainable practices for revenue-generating activities to fight against poverty (non-timber forest products (NTFPs) such as honey, medicinal plants, mushrooms…).[42, 43] The proposed project is well aligned with the Forest Policy, and will contribute to the achievement of most of its objectives.

From the National Forest policy objectives, the general framework and the implementation strategy of the policy were then set out as part of **the Priority Action Plan for Forestry Development (PAPDF, 2011-2015)** to facilitate its implementation. The PAPDF is aimed at developing a reference framework in order to guide the funding and the work programme around the four following fields of action[44]:

d. Strengthening of forestry institutions and mechanisms
e. Enhancing natural forest participatory development and management
f. Promoting plantations for production of timber (energy needs and other services), and
g. Supporting local initiatives of forest resources management.

[42] Enoncé de la politique forestière de l'Union des Comores (MAPEEIA, Mai 2010, Moroni)
[43] Rapport sur l'Inventaire Forestier National (IFN) de l'Union des Comores (2010) (version préliminaire)
[44] Plan d'Action Prioritaire de Développement Forestier (PAPDP), mai 2012

All of those objectives will be addressed through the proposed project.

The **National Adaptation Programme of Action (NAPA)** (2006) identifies loss of water bodies, drought and low river flows, and climate-related storms as major threats and hazards to Comoros. It also identifies water/groundwater availability, food security and income generation as the main issues vulnerable to climate change. The NAPA priorities were aimed at adaptation in agriculture, fisheries, water, housing, health, and, indirectly, tourism, through the replenishment of watersheds and the fight against soil erosion. Some of the priority adaptation projects identified in the NAPA are (1) promote drought resistant crop varieties (2) fight against soil erosion and promote restoration and reconstitution of basin slopes; and (4) increase water supply and increase its quality. These are among the priorities that will be addressed through this LDCF project.

The **Agricultural Policy,** developed in 1994 and updated in 2011 and 2014, seeks to achieve food security for all, create employment, and promote sustainable use of natural resources, through four main axes: i) guaranteeing the sustainability of production conditions; ii) strengthening value chains; iii) enhancing institutional development; and iv) mobilizing non-governmental actors.[45] The proposed project is well aligned with the Agricultural Policy, as it includes activities to develop diversified, innovative and sustainable livelihoods in order to increase food security and reduce poverty of Comorian rural populations.

The **National Environment Policy (NEP)** and the **Environmental Action Plan (EAP)**, which supports it, were adopted by the Comorian government in 1993 and 1994, respectively, to enable the country to integrate environmental concerns for sustainability into development plans, programs and projects.[46] The NEP also defines national standards for biodiversity conservation, protected areas management, environmental impact assessment and pollution control. The project is well aligned with the NEP, which seeks to add an environmental perspective to national public discourse and to socioeconomic development activities.

The fifth national report on biodiversity (2014) shows how a number of objectives outlined in the **National Strategy and Action Plan for the Conservation of Biodiversity 2011-2020** are currently being achieved, contributing to the Aichi objectives aiming, directly or indirectly, at ensuring the sustainable management of forest resources. Progress in reaching the Aichi objectives includes introducing participative and community management of currently 10,000 ha of forests, to be increased to 12,500 ha by 2018, hence improving the protection of forests in order to stabilize the population of *Pteroptus livingstonii*.[47] This project is well aligned with this strategy because, as part of integrated watershed management, the development of watershed management plans and watershed rehabilitation will contribute to the biodiversity strategy. The establishment of temporary and permanent community conservation zones will also contribute to the protection of biodiversity.

The proposed project is well aligned with the **National Action Plan to Combat Desertification (NAP).** As part of its integrated watershed management approach, the project's interventions focused on reforestation and watershed rehabilitation will contribute to combatting desertification. The following ongoing or completed activities (among others) identified in the NAP are indeed directly related to this proposed project:

- Implement national programme on sustainable land management between 2008 and 2012.
- Clarify the tenure regime status of agricultural land in order to encourage investments in anti-erosive measures on agricultural land.

[45] Actualisation de la politique agricole et formulation d'une stratégie sur le court à long terme pour le secteur comme vecteur pour lutter durablement contre l'insécurité alimentaire aux Comores /Landell Mills/Rapport Final Provisoire/Avril 2014.
[46] Appui au Programme forestier national (FAO, 2008-2009)
[47] 5ème Rapport National sur la Diversité Biologique (Juin 2014)

- Ongoing analysis to establish three protected zones (Karthala forest, N'tringui Mount, and M'lédjéle forest).[48]

The **Water Act** (Code de l'eau) from 1994 (94-037) indicates that water resources management is lead by MamWe (Autonomous Agency for Water and Energy Distribution) in urban areas and by the Ministry of Production in peri-urban and rural areas. The 2011 decree on the decentralization process (11-005) stipulated that water and sanitation management is attributed to the 54 towns on the three islands (20 in Anjouan; 28 in Grande Comore and 6 in Moheli). In addition, in 2010, the Comoros received funds from the African Bank for Development to develop the **National Programme for Drinking Water Supply and Sanitation** and be implemented through the PRGS until 2014, with the specific objectives of i) improving access to drinking water and sanitation and ii) contributing to reducing the prevalence of water-borne diseases while preserving the environment in the three islands.[49] Within the proposed project, an ecosystem-based approach will promote integrated watershed management, through which access to water resources will be enhanced thanks to better conservation, the development of small rural hydraulics for water harvesting and conservation as well as the overall rehabilitation of the ecosystems.

C. BUDGETED M &E PLAN

COSTED M&E PLAN			
M&E activity	**Responsibility**	**Budget (US$),** **Excluding project team staff time**	**Time frame**
Inception Workshop	▪ Project Manager ▪ DGEF ▪ UNEP TM	None*	Two months after project approval
Inception Report	▪ Project Manager	None	One month after Inception Workshop
Baseline Assessment	▪ Project Manager	$45,000	Two months after Inception Workshop
Monitoring of project indicators	▪ Project Manager ▪ Island Coordinators	$40,000	In Year 2 and Year 4 of the project implementation
Measurement of Means of Verification for Project Progress on output and implementation	▪ Oversight by Steering Committee (DGEF, MAPEEIA, UNEP TM) ▪ Project Manager	To be determined as part of the annual work plan preparation	Annually prior to PIR and to the definition of annual work plans
Periodic monitoring of implementation progress	▪ Project Manager ▪ DGEF ▪ UNEP TM	None	Quarterly
Periodic Progress reports	▪ Island Coordinators ▪ M&E Clerk	None	Quarterly

[48] Plan d'Action National pour la luttre contre la desertification aux Comores (PAN/LCD – 2013)
[49] http://www.afdb.org/fileadmin/uploads/afdb/Documents/Procurement/Project-related-Procurement/GPNComoresAEPA%20%204-10.pdf

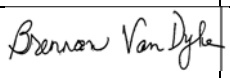
COSTED M&E PLAN			
M&E activity	**Responsibility**	**Budget (US$),** **Excluding project team staff time**	**Time frame**
Project Implementation Review (PIR)	▪ Project Manager ▪ CTA ▪ UNEP TM	None	Annually
Audit	▪ Private firm	$25,000	Annually
Midterm Evaluation	▪ UNEP Evaluation Office	$45,000	Mid-point
Final Evaluation	▪ UNEP Evaluation Office	$45,000	Close to the end of project implementation
Project Final Report	▪ Project Manager ▪ UNEP TM	None	Maximum of three months after the end of the project
Visits to the project sites	▪ UNEP TM ▪ Project Manager ▪ DGEF ▪ PSC	Paid out of operational costs	Yearly
Total Indicative Cost		**$200,000**	

* The Inception workshop is part of the project team and staff time, it is therefore budgeted under 'PMC: Inception meetings and PSC meetings' and that is why it does not appear in the M&E budgeted plan.

PART III: CERTIFICATION BY GEF PARTNER AGENCY(IES)

A. GEF Agency(ies) certification

This request has been prepared in accordance with GEF policies[50] and procedures and meets the GEF criteria for CEO endorsement under GEF-6.

Agency Coordinator, Agency Name	Signature	Date (MM/dd/yyyy)	Project Contact Person	Telephone	Email Address
Brennan Van Dyke Chief, Resource Mobilization and Global Funds Coordination		October 18, 2016	Anna Kontorov Task Manager	+1-202-621-5039	anna.kontorov@unep.org

[50] GEF policies encompass all managed trust funds, namely: GEFTF, LDCF, and SCCF

ANNEX A: PROJECT RESULTS FRAMEWORK

Outcome/Outputs	Indicator	Baseline	Mid-term Target	End of term Target	Means of Verification
COMPONENT 1: Enhanced capacity to address climate risks through watershed management					
Outcome 1. Strengthened technical and institutional capacity for resilient integrated watershed management at the national and local levels	Number of national and local government officials and local community members with capacity to plan and implement integrated watershed management interventions as an adaptive strategy	0	75 people in total have the capacity to plan and implement integrated watershed management interventions on the three islands, of which 50% are women	150 people in total have the capacity to plan and implement integrated watershed management interventions on the three islands, of which 50% are women	capacity score card; survey; project reports
Output 1.1 Assessments of climate change risks and impacts on Comorian forests and watersheds, contributing to a geo-referenced information system	*Availability of an operational geo-referenced information system on climate change impacts for major watersheds, using climate data*	*There is a draft National Forest Inventory, but no geo-referenced information system on watersheds*	*The structure of the geo-referenced information system is under construction by mid-term*	*1 geo-referenced information system is operational at national level by end of project*	*project reports*
Activity 1.1.1 Develop a map of watersheds based on the National Forest Inventory (NFI) as well as climate-based forest maps for each of the islands (the state of forests with or without intervention, under a climate change scenario)					
Activity 1.1.2 Undertake climate change Vulnerability and Impact Assessments (VIAs) in the selected communities, integrating ecosystem considerations, to inform the selection and implementation of ecosystem-based adaptation measures					
Activity 1.1.3 Develop a geo-referenced information system on climate change impacts for major watersheds or sub-catchments, including socio-economic and environmental data, based on NFI and downscaled climate data available					

Outcome/Outputs	Indicator	Baseline	Mid-term Target	End of term Target	Means of Verification
Output 1.2 Training and information is provided to introduce integrated watershed management into public policy and practice as an adaptation strategy	*Number of people trained in IWM*	*0*	*75 people in total trained in IWM on the three islands by end of project, of which 50% are women, by mid-project*	*150 people in total trained in IWM on the three islands by end of project, of which 50% are women, by end of project*	*Training reports and attendance lists*
Activity 1.2.1 Analysis of current (explicit and implicit) watershed management practices, including of their potential for adaptation, and analysis of IWM factors of success (including local community mobilization, land tenure and property rights, traditional environmental knowledge, institutional and policy issues)					
Activity 1.2.2 Introduction to participatory watershed management as a climate-resilient strategy through training and awareness raising among MAPEEIA staff and decentralized stakeholders in the environment, forest, water and agriculture sector					
Activity 1.2.3 Develop policy briefs and technical guidelines for MAPEEIA and communities on the contribution of healthy ecosystems for livelihoods and adaptation, and the integration of ecosystem-based adaptation into watershed and forest rehabilitation and management (based, inter alia, on lessons learned from Component 2)					
Activity 1.2.4 Work with INRAPE, the University of Comoros, and other technical and vocational training institutes in Comoros to develop and deliver courses on climate change, climate risk management and watershed management					
Activity 1.2.5 Develop mechanisms for securing access to land, including through the application of the FAO's voluntary guidelines on the governance of land tenure systems					
Output 1.3 A strategy and an intersectoral platform to sustain and replicate integrated watershed management are developed and institutionalized	*Availability of island-based intersectoral platform and of a state of the art report on the strategy and lessons learned to sustain Integrated Watershed Management*	*No island-based intersectoral platform or state of the art report are in place or available*	*Island-based intersectoral platforms are in place by mid-term and the state of the art report on the strategy and lessons learned to sustain IWM is underway by mid-term*	*Island-based intersectoral platforms are functioning and develop an upscaling strategy by end of project, and the state of the art report on IWM is published by the end of the project*	*Project report, state of the art report, list of stakeholders taking part in platforms and meetings conducted within*

Outcome/Outputs	Indicator	Baseline	Mid-term Target	End of term Target	Means of Verification
					intersectoral platforms
Activity 1.3.1 Collect lessons from demonstration activities (Component 2) and disseminate them nationally and internationally					
Activity 1.3.2 Establish an island-based intersectoral platform to develop an upscaling strategy, including: financing options, opportunities and barriers and review of relevant policies and strategies to identify entry points for upscaling the integrated watershed management practices introduced by the project.					
COMPONENT 2: Resilient watersheds and ecosystem-based adaptation demonstrations					
Outcome 2. Rehabilitated and sustainably managed watersheds and sub-catchments in project areas	# of ha of sustainably managed watersheds under sustainable collaborative management	*0*	1,750 ha of watersheds are sustainably managed by mid-project, of which 200 ha/yr on Ngazidja, 125 ha/yr year on Anjouan, and 112.5 ha/yr on Moheli	3,500 ha of watersheds are sustainably managed by the end of the project, of which 400 ha/yr on Ngazidja, 250 ha/yr on Anjouan, and 225 ha/yr on Moheli (per year during 4 years)	visual observation, bio-physical surveys of project sites, project reports
Output 2.1 Watershed rehabilitation and management plans and implementation mechanisms adopted by communities	*Number of villages that adopt a collaborative watershed rehabilitation and management plan and implementation mechanism*	*0*	*At least 2 villages in each island adopt a collaborative watershed rehabilitation and management plan and implementation mechanism by project mid-term*	*5 villages in each island adopt a collaborative watershed rehabilitation and management plan and implementation mechanism by end of project*	*visual observation and door-to-door surveys, project monitoring and coordination reports*
Activity 2.1.1 Support community-based negotiations towards the development of collaborative sub-catchment and/or watershed rehabilitation and management plans and implementation mechanisms, that aim at reversing human-induced watershed degradation and integrate climate risks and impacts, using the models and information produced in Component 1					

Outcome/Outputs	Indicator	Baseline	Mid-term Target	End of term Target	Means of Verification
Output 2.2 3,500 ha of the targeted watersheds are rehabilitated through reforestation, conservation and anti-erosive measures	*# of ha of rehabilitated watersheds*	*0*	*1,750 ha of watersheds are rehabilitated by mid-term, of which 200 ha/yr on Ngazidja, 125 ha/yr year on Anjouan, and 112.5 ha/yr on Moheli*	*3,500 ha of watersheds are rehabilitated by the end of the project, of which 400 ha/yr on Ngazidja, 250 ha/yr year on Anjouan, and 225 ha/yr on Moheli*	*visual observation, bio-physical surveys of project sites, project reports*
Activity 2.2.1 Conduct local training on climate risk management, watershed management and ecosystem-based adaptation in project sites.					
Activity 2.2.2 Implement watershed rehabilitation and management plans, developed under output 2.1, through an integrated approach, including: reforestation using resilient species; anti-erosive and anti-flooding measures; establishment of temporary and/or permanent community conservation zones.					
Component 3: Resilient and diversified ecosystem-based livelihoods for local communities					
Outcome 3. Increased and sustained income from alternative livelihood strategies among project communities	Number of people reporting a sustained and increased income from alternative livelihoods introduced by the project, among which half are female-headed households	Average annual income in the project communities is 62,000 KMF (137 US$), not including foreign funds transfers	Targeted households in project sites report a 10% increase in average annual income, among which half are female-headed households, by mid-project	Targeted households in project sites report a 20% increase in average annual income spread and sustained on the 4 following years, among which half are female-headed households	household surveys; project reports
Output 3.1 Ecosystem-based livelihoods, such as agroforestry practices are	*# of men and women who adopt ecosystem-based livelihoods, such as agroforestry practices in the project areas*	*0*	*500 people, of which 250 are women, adopt ecosystem-based livelihoods, such as agroforestry practices,*	*1000 people, of which 500 are women, adopt ecosystem-based livelihoods, such as agroforestry practices,*	*household surveys; visual observations; project*

Outcome/Outputs	Indicator	Baseline	Mid-term Target	End of term Target	Means of Verification
adopted among project communities			*by mid-term*	*by end of project*	*reports*
Activity 3.1.1 Based on integrated watershed rehabilitation and management plans (Component 2), establish community-agreed climate-resilient agroforestry land use plans					
Activity 3.1.2 Implement ecosystem-based livelihoods production strategies, focusing on climate-resilient production activities and using a value-chain approach					
Activity 3.1.3 Analyze and address phytosanitary constraints to production, including pests and parasites affecting crops and livestock					
Activity 3.1.4 Develop small rural hydraulics for water harvesting and conservation (cisterns)					
Output 3.2 Climate-proof innovative sources of livelihoods adopted in project communities	*# of people adopting climate-proof and innovative livelihoods strategies*	*0*	*500 people, of which 250 are women, are adopting climate-proof and innovative livelihoods strategies by mid-term*	*1000 people, of which 500 are women, are adopting climate-proof and innovative livelihoods strategies by the end of the project*	*household surveys; visual observations; project reports*
Activity 3.2.1 Collect and review traditional knowledge on pharmaco-cosmetic plant-based products and niche food crops with a view of identifying potential cash crops for diversification (including environmental impact, socio-economic potential and policy barriers)					
Activity 3.2.2 Organize producer groups, particularly women's groups, towards the production and marketing of niche pharmaco-cosmetic plants					

ANNEX B: RESPONSES TO PROJECT REVIEWS (from GEF Secretariat and GEF Agencies, a Responses to Comments from Council at work program inclusion and the Convention Secretariat and PIF).

Comments from Germany	Response to comments
Germany appreciates that the PIF addresses the rehabilitation of watersheds and aims to foster ecosystem-based livelihoods of rural communities as this approach is in line with the adaptation needs identified in Comoros' NAPA and National Communications. However, the three components of the proposed project do not seem to form a well-structured and coherent approach. In particular, due to a wide array of different indicative activities (e.g. climate risk assessment of watersheds, mainstreaming ecosystem-based adaptation into watershed management, dissemination of learnings from demonstration projects) the focus of component 1 remains somewhat unclear. Moreover, the PIF does not clearly mention how component 2 (resilient watersheds and ecosystem-based adaptation demonstrations) and component 3 (resilient and diversified ecosystem-based livelihoods) will build on each other. Germany therefore recommends to clarify the focus of each of the components and to highlight the interconnections and synergies between them.	The three components of the projects have been revised the design stage to increase synergies and ensure interconnectedness among activities. The focus of Comp was strengthened to include training and awareness raisi among MAPEEIA staff and decentralized stakeholders i environment, forest, water and agriculture sector on part watershed management as a climate resilience strategy, to facilitate the introduction of integrated watershed management as an adaptation strategy, which will then b sustained and replicated at the island level thanks to inte platforms. Furthermore, watershed maps and the geo-ref information system developed in Component 1 will be u local government officials to raise awareness in each co about integrated watershed management and transfer kn about forest conservation. They will also serve as a basi participatory land use planning, and ongoing watershed and territorial development at the municipal level, inclu under Components 2 and 3 of the project. Conversely, w under Component 2 will help gather information to mai geo-referenced information system. Watershed management plans and agro-forestry land us developed by communities under Component 2, will hel communities in their decisions on livelihood diversifica within Component 3 in determining the areas dedicated cropping, agro-forestry, as well as the type of crops and exploitations to be promoted in each village.
The concept presented in the PIF remains in parts vague, in particular related to the term "resilience", which is used in many different contexts (e.g. resilient watershed management, resilient production techniques, resilient forest and watershed rehabilitation technologies). For this reason, the adaptation benefits of the proposed "resilient" practices are not always evident. Thus, Germany suggests that the PIF should be more precise when referring to the term "resilience" and explain the differences between "resilient" and "regular" practices in greater detail to demonstrate how exactly these practices	In the case of this project, watershed management, fores rehabilitation and climate-smart agriculture have been ta as strategies to adapt to existing climate changes while promoting long-term resilience. In all three strategies, e will be made to use climate-resistant (resilient) varieties species of agricultural and tree crops, as well as practice minimize the impact of climate risks (for example water conservation, etc). The adaptation benefits of the propo interventions have also been clarified in the project docu

contribute to climate change adaptation.	
Germany welcomes that the PIF foresees participation of a diverse range of stakeholders and nomination of "dedicated coordination staff" from the group of government stakeholders on each island. Yet, as the PIF identifies "weak institutions and government capacities" as a high risk to successful implementation of the project, this may also affect the coordination activities led by government staff. Against this backdrop and taking into account the diverse range of activities planned, Germany recommends providing additional information on the coordination structure and strengthening it, if needed.	A broad set of activities has been proposed to mitigate this risk. First, the project will provide training and targeted capacity building to government and ministerial staff at the Union and Island level. Second, the project will promote formalized inter-ministerial collaboration so as to ensure cross-departmental accountability and cooperation. Third, the project will recruit three independent (i.e. non-government staff) island coordinators for the duration of the project, who will help lead and monitor activities in each island with the project management unit. As per current practice, the PMU will be housed in the Ministry but will be independent of it. Finally, the project will recruit an experienced international Technical Advisor to strengthen the capacity of the PMU. It should be noted that this approach has been applied successfully in past projects that UNEP has implemented with the Government of Comoros.

ANNEX C: STATUS OF IMPLEMENTATION OF PROJECT PREPARATION ACTIVITIES AND THE USE OF FUNDS[51]

A. Provide detailed funding amount of the PPG activities financing status in the table below:

PPG Grant Approved at PIF:			
Project Preparation Activities Implemented	***GEF/LDCF/SCCF Amount ($)***		
	Budgeted Amount	***Amount Spent Todate***	***Amount Committed***
International Consultant	45,000	45,000	0
Local Consultants	33,000	15,805	17,195
Travel	8,000	8,222	-222
Meetings and Workshops	10,000	12,756	-2,756
Communications	1,000	900	100
Management	3,000	1,888	1,112
Total	100,000	84,571	15,429

[51] If at CEO Endorsement, the PPG activities have not been completed and there is a balance of unspent fund, Agencies can continue to undertake the activities up to one year of project start. No later than one year from start of project implementation, Agencies should report this table to the GEF Secretariat on the completion of PPG activities and the amount spent for the activities. Agencies should also report closing of PPG to Trustee in its Quarterly Report.

ANNEX D: CALENDAR OF EXPECTED REFLOWS (if non-grant instrument is used**)**

N/A

ANNEX E: CONSULTANTS TO BE HIRED (ATTACHED)

ANNEX F1: DETAILED GEF BUDGET (ATTACHED)

ANNEX F2: CO-FINANCING BUDGET (ATTACHED)

ANNEX G: MONITORING AND EVALUATION BUDGET AND WORKPLAN (ATTACHED)

ANNEX H: PROJECT IMPLEMENTATION ARRANGEMENTS (ATTACHED)

ANNEX I: KEY DELIVERABLES AND BENCHMARKS (ATTACHED)

ANNEX J: TRACKING TOOLS (ATTACHED)

ANNEX K: OFP ENDORSEMENT LETTER (ATTACHED)

ANNEX L: CO-FINANCING LETTERS (ATTACHED)

ANNEX M: SOCIAL AND ENVIRONMENTAL SAFEGUARDS (ATTACHED)