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## **Project Document**

### **Government of the Union of Comoros and UNDP**

Implementing Partner: Ministry of Production, Environment, Energy, Industry and Handicraft (MPEEIH)

United Nations Development Programme

UNDP GEF PIMS 4950 / GEF Secretariat Project ID 5062

Atlas Award 00080808 / Atlas Project ID 00090377

### **Development of a national network of terrestrial and marine protected areas representative of the Comoros' unique natural heritage and co-managed with local village communities**

#### **Brief description**

The project will seek to conserve globally significant marine and terrestrial biological diversity in the Union of Comoros by establishing an expanded and functional system of protected areas (PAs) in three of the country's islands: Ngazidja (or Grand Comoro), Mwali (or Moheli) and Ndzواني (or Anjouan) – a system that is both representative of the country's biodiversity endowment and which has good prospects for a sustainable future. The insular nature of Comoros and the fact that it is located in the biodiverse tropical zone of the Southern Indian Ocean should place the country high in the global conservation agenda, even though support for conservation work, including capacity building and finance, is still to receive due international attention. At the same time, Comoros' biodiversity has been – and continues to be – highly impacted by human activity. Presently, the PA estate of Comoros includes only a single gazetted site, the Moheli Marine National Park, which was established in 2001. There are no formal terrestrial PAs, even though terrestrial ecosystems are under a considerable degree of pressure. Since the establishment of Moheli Marine Park, Comoros has had plans to establish at least one terrestrial and one marine protected area on each of the islands. Yet, for various reasons, including incipient PA management capacity, these plans have until now remained unfulfilled. This project will strengthen the PA system through expansion and capacity building, including the development of a legal framework and of an enabling investment environment for PAs. It will also invest resources in PA management at the site level operationalising.

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## Acronyms

AFD	French Development Agency ( <i>Agence Française de Développement</i> )
APG	Association for the Protection of the <i>Gombessa</i>
APR	Annual Progress Report
ASCLME	Agulhas and Somali Current Large Marine Ecosystems GEF-UNDP Project
AWP	Annual Work Plan
AZE	Alliance for Extinction Zero
BIOPAMA	Biodiversity and Protected Area Management (IUCN Initiative)
BOD	Board of Directors
CBD	Convention on Biological Diversity
CCF	Country Cooperation Framework (UNDP)
CHM	Clearing House Mechanism
CITES	Convention on International Trade in Endangered Species of Wild Fauna and Flora
CNDRS	National Centre for Documentation and Scientific Research
CO	(UNDP) Country Office
CODD	Guidance committee on sustainable development ( <i>Comité d’Orientation pour le Développement Durable</i> )
COSEP	Centre for rescue and civil protection ( <i>Centre des Opérations de Secours Et de la Protection civile</i> )
CR	Community Reserve
CSO	Civil Society Organization
CTF	Conservation Trust Fund
DB	Database
DEF	Regional Directorate for Environment and Forests
DGEF	Directorate General for the Environment and Forests
ECDD	Community engagement for sustainable development project ( <i>Engagement Communautaire pour le Développement Durable</i> )
EDA	Electricity of Anjouan
EEZ	Exclusive Economic Zone
EIA	Environmental Impact Assessment
EIF	UNDP Enhanced Integrated Framework
EIS	Environmental Information System
EU	European Union
FAO	Food and Agriculture Organization
FFEM	Fonds Français pour l’Environnement Mondial
FGE	Environmental Management Fund ( <i>Fonds pour la Gestion de l’Environnement</i> )
FLE	Framework Law on the Environment
GBIF	Global system of Biodiversity Information Facility
GEF	Global Environment Facility
GDP	Gross Domestic Product
GIS	Geographic Information System

GPS	Geographical Positioning System
HDI	Human Development Index
IAS	Invasive Alien Species
IBA	Important Bird Area
ICRAN	International Coral Reef Action Network
IDCS	Information and data collection service
IFAD	International Fund for Agricultural Development
IGA	Income Generating Activity
INRAPE	National Research Institute for Agriculture, Fisheries and the Environment
IOC	Indian Ocean Commission
IPCC	Intergovernmental Panel on Climate Change
IRD	French Research Institute for Development ( <i>Institut de Recherche pour le Développement</i> )
IUCN	International Union for the Conservation of Nature
KMF	Comorian Franc
LBO	Local Base Organizations
LME	Large Marine Ecosystem
MAMWE	Comoros water and electricity ( <i>Madji Na Mwedje Ya Comores</i> )
MDG	Millenium Development Goals
M&E	Monitoring and Evaluation
MECK	Savings and Credit Mutuelle of Comoros ( <i>Mutuelle d'Épargne et de Crédit des Comores</i> )
MEM	House of Ecotourism ( <i>Maison de l'Écotourisme de Mwali</i> )
METT	Management Effectiveness Tracking Tool
MOU	Memorandum of Understanding
MPA	Marine Protected Area
MPEEIH	Ministry of Production, Environment, Energy, Industry and Handicrafts
NBSAP	National Biodiversity Strategy and Action Plan
NCSA	National Capacity Self-Assessment
NFP	National Focal Points
NGO	Non-Governmental Organization
NIM	National Implementation Modality
OCB	Project to support base community organizations ( <i>Projet d'appui aux Organisations Communautaires de Base</i> )
PA	Protected Area
PDRM	Mwali Rural Development Project ( <i>Projet de Développement Rural de Mohéli</i> )
PIR	Project Implementation Report
PMM	Moheli Marine Park
PNDHD	GEF-FIDA National Programme for Sustainable Human Development ( <i>Programme National de Développement Humain Durable</i> )
PoWPA	(CBD) Programme of Work on Protected Areas
PSC	Project Steering Committee
RCED	Rural Centres for Economic Development

RCU	(UNDP) Regional Coordinating Unit
RTA	(UNDP) Regional Technical Adviser
SBAA	Standard Basic Assistance Agreement
SCORE	Supporting Cooperation for Research and Education Project (EU)
SGP	Small Grant Programme
SIDS	Small Island Developing States
SLM	Sustainable Land Management
SWIOFP	South West Indian Ocean Fisheries Project (GEF-UNDP)
TBW	Total Budget and Workplan
UC	University of the Comoros
UNDAF	United Nations Development Assistance Framework
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
UNESCO	United Nations Education, Science and Culture Organization
USAID	United States Agency for International Development
WB	World Bank
WCPA	World Commission on Protected Areas
WIOLab	Western Indian Ocean Land based activities (GEF-UNEP Project)
WIOMSA	Western Indian Ocean Marine Science Association

## **SECTION I: Elaboration of the Narrative**

### **INTRODUCTION**

1. The project will seek to conserve globally significant marine and terrestrial biological diversity in the Union of the Comoros by establishing an expanded and functional system of protected areas (PAs) in the country, a system that is both representative of the country's biodiversity endowment and which has good prospects for a sustainable future. The insular nature of Comoros and the fact that it is located in the biodiverse tropical zone of the Southern Indian Ocean place the country high in the global conservation agenda. At the same time, Comoros' biodiversity has been – and continues to be – highly impacted by human activity. Presently, the PA estate of Comoros includes only a single gazetted site, the Moheli Marine National Park, which was established in 2001. There are no formal terrestrial PAs, even though terrestrial ecosystems are under a considerable degree of pressure. Since the establishment of Moheli Marine Park, Comoros has had plans to establish at least one terrestrial and one marine protected area on each of the islands. Yet, for various reasons, including incipient PA management capacity, these plans have until now remained unfulfilled. The project will strengthen the PA system through expansion and capacity building, and by investing resources in PA management at the site level.

2. The project will provide a framework and strengthen efforts to ensure that the establishment and management of protected areas are consistent with national targets and international standards to preserve the natural and cultural heritage of the Comoros while maximizing the benefits to riparian communities. The project will take place both at the national system and site levels.

3. At the system level, the creation of new protected areas will expand the protection of terrestrial, coastal and marine ecosystems by at least 57,820 ha. Legislative and policy frameworks will be adjusted to the new constitution of the country and consolidated to clarify the governance and management of the national protected areas system. Strategic orientations for the national PAs system will be established to guide the creation of a network that will maximize the representativeness of biodiversity and ecosystem processes within the system. A protected areas authority (or agency), responsible for driving the development and management of national protected areas system will be established and capacities strengthened to provide services to protected areas with the goal of ensuring efficiency and pooling of expertise and financial resources. A knowledge management system for biodiversity conservation will be developed by networking existing databases and creating a specific database on protected areas which will allow implementing adaptive management. A sustainable funding mechanism will be established to cover the recurrent costs of operations in protected areas.

4. At the level of individual sites, the management of protected areas will be consolidated by setting up infrastructure and equipment required for critical operations, the development of management tools, support for collaborative management committees and the implementation of a system for monitoring the resources targeted by conservation efforts in the protected areas. The capacity of stakeholders involved in co-management will be strengthened so that they are able to effectively play their role. Modes of governance in the use of land and other resources will be clarified. Guidelines will be established to oversee the development of a sustainable and responsible tourism associated with protected areas while contributing to the preservation of Comoros unique natural assets. Support will be provided for the development of livelihood and economic activities to reduce pressures on resources while improving communities' quality of life.

## **PART I: Situation Analysis**

### **CONTEXT AND GLOBAL SIGNIFICANCE**

#### ***Socio-Economic Context***

5. Comoros is a small island developing state (SIDS) subject to high demographic pressure leading to intense exploitation of its natural resources which is nearing the limits of its carrying capacity. Demography is characterized by a very young population, 42% of the population is less than 14 year old, and a high density over 395 inhabitants/km<sup>2</sup>, making it one of the most densely populated countries in Africa. In 2013, the Comorian population is estimated at 752,288 inhabitants<sup>1</sup> with an annual growth rate of 1.97%. The population is predominantly rural (72%). The Human Development Index is 0.429 and ranks the country 169th out of 199 countries. The unemployment rate among 15 to 24 years reached 29.4% in 2004<sup>2</sup> and the proportion of the population living below the poverty line is 44.8%. Internal political disputes have hampered economic growth, which averaged 1% in the years 2006-09. More recently, the growth rate of real GDP has improved to 3.0% (2012<sup>3</sup>) and forecasts for 2013 and 2014 are 3.2% and 3.8%<sup>4</sup>. The support of the diaspora consisting of about 150,000 Comorian is important: remittances accounted for over 24% of GDP in 2012<sup>3</sup>. Agriculture, including fishing and forestry, contributes to 50% of the GDP, employs 80% of the labour force, and provides most of the exports. The country's small economic base rests solely on three cash crops (vanilla, cloves, and ylang-ylang). The limited size of cultivable area constrains production capacity, preventing any economy of scale. The country's dependence on imports of petroleum products is important because 83.3% of electricity (est. 2009)<sup>1</sup> is produced from fossil fuels while 16.7% is hydroelectric. The country's geographical isolation, the small size of domestic markets and the geographic dispersion of islands result in considerable additional costs in infrastructure, transport, procurement and communications.

#### ***Environmental and Biodiversity Context***

6. The Archipelago of Comoros consists of four islands situated in the Western Indian Ocean in the northern part of the Mozambique Channel, equidistant from continental Africa and Madagascar: Ngazidja (or Grand Comoro, 1,148 km<sup>2</sup>), Mwali (Moheli, 290 km<sup>2</sup>), Ndzuani (Anjouan, 424 km<sup>2</sup>) and Mayotte (Maore, 370 km<sup>2</sup>). The fourth island is under French administration. The three first above-mentioned islands, which are object of this project, have a total land surface of 1,862 km<sup>2</sup> and coastline of 340 km. The highest point, 2,361 m, is Mount Karthala, an active volcano in the south of Ngazidja. Mount Ntringui in Ndzuani reaches 1595 m and the maximum altitude on Mwali is 790 m. These volcanic islands, appeared at different geological periods, have never been in contact with each other, or with Africa or Madagascar, and are isolated from each other by 400 to 3000 m deep oceanic trenches, which confers distinct biophysical characteristics to each of them. Despite their smallness, heterogeneous ecological conditions in relation to altitude, climate and soil resulted in a high diversity of terrestrial ecosystems that are home to many endemic, endangered and migratory species. Ngazidja Island consisting of permeable volcanic soils has two lakes and no permanent watercourses. Ndzuani has fertile clay loam soils of basaltic origin and its terrain is very steep. Mwali, which is the result of an ancient volcanic activity (as every other island in the archipelago), has fertile clayey loam soils, and often impermeable. In all the islands, the soils are very fertile but fragile and highly vulnerable to erosion. The climate is tropical and rainfall is abundant everywhere, especially during the austral summer, ranging from 1000 mm of rain per year in coastal areas to an average of 5000 mm on the west side of Ngazidja, increasing with the

<sup>1</sup> CIA (US). The World Factbook. Consulté en ligne : <https://www.cia.gov/library/publications/the-world-factbook/geos/cn.html>

<sup>2</sup> Union des Comores, 2005. Stratégie de Croissance et de Réduction de la Pauvreté de l'Union des Comores. Document synthèse. 32 p.

<sup>3</sup> Banque Centrale des Comores. 2013. Rapport annuel 2012.

<sup>4</sup> OCDE 2013. Perspectives économiques en Afrique 2013. <http://www.africaneconomicoutlook.org/fr/pays/afrique-de-lest/comores>

altitude. The hydrographic network of Ndzuanani and Mwali, although originally relatively dense fell dramatically following a massive deforestation and expansion of annual crops, and many sources now cease flowing in the dry season. The decrease of water resources, both in terms of quality and quantity, reduces food and agricultural (irrigation) supply, causes increased operating costs for hydropower and limits hydroelectric potential.

7. **Global Biodiversity Significance.** The Union of the Comoros and its territorial waters contain unique biodiversity as revealed by high levels of endemism within various groups of fauna and flora that are now threatened by the loss or fragmentation of their habitat, combined with by inadequate management and protection. This combination of diversity and threat makes Comoros a high priority for the conservation of globally significant biodiversity. The archipelago is located in a top-25 hotspots for global biodiversity recognized by Conservation International “Madagascar and the Indian Ocean Islands” and in one of the 35 critical areas identified by the World Wildlife Fund: “Madagascar and the Western Indian Ocean”. Birdlife International<sup>5</sup> classified the archipelago as an *Endemic Bird Area* and assigns it the highest level of priority: critical. The 4 *Important Bird Areas (IBA)*, La Grille, Mount Karthala, Mwali highlands and Ndzuanani highlands, all harbour globally threatened and restricted range bird species. The country includes three Ramsar sites (Lake Dziani Boundouni, Mount Karthala and Mount Ntringui).

8. Terrestrial ecosystems include closed rainforests on the highlands of each island and dry forests in lower altitudes<sup>6</sup>, arborescent heather savanna (*Philippia* spp.) on the slopes of the Karthala, and crater lakes on each island. Marine and coastal ecosystems include coral and volcanic sand beaches, mangroves mostly occurring on the southern shore of Mwali, and around Bimbini peninsula and La Selle Islet on Ndzuanani, as well as on the northern part of Ngazidja. Volcanic rocky shores occur mostly on the western coast of Ngazidja, coral reefs widely distributed around each island (total reef area of 305 km<sup>2</sup>)<sup>7</sup> and seagrasses at the northern and southern ends of Ngazidja, around Bimbini Peninsula in Ndzuanani and along the southern coast of Mwali.

9. At least 1045 species of plants are recorded, of which approximately 150 are endemic.<sup>8</sup> Endemism reaches 50% in the orchid family, with 43 endemic species. Endemic trees include rare precious wood essences such as *Croton humblotii*, *Brachylaena ramiflora* var. *comorensis*, and *Khaya comorensis*, as well as *Weinmannia comorensis*, which is more common.<sup>9</sup> Insects are little known, but endemism for Lepidoptera and Coleoptera has been estimated at 34% and 24% respectively; three butterfly species being classified as threatened: *Papilio aristophontes*, *Graphium levassori* and *Amauri comorana*. A recent survey<sup>10</sup> reports the presence of 2 amphibian species and at least 28 species of reptiles. A total of 14 of the 28 currently recognized species of terrestrial reptiles (50%) and the 2 amphibians are endemic to a single island or to the Comoro archipelago. The endemic subspecies *Oplurus cuvieri comorensis* is proposed for the status Critically Endangered. The status Endangered is proposed for three species, Vulnerable for one species, Near Threatened for six species, Least Concern for four and Data Deficient for two species. While some species such as the coelacanth, sea turtles, the dugong, the Livingstone fruit bat, whales and dolphins, have raised considerable scientific interest, many are still unknown to science.

10. The Comoros give refuge to 96 bird species of which 48 are migratory, 10 are endemic and 9 are globally threatened. The distribution of species across the islands is not uniform, with each island having its own set of endemic species. Ngazidja has 47 breeding species of bird, including 11 endemic as well as

<sup>5</sup> Birdlife International. 2014. Endemic Bird Area factsheet: Comoro Islands. Downloaded from <http://www.birdlife.org>

<sup>6</sup> Some sources indicate that Ndzuanani does not harbour dry forests.

<sup>7</sup> IRD. 2009. *Atlas of Western Indian Ocean Coral Reefs. Indian Ocean – EEZ Comoros.*

<sup>8</sup> Gillespie R.G. and D.A. Clague. 2009. *Encyclopedia of islands.* 1074 p.; also verbal source from the National Herbarium (2014), noting that the number of endemic species vary according to source.

<sup>9</sup> Verbal source from the National Herbarium (2014).

<sup>10</sup> Hawlitschek et al. 2011. *Integrating field surveys and remote sensing data to study distribution, habitat use and conservation status of the herpetofauna of the Comoro Islands.* ZooKeys 144: 21–78, doi: 10.3897/zookeys.144.1648

6 species and 10 subspecies endemic to the island. Mwali is home to 45 breeding species of bird, including 7 endemic as well as 2 species and 9 subspecies endemic to the island. Ndzuanu hosts 39 breeding bird species, including 5 endemic, as well as 2 species and 7 subspecies endemic to the island<sup>11</sup>. Four species are restricted to Mt. Karthala alone, which also includes all other restricted range species occurring on more than one island, making it the most important area for bird conservation in the country, in terms of threatened endemics. Similarly, there are a number of bird species with very restricted ranges, known only from the Comoros and neighbouring islands, such as the endangered<sup>5</sup> Madagascar heron (*Ardea humbloti*).

11. Endemic mammals include the Comoro Rousette (*Rousettus obliviosus*), found on all three islands, listed as vulnerable<sup>12</sup> and the Comoro black flying fox (*Pteropus livingstonii*), found on Mwali and Ndzuanu, listed as endangered. Latest surveys estimated *P. livingstonii* population size at 1200 individuals. Both species are threatened by forest destruction, reduction of river flow on Ndzuanu and Mwali Islands, and the disappearance of the tree species on which their survival depends. The Mongoose lemur (*Eulemur mongoz*), also listed as vulnerable, occurs only in the Comoros and Madagascar.

12. The Comoros are also home to a number of globally threatened species that are not endemic to the country, but that have regionally restricted ranges or are globally rare. Most famous of these is the critically endangered coelacanth, *Latimeria chalumnae*, found off the coasts of Ngazidja and Ndzuanu. Although the coelacanth occurs in other parts of the Indian Ocean, recent genetic studies<sup>13</sup> based on mtDNA sequences indicate that the coelacanths from the Comoros form a separate breeding population, which reinforces the critical importance of conserving this population. An expedition conducted with a submersible in 2008 estimates that the population in the south west of Ngazidja reaches approximately 500 individuals<sup>14</sup>. Recent research suggests that the survival of the coelacanth is threatened by accidental catches by local fishermen.

13. The marine environment of the Comoros is home to a diverse and abundant marine and coastal biodiversity and including species of global importance. Nearly 820 species of coastal and pelagic fish exist in Comoros, 485 in the waters of Ngazidja grouped into 24 orders and 89 families. Comorian waters are also frequented by marine mammals: i) the dugong *Dugong dugon*, listed as vulnerable, occurs around Mwali and possibly the other islands, ii) over 10 cetacean species including *Megaptera novaeangliae* (humpback whales) visit Comorian waters to reproduce from mid-July until the end of October, *Eubalaena australis* (Southern Right Whale), *Balaenoptera edena* et *Physeter macrocephalus* (Sperm Whale), and iii) dolphins including *Sousa chinensis* (Indo-Pacific Humpbacked Dolphin, near threatened), *Stenella longirostris* (Spinner Dolphin), *Tursiops truncatus* (Common Bottlenose Dolphin) and *Delphinus delphis* (Short-beaked Common Dolphin). All whale species are protected by the CITES international convention. Dolphins and whales are found west and south of Ngazidja between Chindini and Itsandra, southwest of Ndzuanu between Pomona and Moya and south of Mwali around the Moheli Marine Park. The highest concentrations of dolphins are found off of Itsounzou, in Baie des Dauphins, in greater abundance from September to December. These species are not currently known to be threatened but could be affected by industrial fishing activities (risk of collisions with boats and entanglement in fishing nets), unregulated development of whale-watching for tourists, and poaching resulting from the absence of patrolling at sea.

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<sup>11</sup> Louette, M., J. Stevens, L. Bunens et L. Janssens. 1988. *A survey of the endemic avifauna of the Comoro Islands*. Cambridge, UK: ICBP (Study Report 25)

<sup>12</sup> The status of species listed in this section is from the IUCN Red List of Threatened Species. Version 2011.2. <[www.iucnredlist.org](http://www.iucnredlist.org)>. Downloaded on 01 May 2012

<sup>13</sup> Nikaido, M., Sasaki, T., Emerson, J., Aibara, M., Mzighani, S., Budeba, Y., Ngatunga, B., Iwata, M., Abe, Y., Li, W., and N. Okada. 2011. *Genetically distinct coelacanth population off the northern Tanzanian coast*. Proceedings of the National Academy of Sciences, 108 (44), 18009-18013

<sup>14</sup> Ahamada S. 2008. *Comores: Expedition internationale sur le Coelacanth*. Portail Ocean Indien.

14. Several migratory species use Comorian waters as breeding grounds. Two species of marine turtle, the endangered<sup>5</sup> green turtle (*Chelonia mydas*) and the critically endangered<sup>5</sup> hawksbill turtle (*Eretmochelys imbricata*) frequent various sites around Mwali and Ngazidja but reproduce only on the beaches of Moheli Marine Park, making it the most important nesting site in the Indian Ocean and the 10<sup>th</sup> in the world. Approximately 3,000 females nest annually over the five beaches monitored daily by ecoguards of the PMM and Itsamia village association as part of a monitoring program underway since 1998<sup>15</sup>. Monitoring of nesting beaches Itsamia allowed to record an annual increase of ascent tracks by 25% between 2000 and 2006. Yet, the pressure exerted by the degradation and loss of beaches due to sand mining and poaching for eggs and meat is still intense despite education and awareness programs and surveillance of nesting beaches implemented in Mwali.

### ***Protected Area System: Current status and coverage***

15. Protected areas (PAs) should be the principal means of protecting the unique biodiversity of the Comoros while preserving the ecosystem services on which rests the narrow subsistence base of local communities. Yet, this is not yet the case

16. Moheli Marine National Park, established in 2001, is the presently the only gazetted site in Comoros. There are no formal PAs that provide protection to terrestrial ecosystems, which are under a considerable degree of pressure (as it will be further explained in the next chapter). Since the establishment of Moheli Marine Park, Comoros has had plans to establish at least one terrestrial and one marine protected area on each of the islands. For various reasons, including incipient PA management capacity, these plans have until now remained unfulfilled.

17. The establishment of the Moheli Marine Park was facilitated by the GEF-UNDP project “*Conservation of biodiversity and sustainable development in the Federal Islamic Republic of the Comoros*” (implemented between 1997 and 2002). The project also introduced a long-term and step-wise vision for the PA system. The next envisaged step would be the consolidation of network of protected areas composed of six sites, including Moheli’s Marine Park, and where each of the islands would designate one marine and one terrestrial protected area.

18. Since then, the Government pursued its efforts towards implementing this plan. Two projects were particularly important in advancing towards the proposed ‘protected area vision’ for Comoros: (1) the ‘OCB Project’ (*Capacity development and promotion of CBO volunteering as a model for involvement of village communities in achieving the MDGs in the Comoros*, financed by UNDP); and the multi-partner ‘ECDD Project’ (*Community engagement for sustainable development*). They have focused on terrestrial sites and at least the OCB project had in view steps towards creating three national protected areas and 3 community reserves, and on developing national capacity for environmental management. Through these projects, biodiversity inventories, identification of land/resource use and threats, GIS-based delineation and zoning were completed or are in the processing of achieving this. Also, village co-management agreements were negotiated and prepared, and draft decrees for the creation of the national protected areas were formulated and technically validated. Hence, at least three sites are very close to gazettal. The OCB and ECDD projects also contributed to the establishment and capacity development of local advisory committees consisting of two delegates from each village bordering a protected area, which will ensure the representation of village communities in the co-management of protected areas.

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<sup>15</sup> Innocenzi J., J. Maury, A. M’soili et S. Ciccione. 2010. Reproduction biology of green turtle in Itsamia, Moheli (Union of Comoros). Indian Ocean Turtle Newsletter No. 11. p. 5-7.

19. The protected area coverage (i.e. based on fully designated PAs through national laws) and the level of ecosystem representation within the system is still very limited. The Moheli Marine Park covers 36,675 ha of seascape plus seven uninhabited islets and four rocks summing 3,725 ha in land surface. It is managed by the Ministry of Production, Environment, Energy, Industry and Handicrafts (MPEEIH) with the collaborative support of local communities (this is discussed in the next two chapters). Although evaluation studies<sup>16</sup> and the test of time have revealed several shortcomings in this co-management approach, it is still recognized as the most appropriate model for the governance of protected areas in the Comoros.

20. Yet, the entire surface of Moheli Marine Park with 40,400 ha provides protection to no more than 2% of the country's terrestrial surface and to slightly less than 3% of the country's territorial waters. There is scope and potential for expanding the PA estate, including on the basis of international or similar designations (e.g. Ramsar sites and Important Bird Areas – see [Box](#) below). This expansion would build on the baseline enabled by initiatives such as the OCB and ECDD projects, including through the involvement of local community players in the management of sites.

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<sup>16</sup> J. Brand, 2007. *Diagnostic de la situation du parc marin de Mohéli (PMM) et propositions d'actions. Rapport préparé pour le Projet Réseau des Aires Protégées Marines des Pays de la Commission de l'Océan Indien*. 44 p. – Roby D., Soulé H., Combo A. et A. Sene. 2002. *Évaluation finale du projet PNUD/GEF Conservation de la Biodiversité et Développement Durable aux Comores*. Ministère de la Production et de l'Environnement, Union des Comores. 82 p.

### ***Box 1. International Designations for Sites in Comoros***

**Important Bird Areas (IBAs):** A total of 4 IBAs were identified based on assessments conducted in 2001: Mount Karthala (21,000 ha), La Grille (2,600 ha), Mwali highlands (4,000 ha), and Ndzواني highlands (6,850 ha). These sites include 9 globally threatened bird species, of which 3 are critically endangered, 10 endemic species, 52 migratory species, and numerous restricted-range species. All restricted-range species occur in the forest, largely in the uplands where there is forest remaining, apart from *Zosterops mouroiensis* which is now confined to the higher-altitude heath zone of Mt Karthala on Ngazidja. Colonizing ('pioneer') forest on recent lava-flows on this mountain may be an important habitat for some species, e.g. *Otus pauliani*. The distribution of species across the islands is not uniform, with each island having its own endemic species (five on Ngazidja, one on Mwali, and three on Ndzواني). Mt Karthala is the most important area ornithologically, four species being restricted to this one mountain alone; all the other multi-island, restricted-range species as well as *Nesillas brevicaudata* (which occurs more widely on Ngazidja) also have significant populations there, further emphasizing its importance.

**Ramsar sites:** There are 3 wetlands of international importance in the Comoros covering a total area of 16,032 ha: the Dziani-Boundouni Lake (Mwali, 32 ha), the Karthala forest (Ngazidja, 13,000 ha) and Mount Ntringui (Ndzواني, 3000 ha). These sites are included in existing and future protected areas.

**Alliance for Zero Extinction (AZE):** Three (03) sites have been listed in the AZE list, namely Mount Karthala, Mwali highlands and Ndzواني highlands. They coincide with the IBAs and all 'Red-listed' species that triggered the listing belong to the AVES taxon. This indicates the need to look at other biodiversity values and how the PA system will protect them.

**Other:** Comoros is part of the CI Biodiversity Hotspot 'Madagascar and the Indian Ocean Islands' and of the WWF Global 200 ecoregion #234 (West Madagascar Marine - Comoros, Madagascar, Mayotte and Iles Glorieuses (France), Seychelles). Finally, UNESCO (a project co-financier) is working with the UN Office and the government to assess the possibility of developing UNESCO designations (WHS and MAB).

Sources: Birdlife Datazone [\[Link\]](#), Ramsar Sites Database [\[Link\]](#), AZE [\[Link\]](#), CI Hotspot [\[Link\]](#) and WWF Global 200 [\[Link\]](#)

21. There are several reasons why an expansion of the PAs on Comoros has not occurred until now. First, the Union has experienced prolonged political instability and establishing and managing a network of PAs has not been a high priority for each subsequent government. Secondly, the lack of clarity on the degree of autonomy each island would have has only recently been rectified and although some details are still being worked out in terms of environmental management, the situation is ready for Union level conservation initiatives. Finally, although the establishment of additional PAs in the country has been planned for many years, there has been a continuous lack of funding – one previous combined proposal to establish a PA network and a trust fund to support its operation was not successful at raising capital and another project to establish a trust fund was also unsuccessful.

### ***Institutional Context***

22. A new institutional framework has recently been adopted and the required organizational changes are not yet completed. Information about the current institutional context aims to understand the division

of roles and responsibilities between the Union and Islands institutions and the institutions capacities in order to improve the relevance of the proposals put forward by the project.

23. Institutional framework and division of competencies. After a long period of political instability, Comoros adopted a constitution in 2001, which was revised in 2009<sup>17</sup> to reduce jurisdictional disputes and reduce costs in the management and financing of institutions. This constitutional reform defines a new division of responsibilities, duties and powers between the Union and the Islands. The process of distribution of competences is under way and the framework has been clarified but some implementing regulations have not yet been adopted. Environmental issues that were under the competence of the autonomous islands are, since the 2009 revision, the responsibility of the Ministry of Production, Environment, Energy, Industry and Handicrafts<sup>18</sup> (MPEEIH) of the Union Government.

24. Devolved authority. According to the constitutional reform of 2009, the Union is represented in each autonomous island by a General Delegate of the Union appointed by the President of the Union, in consultation with the Governor of the island. The Delegate shall ensure the execution of the Union laws and regulations and provide overall direction of civil servants and administrative devolved services<sup>19</sup>. The administrative, financial and technical control of the State is exerted on the islands through three Delegates and on communes through the prefects.

25. Decentralized authority. According to the constitutional reform of 2009, The Presidents of the Autonomous Islands are now Governors and Ministers are Commissioners with reduced staff. Islands Governors, elected for five years, have an executive function. Commissioners, appointed by the Governors, are responsible for managing one or more administrative services.<sup>20</sup>

26. Competences Union - Islands. Before the 2009 revision, the Environment was under the jurisdiction of the Autonomous Islands. According to the revision, the responsibility of the Environment as well as a range of other fields is now the responsibility of the Union. Although environmental issues – and thus the management of the national system of protected areas – fall within the competence of the Union, many matters within the competence of the autonomous islands are also relevant to the management of protected areas: activities in support of the protected areas riparian communities spatial planning of the island, the rural police, artisanal fisheries, the management of secondary roads, and local basic vocational training.

27. Since the transfer of island institutions' competences to those of the Union is not completed, there is a lag between the adoption of the Constitutional Law and adjustment of institutional structures. In fact, the commissioners appointed by the Islands Governors have designations that still reflect the sharing of competencies prior to the revision, thus overlapping the Union's new powers. Regional departments in charge of the Environment and services responsible for PAs are found under the Governorates of each island. Overlapping mandates to prevent an integrated planning for the work of each entity towards common goals and reduces the efficiency of the system as a whole because of duplication and lack of coordination.

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<sup>17</sup> Referendum Act of 9 June 2009 amending the Constitution of the Union of Comoros from December 23, 2001 and Ordinance No. 09-003 / PR On the implementation of certain provisions of the Referendum Act.

<sup>18</sup> According to Decree No. 13-082/PR 13 July 2013, on the Government of the Union of the Comoros, the three Vice -Presidents of the Union are currently responsible for the following ministries : i) Planning, Urban Development and Housing, ii) Finance, Economy, Budget Investment and Foreign Trade, in charge of Privatization, iii) Health, Solidarity, Social Cohesion and Gender Promotion. Other ministries are: External Relations and Cooperation, responsible for Diaspora, Francophonie and the Arab World; Posts and Telecommunications, Promotion of New Information and Communication Technologies, responsible for Transport and Tourism; Justice, Public Service, Administrative Reforms, Human Rights and Islamic Affairs; National Education, Research, Culture, and Arts in charge of Youth and Sports; Employment, Labour, Vocational Training and Women Entrepreneurs; Interior, Information, Decentralization, in charge of relations with Institutions.

<sup>19</sup> Article 7-4 of the Constitution revised in 2009

<sup>20</sup> Article 7-2 de la constitution révisée en 2009

28. **Local authorities.** The territory of the Union of the Comoros<sup>21</sup> is divided into three islands and 54 communes distributed in 16 prefectures. As the base local authority in the Comoros<sup>22</sup>, the commune is the institutional framework for the population to participate in the life of the nation and must guarantee the expression of democracy at their level. The mayors who should be elected are currently designated by Governors but municipal elections scheduled for the end of 2014 will restore their legitimacy as representatives of the population's interests. Communes contribute inter alia to spatial planning, protection of the environment and improving the living environment. Since stakeholders involved in biodiversity conservation in Comoros favor a model of governance for protected areas where the role of riparian communities is preeminent, communes should play an important role in mobilizing their participation and standing up for their interests. This is also enshrined in the National Biodiversity Strategy and Action Plan and in relevant legislation (discussed further down).

29. In summary, based on the texts currently in force, the creation of protected areas concerns the three levels of government. Management of the environment is under the Union, spatial planning of the islands falls within the competence of the Autonomous Islands and the protection of the interests of local communities around the protected areas responsibility of the municipalities. These powers must be respected in the development of policy and legislative frameworks for the PA national system and capacity development. In a recent and evolving institutional context, these new frameworks will provide a clear reference for the sharing responsibilities for PAs, in accordance with the competences of each institution.

30. The **MPEEIH** has primary responsibility for managing the environment. The proposed organizational structure includes an administrative and financial direction supported by six services: i) Planning, monitoring and evaluation, ii) Public Relations, iii) Training and Development, iv) Communication, v) Legal support and cooperation and vi) and Statistics and geographic information systems (GIS). The Ministry is structured into seven national directorates that are: Environment and Forest, Fishery Resources, Agricultural Strategies, Energy, Water & Sanitation, Industry, Handicraft and the National Research Institute for Agriculture, Fisheries and the Environment (INRAPE). The department has 98 positions, all directorates combined.

31. Ministry priorities are dictated by an assignment letter from the Presidency, which is translated into an action plan for a period of 5 years. The priorities of the current plan (2011 - 2016) are i) to restore the forest cover to at least 4.7% of the national territory, ii) increase protected area coverage to 3% of the total land area and iii) develop measures to adapt to climate change.

32. The **Framework Law on the Environment (FLE)** which was the legislative framework for the creation of the single protected area legally constituted in Comoros assigns responsibility for the creation of protected areas in the Ministry of Environment, although it does not specify which entity is in charge of managing and/or overseeing the management of PAs—it remains implicit that it should be a directorate of the ministry in charge of the environment, which has an overarching role of implementing the Framework Law. However, under the law on forest management and the Code on fisheries developed respectively in 2012 and 2007, other ministries also have a responsibility for marine and terrestrial protected areas.

33. The **Code on fisheries and aquaculture** (Act No. 07-011 of 17 September 2007) assigns responsibility for the protection of aquatic species and ecosystems to the administration responsible for fisheries and aquaculture, in collaboration with the administration in charge of the environment (art. 56). The responsibility for classification and delimitation of aquatic protected areas (Art. 73) is shared by the administrations in charge of fisheries and of Environment, the authorities of the autonomous islands and representatives of local communities. Management of MPAs (art.76) is also shared by both

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<sup>21</sup> Loi no. 11-006/AU du 2 mai 2011 portant organisation territoriale en Union des Comores

<sup>22</sup> Loi N°11-005/AU du 7 avril 2011 portant décentralisation au sein de l'Union des Comores

administrations responsible for fisheries and environment whose authorization is required to conduct a series of activities in aquatic protected areas.

34. The **Directorate General for the Environment and Forests** (DGEF) assumes the institutional responsibility for protected areas in Comoros and is responsible for coordinating and monitoring measures in the strategy for biodiversity conservation in the country and the coordination of the Government's and NGOs' actions to protect marine, coastal and terrestrial ecosystems.

35. Under the new organizational structure, the DGEF is steering 3 departments: Sustainable Development, Management of Water and Forests, and Legislation and Regulation, as well as service for information and data collection (IDCS), which is directly attached. This framework proposed in 2011, has not yet been validated. It provides for 35 managers and staff but in the current context of constraint in hiring in the public service, the direction has only 15 employees, some of which are mobilized by project coordination. Insufficient staffing is balanced by allocation of 20 volunteer interns of which most have recently graduated and thus have the opportunity to gain practical experience while allowing the direction to benefit from their knowledge. The Department of Sustainable Development includes a service for terrestrial and marine protected areas, which has one official and four trainees.

36. The budget of the DGEF consists primarily of salaries. The Directorate has an executive vehicle, fuel allowance of 200 liters per quarter and an allowance of 70 000 KMF every two months for communications. The directorate is housed in six offices and has some premises allotted to projects including an entire building, most being located in Mde within the complex of buildings of the former CEFADER. These premises are equipped with electricity and Internet access for all staff. The equipment available to the direction includes basic furniture, 6 desktop computers, 4 printers, 2 photocopiers and 1 scanner, all functional.

37. The program of work of the DGEF follows an annual action plan developed on the basis of the mission statement assigned to MPEEIH by the Head of State. The action plan is updated annually and progress is assessed every six months using indicators.

38. **The Directorates in charge of the Environment on autonomous islands.**

39. These regional directorates (DEFs) report to the Commissioners of the Islands in charge of the Environment and are not linked to the Directorate General of Environment and Forests. The Directors are appointed by order of the Governor of the Island. Rearrangements are frequent and related to changes of government and functional reorganization required by changes in the institutional structure of the Union and the Islands.

40. Each directorate has developed a distinct organization chart including 2 to 3 technical directions and several specific positions. These charts have not been validated and staff, fewer than planned, is supported by volunteer interns. Mwali has 6 staff supported by one trainee; Ngazidja has 9 employees supported by 7 trainees; Ndzuani has 6 employees supported by 10 trainees and one contractual. In Ngazidja, an official is in charge of PAs and in Ndzuani, the question of PAs was assigned to a volunteer intern. Budgets consist mainly of staff salaries. In Mwali only, a monthly allowance is provided for 100 litres of fuel and 12 500 KMF for telephone communication. Money paid from logging permits and fines shall be deposited in a special account and will be used to purchase small equipment. All directorates have premises with electricity at their disposal. Equipment is limited to a fixed functional computer and office furniture. Only Ngazidja has access to Internet. Directorates have no vehicle. It is expected that a project vehicle will be transferred to Ndzuani directorate but it has no budget for repairs and fuel.

41. Currently, the mandates of directorates are defined by new constitutional texts that specify the powers of the institutions of the Islands. Consequently, their role in the establishment and management of protected areas is not clearly defined, especially as the legal texts governing the creation of protected areas – and in particular that of Mohéli Marine Park (PMM) – refer to an institutional framework that may

still need to be adapted to newer constitutional changes in sectoral competencies. Planning, research and studies are now driven by the institutions of the Union without always involving the regional directorates on the islands. This lack of clarity and limited cooperation contributes possibly to the disconnection between the PMM and the potential positive role that could be played by the regional DEF, whereas in its early stages, the Regional Service (i.e. island) in charge of the Environment was closely involved in the whole process of establishing the protected area and actively involved in its co-management. There is some work planning but activities are not budgeted and are carried out as part of external support. Occasional follow-ups are made based on the opportunities offered by the projects and reports are prepared on an irregular basis

42. **Reforestation.** Several reforestation activities are initiated in various initiatives but do not give the expected results over the medium term. On the one hand, these actions are carried out without any planning that would indicate the suitable species and sites for reforestation. Without appropriation, these plantations are not maintained or protected and are vulnerable to predation by animals.

43. **Mwali forest brigade.** A forest brigade attached to the Governorate and under the supervision of COSEP and DEF was created in December 2011 to ensure the control and surveillance of the forest on the island of Mwali. Thirty forest eco-guards were recruited by Governorate in 2013, of which 25 are assigned to the area where the land extension of the protected area is planned. Their mandate is to enforce regulations regarding the prohibition of logging on the coast, near rivers and in a forest and to contribute to reforestation. The training of most of them is inadequate to fulfill the tasks entrusted to them; they are not sworn and have not received training to enable them to act as auxiliary of justice.

44. **Ndzuani environment brigade.** A Brigade for the Protection of the Environment established in 2000 under the supervision of the DEF is composed of 12 people (11 contractors and 1 volunteer). It is responsible for surveillance to enforce regulations regarding the prohibition of deforestation, land clearing, logging and fires. The brigade members are provided with uniforms financed by a fundraising during an Environment Day. Offenses are reported at weekly meetings or in telephone message, but the police reports and field interventions are delayed or do not take place in the absence of adequate means of transportation.

45. **Rural Centres for Economic Development (RCED).** The RCED were created in February 2013 (Decree No. 13-015/PR) to supervise the rural development programs for the economic advancement through the productive and environmental protection sectors. In terms of environmental protection and conservation of natural resources, the centers have to i) organize and conduct awareness campaigns on reforestation, ii) assist and facilitate the realization of environmental impact assessments (EIA), and iii) ensure compliance with laws and regulations relating to environmental management and natural resources, with the collaboration, when necessary, of the police force and gendarmerie. A close relationship will be established between each PA and the relevant RCED.

46. The **National Directorate of Civil Defence** will participate in the surveillance of PAs and enforcement of regulations. A number of staff have received training on PA management. The **National Coast Guard** is responsible for monitoring activities and ensuring safety in the marine environment of the Comoros. **Gendarmerie Brigades** and **Police Stations** in the prefectures are responsible for surveillance and enforcement of regulations in their respective territory.

47. **Environmental and development NGOs and associations** are essential actors of conservation and sustainable development activities in the Comoros. In several PA sites, local associations were formed at the initiative of the population of one or more villages to take over environmental and development issues. Ulanga (= environment) associations exist in almost every village and, despite their limited capacities, can act as relays to mobilize communities, especially the youth, to environmental causes. As part of the preparation of this project, a stakeholder analysis focusing on national NGOs and associations was carried out in each island to identify active groups, their membership (men and women),

mission/objectives and experience or main achievements. This analysis will serve to identify the most relevant associations to involve in specific activities of the project, such as awareness activities, tree nurseries, reforestation, monitoring of biodiversity, etc. A brief description of the roles and participation expected from them in the project activities is presented in the Stakeholder Analysis of this document. A preliminary identification of the main associations and NGOs involved in environmental protection in the PA sites includes AIDE (marine expertise, coral reefs), Action-Comores (Livingstone fruit bats monitoring in Ndzuani and Mwali), APG (awareness on sustainable fishing practices to preserve the coelacanth in Ngazidja), *Association Ndroudéenne d'Échanges Culturels et de Protection de l'Environnement* (conservation of Turtle Island, Ngazidja), *Les amis de Nyiumbadjou* (Karthala forest conservation, Ngazidja), MEM/House of Ecotourism (Ecotourism development, Mwali), UMAMA (waste management and beach clean-ups, Ndzuani), OPAS (mangrove restoration in Bimbini, Ndzuani), numerous village associations throughout the PMM area, and mixed national/international NGOs such as Moidjio CRCAD (marine biodiversity monitoring and conservation in Mwali) and Dahari (terrestrial biodiversity surveys and conservation in Ndzuani). Many other associations could make valuable contributions to support the implementation of the project and will be involved as relevant.

### ***Policy and Legislative Context***

48. **Strategic Programming Framework as regards climate change, preservation of the natural environment and disaster risk reduction (2011 – 2016).** This environmental programming framework is the main policy document and the strategic planning tool of the Government, and was developed with the support of the United Nations System. Priorities set forth therein are to i) restore forest cover to at least 4.7% of the national territory, ii) increase the coverage of protected areas to 3% of the total country area, and iii) develop adaptation measures to climate change.

49. The **National Biodiversity Strategy and Action Plan** (NBSAP, 2001) identifies the country's vision for biodiversity conservation. One of its objectives related to protected areas is to *“Define and adopt a management framework for PAs where the essential involvement of local communities is recognized for the establishment and management of PAs”*. A revised and updated NBSAP that fully integrates new aspects of the CBD strategic plan and the Aichi Targets, is currently being formulated for the Comoros.

50. Protected areas and biodiversity in the Comoros are regulated under a number of different legal instruments.

51. Protected areas are governed by Articles 46 to 49 of the **Framework Law on Environment** (1994, rev.1995), which define the types of protected areas (national park or natural reserve) as well as the justification (exceptional interest from the aesthetic, scientific, ecological or cultural point of views), the gazettal process (Article 47: a public inquiry and consultation with local and regional public authorities, a proposal of the Minister of the Environment, and a Decree from the Council of Ministers), the contents of the for PA designation decree (Article 48: objectives, delimitation, establishment of a managed peripheral area, PA management plan which must be designed primarily for the *“maintenance of traditional land uses”* that are consistent with objectives the PA establishment, and the charges and obligations of populations relating to the protection) and procedures and conditions for declassifying.

52. **Presidential Decree No. 01-053/CE (2000) that created the Moheli Marine Park** serves as a model for other PAs particularly with respect to the issue of co-management, although the respective roles of the institutions in charge of Environment at the Union and Island levels will have to be updated to comply with the new and revised constitution. It indicates that the park falls under the responsibility of the ministry in charge of environment and is managed by a joint management committee comprising

representatives of the villages bordering the PA, the ‘curator’ of the park (i.e. site manager or *conservateur*), and the regional authorities. This is the model envisaged for the PAs in the process of being created. The technical team within the park and the *écogardes* ensure day-to-day management of the area. The management committee reviews the PA annual report, validates the PA work plan and provide overarching guidance on PA management strategies. Village communities are involved in the management of the MPA under formal collaborative management agreements between each of them and the island authority in charge of environment. Negotiations are carried out with input from their local development or environment (Ulanga) associations, based on a framework agreement for co-management, which is also developed in a participatory manner. These agreements define the zoning, the rules for resource use, roles and responsibilities including community involvement in the surveillance and the designation of *écogardes* (rangers) and of a representative on the co-management committee by each village association. Under this decree, the order No. 02/002 MPE (2002) establishes the geographical coordinates of the PMM and its overall plan.

53. The **Law on Forest Management** (No. 12/001 AU, June 2012) considers PAs as classified forests (Article 32), under which they are subject to the provisions of this law. The FLE and the law on forest management each set their own conditions for the creation of a protected area or of a forest domain.

54. The **Code of fisheries and aquaculture** (Act No. 07-011 of 17 September 2007) assigns authority for the protection of aquatic species and ecosystems to the administration responsible for fisheries and aquaculture, in collaboration with the administration in charge of the environment (art. 56). This protection includes (art. 57) the creation of aquatic protected areas (reserves, marine parks and sanctuaries) and ex-situ conservation (aquarium and gene banks). It differentiates aquatic reserves (art. 63) defined as areas delineated for management purposes to protect fishery resources, from sanctuaries created mainly to protect endangered species (Article 72), and marine parks (art. 64) as areas of the public maritime domain created for the conservation of plant and animal species and their habitats.

55. Legislation provides protection for the Comorian species on the international (CITES) and national levels through the **Order on the protection of wild fauna and flora species of the Comoros** (No. 01/031 MPE/CAB of May 2001), which provides two lists specifying integrally and partially protected fauna and flora species (which use is submitted to prior authorization by the Minister of Environment, after consulting a licensed national scientific institution). Although periodic revisions were provided, the list has never been revised.

56. An order adopting the **Action plan for the conservation of marine turtles in the Comoros** (No. 01/033 MPE/CAB of May 2001) validates the document and adopts it as a national instrument for the protection of sea turtles.

57. The **decree on Rural Economic Development Centres (REDC)** N° 13/005 PR of February 2013 creates REDC to be in charge of, especially with regard to environmental protection and conservation of natural resources, awareness campaigns on reforestation, facilitation of the realization of EIAs, and ensuring compliance with laws and regulations relating to the management of the environment and natural resources. For this mission, the CRC may seek the cooperation of the police and gendarmerie.

58. With the exception of the laws on forest management, the existing array of laws and regulations that directly and indirectly govern management of Protected Areas are, for the most part, out of date, incomplete and in some cases contradictory and hence are in great need of revision. These texts were written during a period when the political and institutional structure of the country was totally different and the mandates of the regional services of the DGEF cannot be transposed to the Commissioners in charge of the environment in the Autonomous Islands.

59. The protected areas of Comores are inadequately financed and rely almost entirely on donor funding at present. Moheli Marine Park is the only full national protected area and has been funded

historically from a series of grants from a range of donors and some financing from the government. The financing from the government for PAs is largely limited to financing salaries for ministry and environmental department staff as well as basic infrastructures for PMM. The country is seeking to greatly expand the protected areas network and an initial cost estimate has been conducted by AFD for PMM and by the UNDP for the entire future PA system. The financing for the PA system will necessarily include the costs for the establishment and support of a new Protected Areas agency and the establishment of PA management teams at each PA site. The predictive cost estimates are likely to be overestimates of the costs for two reasons. One is that the existing PA management and scientific expertise assumed by the projections does not exist at present and must be augmented to fulfill the range of salaried positions needed. Secondly, due to the lack of trained staff, a more centralised management is proposed leading to fewer staff positions with periodic support of each PA on site. The projected financing needs for the future PAs of Comores is presented in the table below.

**Table 1: Optimistic Cost Projections for 5 years of PA management in Comores in USD**

<b>First 5 Years</b>	<b>Year 1</b>	<b>Year 2</b>	<b>Year 3</b>	<b>Year 4</b>	<b>Year 5</b>	<b>Total</b>
<b>PMM (with Ter)</b>	362,092	362,092	456,184	456,184	456,184	2,092,737
<b>Karthala</b>	312,950	312,950	357,901	357,901	357,901	1,699,602
<b>Mont Ntringui</b>	294,860	294,860	321,721	321,721	321,721	1,554,882
<b>Norther Coast (GC)</b>	0	0	293,855	293,855	319,711	907,421
<b>Coelacanth</b>	0	0	299,885	299,885	331,771	931,541
<b>Bimbini</b>	0	0	299,885	299,885	331,771	931,541
<b>Moya</b>	0	0	74,767	74,767	74,767	224,300
<b>Agency / HQ</b>	145,485	145,485	315,630	315,630	329,073	1,251,304
<b>Total</b>	<b>1,115,388</b>	<b>1,115,388</b>	<b>2,419,828</b>	<b>2,419,828</b>	<b>2,522,897</b>	<b>9,593,329</b>

Note: This table provides an extrapolated analysis with an average of \$1.9 million per year

60. Current sources of financing are from the Agence Française de Développement (AFD) for PMM and from the UNDP (see Baseline section). The AFD has proposed the creation of a Conservation Trust Fund (CTF) for long term PA financing. During the early 2000s the idea of a CTF for biodiversity in the Comores was developed through a project by the UNDP and although the fund was never capitalized, the government created a government fund called “*Fonds pour la Gestion de l’Environnement (FGE, Environmental Management Fund)*”. The FGE has been designed to capture financing from green taxes and would dispense financing for a range of environmental needs – not just protected areas. A protected area based Conservation Trust Fund that involves the government but is independent as most successful CTFs in the world, will be an essential structural element to PA financing in the Comores. It has been estimated that a trust fund with a capital endowment of \$30-50 million could finance a substantial percentage of the PA financing needs for the PAs of Comoros indefinitely (PPG study on PA Financing, Meyers 2013). A minimum endowment of \$15 million could possibly sustain half to one third of the annual costs of the PA system. The remaining financing would come from government and other direct sources such as tourism and not least also additional donor investment through projects. The latter may still be an important source of finance to the PA system in the coming years, even though limited in time.

61. Tourism revenues could be an important source of financing for the PA system. Although tourism in the Comores is currently very limited, it is expected to grow and the PA system will be one of the most valuable attractions for international tourists. Currently PA entrance fees are charged by the villages in the PMM and the marine park does not capture any revenues from tourism. This situation will need to be

revisited in a careful manner to avoid disenfranchising the local communities while increasing the financing coming to the PA system. This can be accomplished through the strategic increase in tourism entry fees with the additional money coming directly to park management.

## THREATS, ROOT CAUSES AND IMPACTS

62. The key threats to the biodiversity of the Comoros and the services they supply are summarized below:

<i>Driver</i>	<i>Habitat change</i>	<i>Climate change</i>	<i>Invasive species</i>	<i>Over Exploitation</i>	<i>Pollution</i>
<i>Ecosystem</i>					
<i>Terrestrial Ecosystems</i>	Historically and currently significant	Not well known	Serious, increasing	Locally important	Limited
<i>Marine Ecosystems</i> (coral reefs, seagrass beds, mangroves, beaches)	Limited	Serious, but status uncertain	Not well known	Locally important (destructive fishing, poaching)	Locally important (near settlements)

63. Threats to biodiversity in Comoros can be classified within the following categories: (i) Habitat / land use change; (ii) Invasive Alien Species; (iii) Overexploitation; (iv) Climate Change and (v) Pollution, the main threat being the loss of forest habitat to encroaching agriculture. The poor development of economic activities and the dependence of mainly rural communities on natural resources for their livelihoods induce a strong human pressure on resources. This pressure is often exerted through the use of unsustainable and even destructive farming and fishing methods, such as slash and burn, fishing on foot on coral reefs or using Tephrosia. Moreover, the limited territory increases the intensity of population pressure and contributes to intensive exploitation of resources, conversion of vegetation cover and loss, degradation and fragmentation of habitats.

### *Habitat /Land use change*

64. In the second half of the 19<sup>th</sup> century, vast territories were granted to European colonists who developed sugar plantations on the best lands of every island. The indigenous population was pushed back to the less fertile regions and to the forest they had started clearing for shifting cultivation. It was at this time that many species of fruit trees and perfume plants were introduced and precious wood species like *Khaya comorensis* have been overexploited and disappeared from certain areas such as La Grille forest. From the early 20<sup>th</sup> century, on all lands bordering the islands, the forest is replaced by cash crops, especially coconut, to the benefit of large colonial societies. Meanwhile, population pressure increased and land became a crucial issue. In Ndzuani, more than three-quarters of arable land areas were occupied by companies and colonists while comorian farmers were pushed into the forests on mountain slopes or illegally into companies land. From 1929 until the 1960s, in response to a law that applied to many colonies, private companies retroceded thousands of hectares of land to the Comorian government, starting with the least fertile land. An agrarian reform transformed plots of food crops within domains into "village reserves". These processes led to poorly defined land retrocessions and a situation of ambiguity and uncertainty regarding land tenure which still prevails today.

65. Nowadays, the felling of understory trees and encroachment into the forest system is a common technique used by farmers to compensate for reduced productivity in food crop systems. This process also facilitates subsequent forest clearance. Almost all of land suitable for agriculture is already occupied and the expansion of planted area is done at the expense of remaining forest areas. In Comoros, many endemic plant and animal species of limited distribution or threatened are associated with the remaining forests. Loss or degradation of natural forests leads directly to loss of habitat for these species. In 1951, the Comorian natural forests covered an area of 31,000 ha in the three islands, about 14% of the total land area. Between 1974 and 1985, the forest was reduced from 19,100 to 12,375 ha (about 7% of the country), an overall reduction of 35%. As a result of unabated deforestation in the subsequent decades, it was observed that, by 2010, primary forest areas had been reduced to only 3000 ha, or 2% of the country. This is according to FAO's forest assessment, which used sampling tracts as an assessment method.<sup>23</sup> A recent study<sup>24</sup> based on remote sensing techniques classifies 9% of the country's land surface under "closed forest" and 27% under "degraded forest". Irrespective of the methods for categorising forest and assessing deforestation levels, it is clear that deforestation and degradation has had—and continues to have—a major impact on Comoros' terrestrial biodiversity.

66. In the marine environment, the exploitation of coastal materials (beach sand and pebbles, gravel and river sediments) is a serious threat to the conservation of the coastal zone and associated species. Loss of beaches due to excessive and illegal collection of sand and sea pebbles increases the vulnerability of coastline to erosion which is compounded by the rising sea level. Although it is forbidden, the removal of sand and coral for construction persists and has resulted in the disappearance of 90% of Ngazidja beaches in 20 years, and possibly as much for Ndzuani's beaches, thus drastically reducing this habitat for associated species and nesting sea turtles.

### ***Invasive Alien Species***

67. Invasive alien species (IAS) are now regarded as the main threat to native biodiversity across the islands of the Indian Ocean, except in the Comoros where large-scale deforestation still prevails. Yet, it constitutes an important threat. IAS out-compete and replace indigenous fauna and flora through predation, elimination of natural regeneration, introduction of diseases, and competition for habitat niches. Sixteen invasive trees and shrubs species were identified as invasive for the Comoros archipelago.<sup>25</sup> They have been introduced as timber trees, fruit trees, spice crops, for erosion control, as ornamentals, and for multiple purposes such as fuel wood, forage and stakes for vanilla. Eight invasive plant species are considered to be highly problematic: *Acacia auriculiformis*, *Acacia mangium*, *Clidemia hirta*, *Lantana camara*, *Litsea glutinosa*, *Psidium cattleianum*, *Spathodea campanulata* and *Syzygium jambos*. All of these species are found at high densities in disturbed areas and in secondary forests, but have also been found in undisturbed habitats. Where land in cultivated sites is abandoned, invasive exotic vegetation (shrubby or herbaceous, but also creepers) generally takes over. In terms of invasive animal species, indigenous birds and reptiles face the most significant impact. In an attempt to control rats brought by early settlers, lesser Indian civets (*Viverricula indica*) were introduced but are instead decimating the endemic snake populations. Ship rats probably affect native birds the most. The hedgehog-like tenrec introduced from Madagascar is thought to damage gecko populations in Comoros. Mongoose, introduced in Ngazidja during the 1960's or 1970's, is a potentially devastating predator for many small birds, mammals and reptiles.<sup>26</sup> Marine ecosystems are also vulnerable to IAS, including those released

<sup>23</sup> FAO National forest assessments - Overview Comoros, <http://www.fao.org/forestry/17847/en/com/>

<sup>24</sup> Hawlitschek et al, 2011.

<sup>25</sup> Vos, P. 2004. Case Studies on the Status of invasive Woody Plant Species in the Western Indian Ocean: 2. The Comoros Archipelago (Union of the Comoros and Mayotte). Forest Health & Biosecurity Working Papers FBS/4-2E. Forestry Department, Food and Agriculture Organization of the United Nations, Rome, Italy.

<sup>26</sup> Gillespie R.G. and D.A. Clague. 2009. Encyclopedia of islands. 1074 p.

illegally in ballast water (e.g. various algae species) from commercial and recreational vessels but this threat has not yet been documented in the Comoros.

### ***Illegal and Overexploitation of natural resources***

68. Natural and secondary forests are threatened by timber removal to meet the local needs for carpentry, construction and energy. Selective logging of endemic precious woods *Weinmannia comorensis*, *Ocotea comorensis*, *Khaya comorensis* also have a tangible impact on their populations. Charcoal is still widely used as domestic fuel and also very intensively in the distillation of ylang-ylang essence. Misunderstanding of the potential of the forest and lack of awareness and concern for the conservation of endangered species are major causes of this lack of management.

69. Expansion of the ylang-ylang culture: Ylang-ylang was introduced in 1909 in the Comoros which quickly became the leading producer of this essential oil which is an essential component of several luxury perfumes. The recent launch of two perfumes with the label Comoros by major international perfume makers renewed interest in the use of the essential oil. Taking advantage of this economic opportunity, the culture of ylang-ylang is currently experiencing significant growth on Mwali Island, especially on the Djando plateau, the Mlédjélé and Hamba-Miringoni region. The need for new plots to meet the growing needs of this culture and the increased need for wood as fuel for distillation amplify the pressure on the natural forest because there is no more available public land for reforestation. Distillation also requires large volumes of water which increases significantly the pressure on water resources that are already highly vulnerable. Concerned about the declining quality of the essential oil, the Givaudan house is supporting producers through the provision of new stills and a reforestation project with 7,000 rapid growth trees per year and setting up about ten nurseries. Such interventions increase the risks of introduction and spread of non-native species in the neighbouring forest.

70. Coastal fishing. Over 4,500 registered fishers use traditional boats to fish in near-shore waters. Most fishing is done by locals for subsistence. However, physical damage to marine habitats has resulted from certain near-shore fishing practices such as dynamite fishing (illegal), the use of *Tephrosia*, fishing on foot at low tide on coral reefs, spear fishing targeting coastal fish and octopus, and inappropriate anchoring that causes considerable damage to coral reefs. Collecting shellfish on the mudflats at low tide (octopus, small fish, shellfish), which is still allowed, cause considerable damage to coral by trampling or breaking corals. The limited range of traditional pirogues increases the risk of accidental capture of coelacanths.

71. Turtle poaching. Exploitation of marine turtle eggs and meat, coupled with excessive sand mining, imposes a severe threat to the population of these species, already endangered worldwide. Exploitation of marine turtles has been prohibited in the Comoros since 1979, and this ban was reinforced through a ministerial decree in 1992 and an order in 2001. Despite this, turtles are still being taken because of their ease of capture and the lack of patrolling on the beaches.

72. Shell exploitation. Certain endangered marine shellfish are threatened by unregulated and unreported exploitation mainly for exportation such as Triton's trumpet (*Charonia tritonis*), one of the rare predators of a coral eating starfish, Green turban (*Turbo marmoratus*), commercially fished as a source of mother of pearl, Red helmet shell (*Cypraea rufa*) and Horned helmet (*Cassis cornuta*) both very popular collector's item as well as *Lambis* sp. The overcollection of *Charonia tritonis* may lead to algae proliferation and coral reef's ecological imbalance. Several tons of these shells are exported to

neighbouring countries (Tanzania, Madagascar, Kenya)<sup>27</sup>. Unregulated and unreported fishing is also an important problem for sea cucumbers which are exploited by Malagasy and Chinese networks.

### ***Pollution***

73. There is no highly polluting industrial or economic activity in the Comoros, with the exception of the risks of accidental oil spills at sea. However domestic waste can be locally significant due to the lack of sewage treatment and of a permanent and systematic waste management system. (ajouter notes du rapport)

74. Transport of hydrocarbons. The risks of pollution by accidental spill of hydrocarbons are not negligible because of the important passage of oil tankers off the coast of Comoros, in the Mozambique Channel. Indeed, the shipping lanes along the East African coast are among the busiest in the world, carrying over 30 percent of the world's crude oil supplies. Over 5,000 tanker voyages per year take place in the sensitive coastal waters of Comoros and Madagascar and along the coast of East Africa. A large oil spill could severely harm the economy and ecological functioning of the Comoros by damaging fishing grounds, and polluting beaches important for turtle nesting and tourism. On a smaller scale, but locally important, tourism and fishing vessels that operate around the Nioumachoi islets in the PMM have been reported to pump out sewage and discard garbage in areas of critical marine habitat.

75. Gas development. The activities of the gas extraction industry are a potential threat for the marine and coastal environment of the Comoros. Gas exploration licenses have been granted in Comorian waters since 2007 and non-destructive explorations began in 2011 by seismic methods. An area of about 40,000 km<sup>2</sup> west of Ngazidja has been surveyed and further explorations are taking place in the western part of the country's EEZ. In the event of positive results, appraisal drilling will be carried out to confirm the presence of gas and eventually the extractive potential. The level of threat to Comoros marine biodiversity differs for each of these stages and its assessment remains hypothetical for phases other than the ongoing seismic exploration until surveys confirm the presence of gas. Impact studies were not required until now, but should be for the following steps. In the short term, threats related to seismic explorations are associated with the presence of the vessel and blasts from equipment commonly used for these studies. While the risk of collision for cetaceans and sea turtles is relatively limited since the speed of the ship during seismic operations is normally constant and moderate, it has been shown that the blasts may have adverse effects on marine life, ranging from avoidance for fish, temporary hearing loss for marine turtles, to larger disturbance for cetaceans including hearing loss, disorientation, traumatic stress and injury, depending on the distance from the source. The sound of seismic waves may impair the cetaceans' acoustic abilities and impede vital activities of communication, care of the young, feeding and mating. It is reported that cetaceans have definitely avoided areas where the sounds were produced thus hindering whale watching activities. In the medium term, the risks related to exploration and appraisal phases involving drilling are linked to the discharge of drilling muds and the risk of incidents, leaks and spills. i) Drilling muds are contaminated with hydrocarbons, heavy metals and other toxic substances. Such pollution affects marine wildlife throughout the food chain as well as ecosystem processes. The rejection of the sludge also increases the turbidity of the water, particularly affecting filter feeding organisms. ii) The risk of leaks and spills are also likely to affect all marine and coastal wildlife. These risks are even greater if the capacities to react to point or major incidents (equipment, procedures, skills) are insufficient.

### ***Climate hazards and Climate change***

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<sup>27</sup> ASCLME 2012. National Marine Ecosystem Diagnostic Analysis. Comoros. Contribution to the Agulhas and Somali Current Large Marine Ecosystem Project (supported by UNDP with GEF grant financing).

76. Due to its geographical position and climatic factors, the Comoros is vulnerable to a multiplicity of natural disasters including tropical storms, floods, rising sea levels, volcanic eruption, earthquakes and landslides. According to national reports, storms, floods and landslides have intensified over the last 10 years, both in frequency and severity and therefore in their impact. The Intergovernmental Panel on Climate Change (IPCC) scenarios for the Indian Ocean predict a rise in air temperature of 1.4°C to 3.7°C by 2100 for the Comoros, a sea level rise of 20 cm over the next fifty years and annual rainfall variation between -2 % and +20 %.<sup>28</sup> Data on long-term changes in average annual temperature and rainfall show that these have been increasing since the 1960s. Vulnerability assessments predict a loss of biodiversity, a reduction in agricultural and fisheries production and increased events of coral bleaching. In 1998, during a major El Niño event, the surface water temperatures were maintained above 30°C for several weeks throughout the Indian Ocean causing the death of over 90% of corals shallow on most reefs of the Indian Ocean. The impact of climate change on the occurrence of El Niño is uncertain to date, but it can significantly increase its magnitude and impact in the years to come. For turtles, the temperature rise may cause an imbalance of the population sex ratio (as sex is determined by egg incubation temperature) and a reduction of the time window favorable to a successful nesting.

77. The devastating impact of the combined effect of disasters on human populations and on environment is illustrated by the eruption of Karthala volcano in 2005 which volcanic ash had reduced the permeability of the soil and its ability to absorb massive and continuous rainfall<sup>29</sup> leading to repeated flooding caused by torrential rains. Not to mention the dramatic impacts on rural populations and their means of production, these natural disasters lead to landslides, mudslides, loss or disruption of fauna and flora habitats and soil erosion, which increase sedimentation and turbidity in coastal waters during the rainy seasons, and smothering of seagrass beds and coral reefs which are key feeding habitats for marine turtles, dugong and several fish species. Climate change is also causing a rise in sea level leading to serious coastal erosion thus disrupting coastal habitats, including mangroves, seagrass beds and turtle nesting beaches. Within a period of 20 years, nearly 30 to 40 m of land was eroded by the sea in several locations of the three islands.

78. While the Comoros have little influence over these factors, the strategy of addressing the impact of other threats will contribute to strengthen the resilience of vulnerable biodiversity elements.

## **LONG-TERM SOLUTION AND BARRIERS TO ACHIEVING THE SOLUTION**

79. The establishment and effective management of a representative system of protected areas composed of both PAs and MPAs, that is representative of the country's biodiversity and that provides a much more significant coverage to unprotected ecosystems and safehaven to threatened species, and which sustainability is secured, is an integral part of Comoros' overall strategy to address the threats and root causes of biodiversity loss. The long-term solution sought by the Government of Comoros will require: (i) the establishment of a PA system with ecological representiveness, management capacity, a clear legal and institutional framework, and adequate financial resources and (ii) successful models for effective PA management and community co-management.

80. **The Long Term Solution** is to establish an expanded and functional system of protected areas in the Union of Comoros, representative of the country's biodiversity endowment and with good prospects for a sustainable future. The effectively managed PA system would be composed of both PAs and MPAs in a PA system that is representative of the country's biodiversity and that provides significant coverage

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<sup>28</sup> ASCONIT Consultants. 2011. Étude des vulnérabilités-adaptations aux Comores. Résumé exécutif. COI - Projet Acclimate 8 p.

<sup>29</sup> UNDP/Union of Comoros. 2012. Comoros flooding 2012 - Early Recovery Plan.

for currently unprotected ecosystems and a safehaven for threatened species. The institutional and financial sustainability of this system will also need to be secured.

81. There are two fundamental barriers to achieving this long-term solution: 1) the PA system faces a number of effectiveness constraints and 2) new PA sites being created are far from operational and there is limited experience with effective PA management in Comoros.

### ***Barrier 1. At the PA system's level***

***The PA system lacks ecological representiveness, management capacity, a clear legal and institutional framework, and financial resources.***

82. Currently, there is only one established PA in Comoros, which is the Moheli Marine Park (PMM) and although its marine area is large, the PMM covers only 2% of the country's land surface. In order for the Comoros' PA system to become more effective in conserving the country's biodiversity endowment, the PA estate must be expanded to include significant forested terrestrial areas. There is currently no strategic or operational plan to guide the development of the PA network to ensure that the national network of protected areas preserves representative samples of the valuable biodiversity of the Comoros and critical ecosystem functions for the benefit of surrounding communities. Local capacity for designing and managing protected areas is minimal and largely inadequate to effectively establish and manage a representative network of protected areas in the country. The government lacks adequate tax revenue and other sources of financing to support the establishment and ongoing management costs of such a protected areas network.

83. Preliminary inventories and PA design activities supported by UNDP and several NGOs remain primarily paper concepts and several initiatives by communities and local groups to establish protected areas in an ad hoc manner may result in a challenging institutional and legal situation. A well-planned and structured PA network will help avoid these challenges but there is no agency with the technical capacity to unify and manage such a network. The current plans for establishing new PAs (see Table 1) will bring under protection large patches of forests of varied quality in all of the three Islands of the Union. It will also protect coastal areas and seascapes, where organised communities are the driving force behind the on-going gazettal. Furthermore, decisions on the establishment of new areas were made a while back and without the support from an ecological gap analysis for the country. The lack of such analysis may foreclose options in the long-term with respect to the sustainability and the resilience of the system. At the same time, several initiatives to create new protected areas or community reserves have been undertaken in recent years but often lack scientific biodiversity foundations, have no official status, lack clear governance and management rules, are not designed for sustainability, are not consistent with the legislative framework and do not fit a rational plan designed to preserve the entire natural heritage of the Comoros. From a PA network perspective, it may be said that the design of the nascent PA estate has built more on opportunity than on scientific advice. For ensuring that the new PAs become effective 'centers of biodiversity conservation', the challenge is to integrate clear scientific criteria<sup>30</sup> with the societal feasibility of setting land- and seascapes aside for conservation. In this light, the support of surrounding communities that will potentially co-manage sites—and/or be impacted by its establishment—is essential, but not always easy to obtain.

84. There is a significant lack of technical capacity in the Comoros for the management of protected areas. This is largely due to the limited options for training and hands on PA management experience as there is only one national protected area. The quality of biodiversity training at the local university is not

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<sup>30</sup> E.g. as in Hawlitschek et al, 2011, though it covers only terrestrial ecosystems.

at international standards and there are very few Comorians who have had international training in biodiversity and PA management.

85. Another key constraint in the establishment of new PAs is the fact that the legal framework governing protected areas is underdeveloped. The key piece of legislation for PAs is the generic Framework Law on the Environment (FLE - Law No. 94/018 AF of 22 June 1994 amended by Law No. 95-007 of 19 June 1995), which regulates a range of issues pertaining to environmental management. The chapter 5.5 on PAs counts is four articles only and is clearly insufficient in terms of providing legal guidance on matters such land ownership of PAs, or for defining PA categories besides ‘national park’ and ‘natural reserve’ (the only two foreseen in the Law). It is notable that these national categories are not explicitly linked to IUCN PA categories<sup>31</sup>, nor to international categories and designations such as Important Bird Areas (IBAs), Ramsar sites or Biosphere Reserves—while these exist in Comoros or have been proposed. Also, the Framework Law on Environment does not define roles and responsibilities for PA management under community co-management models. Nor does it make provisions for securing public budgetary allocations to finance the functioning of PAs. In addition, the FLE established the legislative framework for the creation of the single protected area legally established in the Comoros. However, new laws on forest management and the fisheries Code developed respectively in 2012 and 2007 defined application areas related to PAs that overlap to some extent with the field of application of Chapter 5-5 of FLE relating to PAs and define different administrative authorities. A revised legal framework for PA management is essential to the planned PA expansion.

86. An additional important barrier to establishing PAs and MPAs in Comoros and to averting threats from PA adjacent areas is the lack of clarity on land tenure and on seascape use rights. These elements are coupled with the incipient enforcement of land use regulations. In land areas, tenure insecurity remains a key threat driver that fuels deforestation. The overlapping systems of law, customary, religious and civil norms that regulate land tenure in Comoros are not conducive to solving potential land disputes and conflict. In seascapes that are bound to become MPAs, the fisheries are currently open access resources. Fishing activities are regulated, but enforcement is weak. The decrees that will create the MPAs will certainly impose regulations on resource access and use, while the management plans will indicate the means for enforcement. Yet, changing ancient practices and exerting effective enforcement will face significant challenges.

87. At the institutional level, the management capacity for the Comoros’ PA system has multiple shortfalls. The question of leadership as well as roles and responsibilities for the establishment and management of protected areas are not clear within the Government of the Union and between the Union and the Governorates. On the one hand, the FLE ascribes the mandate for creating PAs to the Ministry in charge of the environment at the level of the Union while the Code on Fisheries defines a shared authority for marine protected areas between administrations in charge of environment and fisheries. On the other hand, the boundary between the mandate at the Union level and the mandate of the regional environment services in the autonomous islands is not clear. The FLE was written during a period when the political and institutional structure of the country was totally different and it is not possible to adapt the mandates of the regional services of the DGEF to the Commissioner in charge of the environment in the Autonomous Islands. DGEF, which is currently responsible for PAs at the central level under MPEEIH, is in charge of planning and coordinating inventory studies, monitoring of biodiversity and the establishment of databases. Yet, it does not maintain an information system that would allow it to monitor ecosystems and resources based on a clear set of indicators. A few studies were conducted, but only in the context of projects supported by external partners. The limited spatial and temporal scope of data on the status of resources is not conducive to making timely informed decisions to effectively reduce the

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<sup>31</sup> E.g. while terrestrial national parks (IUNC Category II) would typically be no-consumption areas, ‘marine parks’ would tend to fall under IUCN Category V (Protected Landscape/Seascape: managed mainly for landscape/seascape protection and recreation) and sometimes VI (Managed Resource Protected Area: managed mainly for the sustainable use of natural ecosystems). Comoros’ Framework Law on the Environment makes no distinction between terrestrial and marine national parks in this respect.

pressure on resources. Technical capacity within DGEF is limited and relies mostly on technical teams that are linked to projects or volunteers, contractors and interns.

88. Finally, in the past few years, support to PAs has been too reliant on donor funding. Beyond salaries, there is no formal operational budget provided by the state on a regular basis —although the government does support initiatives with a few symbolic inputs such as La Maison du Parc Marin de Mohéli. On other islands, the government contributes with in-kind support by providing office space and electricity needed to house biodiversity-related projects and the technical teams working on sites. Still, underfunding of PAs and insignificant revenue collection from them is a key barrier. On a positive note, an Environment Trust Fund was recently created, but remains to be fully capitalised.

### ***Box 2. Knowledge management barriers in Comoros PA System***

*Information systems.* DGEF, which is currently responsible for PAs at the central level under MPEEIH, is responsible for planning and coordinating biodiversity inventory and monitoring studies, and for the creation of databases. A division of Information and data collection is provided in the new organigram, but the latter has not yet been validated and positions have not been filled. Directly under the MPEEIH, a Centre for Information and Assistance in Decision-making was created<sup>32</sup> to take part in the inventory of natural and cultural heritage of the Comoros, support projects and secure the knowledge developed through it. The Centre includes a GIS/EIS, a document information system, a metadata base as well as centers for information exchange (CHM-UNEP) and has to provide all stages of information processing: collection, storage, analysis, updating and dissemination of data. However, the centre is heavily used and the system's design is not appropriate to monitor systematically the evolution of ecosystems and resources on the basis of indicators.

*Data collection, access and dissemination.* Coral reefs, sea turtles of the PMM and Livingstone fruit bats are the only resources that have been monitored over several years. Yet, databases from this huge investment are not secured in a permanent structure and are not easily valued. Continuous data collection is dependent on external financing (reef monitoring) or the voluntary involvement of a national NGO (Action Comores for monitoring of bats). In the absence of a policy for securing data, valuable information gained through previous environmental projects has been lost. At the same time, existing databases are hardly valued because potential users are not aware of their content or how to access it, other than personally soliciting the persons in charge.

With the exception of these species groups, most biodiversity studies are not management oriented. Much of biodiversity inventories of the Comoros have been conducted since 1981 by scientists at the Royal Museum for Central Africa in Tervuren (Belgium) who have published 85 scientific papers and contributions including a monograph<sup>33</sup> on terrestrial wildlife. A list of papers is presented in a website<sup>34</sup>, yet these are not accessible. Inventories of birds, reptiles and orchids are comprehensive and indications on species occurrence on each island provide a baseline on their distribution and population status. However, except for indications of relative abundance for a few birding sites, the usefulness of these species lists to plan conservation measures remains limited.

Environmental databases have recently multiplied in Comoros according to the needs of institutions and opportunities provided by projects which finance their establishment. Lack of communication among the technicians of these databases and inadequate dissemination of their content may lead to redundancies and scattering of resources, thus reducing the efficiency of the knowledge management system as a whole. Also, the data collected in the Comoros are not adequately disseminated through the global information systems. For example, the Global system of Biodiversity Information Facility (GBIF) includes 180 sets of occurrence data for Comoros provided by 18 countries but no contribution is from the Comoros.

### ***Barrier 2. At site level***

***Lack of successful models for PA management and community co-management limit PA management effectiveness.***

<sup>32</sup> Arrêté No 07/13 MAPE/CAB On the Creation of the Department of Geographic Information System (GIS)

<sup>33</sup> "La faune terrestre de l'archipel des Comores" published in 2004

<sup>34</sup> <http://cspottiswoode.free.fr/Comores/Index.htm>

89. Because the Comoros has had historically only one official protected area – PMM – which has experienced extended periods of inadequate budgets, there are no models of effective well-managed protected areas in the Comoros. This lack of successful models limits the ability of the Comoros to train a new cadre of PA professionals, limits the development of effective community co-management models, and limits the interest of the government in supporting PA creation and financing.

90. Inadequate information exists for the finalization of proposed limits and the establishment of general management plans for the proposed new PAs. Of the proposed PAs, only 3 sites have adequate cartography indicating key features and the proposed boundaries of the PAs. These are: Karthala forest (including 2 Community Reserves, Hantsogoma and Ngubadju), Mwali's Rainforest and the Massif of Mt Ntringui. Biodiversity and socio-economic surveys remain to be carried out for Ndroudé Islet, Bimbini Peninsula / Ilôt de la Selle and the Coelacanth Zone / Baie de Dauphins.

91. Most of the proposed PAs do not have park management infrastructure, PA staff, management plans, or budgets. Currently, the level of PA management capacity on site is minimal except for at PMM where there is a current staff and financing being provided by AFD. All other PAs lack full time staff and PA management activities. Some initial planning work has been conducted by Comoros with the support of UNDP/GEF at a range of sites. This initial work has yet to be successfully implemented due to lack of funds, weak local capacity, and an unclear institutional and legal environment.

92. Co-management, which seems to be system of choice for most new PAs and MPAs in the country, can be complicated and risky. For the PAs to be effectively managed, a series of steps need to be accomplished at each site. These include physical delimitation studies, negotiations with the local communities on boundaries and use and access rules, completion of key biodiversity inventories, engagement and training of PA staff, establishment of PA infrastructure (buildings, boats, trails, signalization, etc.), preparation of management plans, budgets, and more. The technical knowledge of how to accomplish these steps is not easily available in the Comoros but could possibly be acquired in Madagascar or elsewhere.

93. Local communities that currently use natural resources in proposed PAs for subsistence and commercial purposes will need to be integrated into any new resource conservation schemes. In many areas people have few income generating activities, some of which can be negatively affected by PA/MPA establishment. The new PA management teams will need to identify opportunities for positive collaboration with these communities and develop effective conflict resolution mechanisms.

94. In many PAs and MPAs throughout the world, tourism offers some of the best options for generating income for conservation. Tourism and eco-tourism in particular, has a reasonable potential in Comoros. There were even a few success stories in the 1990's, but political instability the past few years and disinvestments from the industry made the country a less attractive tourism destination. Currently, only 3000 foreign tourists visit Comoros every year. While there is a potential for this number to increase, the challenge is to better understand and exploit the existing potential with a pondered and risk-averse investment and marketing strategy.

## **STAKEHOLDER ANALYSIS**

95. During the project preparation stage, a stakeholder analysis was undertaken in order to identify key stakeholders and assess their roles and responsibilities in the context of the proposed project. The table below describes the major categories of stakeholders identified, the individual stakeholder

institutions/organisations within each of these categories, and a brief summary of their specific roles and responsibilities in supporting or facilitating the implementation of project activities.

96. The project will be executed by the General Directorate of Environment and Forests (DGEF) of the Ministry of Production, Energy, Environment, Industry and Handicraft (MPEEIH). Their role is to function as the national entity designated by UNDP to assume responsibility for delivering on the project objective and outcomes, and the entity accountable to UNDP for the use of funds. During implementation, a number of other stakeholders will be involved in the project. These key stakeholders and their roles are:

**Table 2: Stakeholder Participation in Project Implementation**

Stakeholders	Anticipated Roles and Responsibilities in Project Implementation
<b>Village communities concerned by the creation of PAs</b>	
<p>Main users of natural resources in the PA sites including: Farmers, loggers, charbonniers, hunters, fishermen, women-users (sand and wood collectors, tephrosia fishers, river water), collectors and sellers of marine biodiversity products (incl. shells, black coral), carpenters, craftsmen</p>	<ul style="list-style-type: none"> <li>▪ Key stakeholders and beneficiaries;</li> <li>▪ Permanent members (through representatives) of the project teams during field surveys and missions;</li> <li>▪ They will participate actively in the designation of communities representatives on the collaborative management committees (act. 2.1.6) and will be represented in the working sessions and negotiations for the definition of collaborative management agreements on the use of natural resources and surveillance in PAs (act.2.1.6);</li> <li>▪ Information and awareness activities will be conducted with the local communities living by protected areas for their participation in (act. 1.3.2):               <ul style="list-style-type: none"> <li>- the signing of voluntary agreements on the establishment of PAs,</li> <li>- their participation in the biological, socio-economic studies and land for the final delimitation of the PA,</li> <li>- their participation in negotiations on regulations (activities and allowed uses) in different zones of the PA;</li> </ul> </li> <li>▪ Local workers will be hired primarily for development and restoration works in and around PAs (act. 2.1.4)</li> <li>▪ Local communities will be invited to participate in the identification and development of income generating activities (output 2.4) including profitable ecotourism activities to the benefit of local communities (output 2.3) and meetings to exchange experiences (local and regional);</li> <li>▪ Local communities/ Resource users will be invited to participate in the participatory identification and evaluation of threats to PAs and assessments of the effectiveness of PA management during project preparation, at mid-term and end of project, and will participate in monitoring and participatory research programs on biodiversity and in the assessment of the impact of the project interventions.</li> </ul>
<p><b>Community opinion leaders:</b> Notables, religious leaders (Iman<sup>35</sup>, Hatubes<sup>36</sup>), leaders of women's associations</p>	<ul style="list-style-type: none"> <li>▪ The religious and traditional leaders have a very high legitimacy. Highly respected, they are listened to by the people and can act as a conduit of information to even the most remote villages. They will be invited to take part to local briefings on the process of establishment of the PA, to the negotiations on the use of terrestrial and marine resources in order to define the zoning (act. 1.3.2), to elaborate the management plan of the PAs (act. 2.1.3), and to formalize important events and festivities associated with PAs;</li> <li>▪ Religious leaders and notables will be invited to contribute to the identification of mechanisms for conflict management (output 2.2), advise and intervene in the resolution of local resource conflicts related to protected areas and resources and, if necessary, in the application of the regulations.</li> </ul>
<p><b>Community organizations:</b> Village committees for sustainable development in the sites of the Karthala (16), Ntringui (6) and Mwali's rainforest (14); Village steering committees of the Fund to Support Community Development (FADC); Water committee unions in Mwali and Ndzuani</p>	<p>Village committees will be invited to take part</p> <ul style="list-style-type: none"> <li>▪ to the process for establishing PAs and collaborative management committees (act. 1.3.2 and 2.1.6),</li> <li>▪ to the negotiations on the use of terrestrial and marine resources in order to define the zoning (act. 1.3.2),</li> <li>▪ to elaborate the management plan of the PA (act. 2.1.3),</li> <li>▪ and mobilization for community development work in PAs (reforestation, protection of water and soil resources, beach cleanups, etc.) (act. 2.1.4)</li> </ul>

<sup>35</sup> Religious leader who leads the congregational prayer

<sup>36</sup> Religious leader who does the preaching on religious holidays

Stakeholders	Anticipated Roles and Responsibilities in Project Implementation
<b>Local authorities</b>	
<p><b>Mayors</b> of the concerned communes (5 in Mwali<sup>37</sup>; 12 in Ngazidja<sup>38</sup>; 5 in Ndzuani<sup>39</sup>)</p> <p><b>Towns and villages councils</b> concerned by the PAs (17 in Mwali, 29 in Ngazidja and more than 6 in Ndzuani)</p>	<ul style="list-style-type: none"> <li>▪ Local elected representatives will be invited to receive training on collaborative management of protected areas (output 1.2), and to get involved in the negotiations for: <ul style="list-style-type: none"> <li>▪ the delineation and zoning of protected areas (act. 1.3.2),</li> <li>▪ the definition and enforcement of regulations concerning PAs and their resources, use of resources and sharing of resulting benefits (act. 2.1.3),</li> <li>▪ the clarification of rights to use land and resources (act. 2.2.1),</li> <li>▪ and identification of conflict management mechanisms (act. 2.2.1)</li> </ul> </li> <li>▪ They will participate in planning and implementing interventions at the local level, including the selection of intervention sites at the local and community levels (act.2.1.3);</li> <li>▪ They will contribute to conflict management for issues regarding the implementation of the project, especially for potential conflicts on resource and land/sea use rights (output 2.2);</li> <li>▪ Local elected representatives will support the land tenure surveys and exercise leadership in the negotiation leading to the establishment of long term contracts (act. 2.2.2)</li> </ul>
<b>Civil society</b>	
<b>Environmental and local development associations and NGOs</b>	
<p>In <b>Ngazidja</b> : ULANGA associations<sup>40</sup>, AIDE<sup>41</sup>, Comoflora, Intervention Group for Sustainable Development, Association for the conservation of the Gombessa, Friends of Nyioubadjou, Friends of the Karthala, Junior International Chamber, and others<sup>42</sup></p> <p>In <b>Mwali</b>: ULANGA associations<sup>43</sup>, Innovation and Research Association for Development, House of ecotourism, Moidjio, and others<sup>44</sup></p> <p>In <b>Ndzuani</b> : Action Comores Ndzuani, Organisation for the Integrated Management of Ndzuani's Natural Resources, Dahari, and others<sup>45</sup></p>	<ul style="list-style-type: none"> <li>▪ Involvement as eco-guides in PA sites (act. 2.4.2)</li> <li>▪ Invited to get involved in information and awareness actions on PA collaborative management and mobilization for community development work in PAs (reforestation, protection of water and soil resources, beach cleanups, etc.) (act. 2.1.4)</li> <li>▪ Actors for monitoring and participatory research on biodiversity (ie monitoring targets conservation of PAs, including roussettes, turtles, coral reefs) (act. 2.1.7),</li> <li>▪ Participation in the evaluation of threats to PAs, and of the effectiveness of PA management at start-up, mid-term and end of project and for the evaluation of project impacts in the sites of PAs (act. 2.1.7);</li> <li>▪ Contribution to community awareness and mobilization for all project interventions (act. 1.2.3);</li> <li>▪ Environmental NGOs working in the Comoros may contribute to capacity building for PA management actors and share best practices on biodiversity surveys, long term monitoring and conservation activities, such as AIDE which could provide training on coral reef monitoring, Moidjio/ Centre for Research, Conservation and Development which could provide training on the monitoring of whales, dolphins, marine turtles, and seagrass meadows, and Dahari which could contribute to capacity development in ecological monitoring and to enhance agricultural practices in buffer zones (act. 1.2.2).</li> </ul>
<b>Professional associations and unions (national, regional)</b>	
<p>Comorian Tourism Association, Tourist Guides Association, Chambers of Commerce, Industry and Agriculture in Ndzuani, Mwali and Njazidja, Comorian Private Sector Federation, Women and Development National Network, National Union of Fishermen</p>	<ul style="list-style-type: none"> <li>▪ Invitation to participate in the promotion of tourism in relation to PAs (output 2.3), the development of economic activities and valorisation of resources of the PA sites for the benefit of communities living around PAs (output 2.4).</li> </ul>

<sup>37</sup> Mwali communes: Fomboni, Moibassa, Moibao, M'ledjele and Djando

<sup>38</sup> Ngazidja communes: Bambao Yadjou, Bambao Ya Hari, Tsinimoipanga, Ngouengoe, Nioumagama, Itsahidi, Domba, Oichili Yadjou, Dimani, Mboinkou, Sembenoi Lac salé

<sup>39</sup> Ndzuani: Bandaani ya Chironkamba, Bambo Mtrouni, Sima, Vouani, Moya

<sup>40</sup> Ulanga, Wegni Ulanga Mvouni, Ulanga Nkourani

<sup>41</sup> Association d'Intervention pour le Développement et l'Environnement

<sup>42</sup> And others : Group Dima djema, Wutsungui, Mboudé Amboini Association for progress, Mkazi Committee for Development, Hankoiriho Association (Tsinimoipanga),

<sup>43</sup> ULANGA associations in the villages of Ndrondroni, Wanani, Nkangani, Hamavouna, Mlambanda, Hoani, Mouzdalifa, Coopérant, Mbatsé, Mdanvoulé, Hamba, and Baracani

<sup>44</sup> And others: Mouvement pour le Développement Socio Economique et Culturel de Ouallah I Miréréni, Association Pour le Développement Economique et SocioCulturel de Ouallah II, Association des Amoureux de la Nature de Ouallah2, Association pour le Développement de Nioumachoi, Association pour le Développement Socio-économique d'Itsamia, Association pour le Développement de Miringoni

<sup>45</sup> And others: , Association pour le Partenariat de l'Environnement et le développement, Association pour le Développement Durable et l'Environnement, Comores verte, Ulanga, Malezi, et Mayedrelewo/ UMAMA, Offensive pour l'action sociale/ OPAS, OBEN /Objectif environnement, Comité de site Bahani, SOS femme pour le développement, Sima Women Association, Site committee of Koni plateau, Cultural Association for sustainable development and Farmers Association (Dindri), Ulanga and Development Association of Lingoni, Hafadhui Association (Tsembehou)

Stakeholders	Anticipated Roles and Responsibilities in Project Implementation
<b>Media</b>	
<p><b>Local and national radio and television</b> broadcasting in the areas of project intervention, including electronic journals</p> <p><b>Print media:</b> Ulanga Ngazidja, Al-Watwan, the Gazette, Archipel, La Tribune Journal, Mavouna Bulletin (CEFADER), Albilade, The Observateur</p>	<ul style="list-style-type: none"> <li>▪ Invitation to contribute to awareness and information campaigns on major issues of the project, ie the importance of biodiversity and ecosystem services for the livelihoods of local populations of PAs and the entire population of each island, on the responsibility of ordinary citizens in protecting the environment (act. 1.2.3);</li> <li>▪ Dissemination of the main events of the project and following the communication plan: launch of the project, formal approval of texts for the creation of PAs, celebrations related to PAs and Comoros biodiversity (eg environment Day, the day of the Turtle, etc.), information on the project key results, invitations to tender and job opportunities, public invitation to participate in large community chores (eg. cleaning beaches and coasts, reforestation of watersheds, etc.) related to biodiversity and the environment, broadcasting of environmental programs, chronicles and thematic articles (act. 1.2.3).</li> </ul>
<b>Academic and scientific institutions</b>	
<p><b>University of the Comoros (UC):</b> Faculty of Sciences (Master of Conservation of Biodiversity, National Herbarium, Animal Biology Laboratory, University Institution of Technology)</p> <p><b>National Centre for Documentation and Scientific Research (CNDRS):</b> Research Division, National Oceanographic Data and information Centre of the Comoros</p> <p>INRAPE (Department for expertise, support, advice and training, plant pathology, entomology, spices, and in vitro plant production laboratories); GIS Department, National Bureau of Geology / <b>MPEEIH</b></p>	<ul style="list-style-type: none"> <li>▪ UC will be represented in the Project Steering Committee.</li> <li>▪ UC will contribute to capacity building for all actors involved in the management of the PA system through the development of training modules/programs on biodiversity conservation and adaptive management of PAs and integration in the academic curriculum (act. 1.2.2);</li> <li>▪ UC and other scientific institutions will contribute to the work related to the creation and management of protected areas (ie delimitation, zoning, choice of conservation targets, management plans – act. 1.3.2), to development and implementation of the long-term ecological monitoring in PAs (act. 2.1.7), to the evaluation of the effectiveness of management of PAs and to the assessment of the impact of project interventions;</li> <li>▪ UC and other scientific institutions are major actors in the identification of needs for the establishment of a national database on biodiversity (act. 1.2.1), identification of priority needs regarding knowledge for the conservation and management of biodiversity, the establishment of a national documentary funds and a platform for sharing knowledge related to biodiversity (act. 1.2.1) and in the development and execution of standardized protocols for the long term monitoring of PA target resources and of participatory research programs (act. 2.1.7);</li> <li>▪ The project will support the development of mutually beneficial (win-win) partnership agreements between UC and the entity dedicated to the PA system to facilitate access to protected areas for students and researchers in exchange for their regular contribution to research programs and resource monitoring.</li> </ul>
<b>Public sector</b>	
<b>Institutions of the Government of the Union</b>	
<p><b>General Directorate of Environment and Forests (GDEF) / MPEEIH</b></p>	<ul style="list-style-type: none"> <li>▪ GDEF has the national mandate over natural resources conservation and sustainable management and for the overall coordination and management of the PA system.</li> <li>▪ As the implementing agency of the project, GDEF will be accountable for the project results, in collaboration with counterparts at the island level, will designate a National Project Director among its members and chair the Steering Committee, and will allocate appropriate work premises for the project management team, including water and electricity.</li> <li>▪ The GDEF will be kept informed of the activities and progress of the project on a continuous basis</li> <li>▪ The GDEF will take leadership for institutional and legislative reforms related to PA management and the creation of the entity dedicated to managing the PA system (output 1.1);</li> <li>▪ Contribution to project monitoring and evaluation, responsible for technical and financial reporting to UNDP and for integrating lessons learned in the knowledge sharing networks.</li> </ul>
<p>Department of Planning, Monitoring and Evaluation / <b>MPEEIH</b></p>	<ul style="list-style-type: none"> <li>▪ Responsible for reviewing the project technical, progress and evaluation reports;</li> <li>▪ Participation to the elaboration and implementation of the monitoring and evaluation plan, including a contribution to the preparation of the annual Project Implementation Report.</li> </ul>
<p>GIS Decision Support Service / <b>MPEEIH</b></p>	<ul style="list-style-type: none"> <li>▪ Participation in the project by sharing lessons learned on the development and management of a decision support system, and by providing data and technical inputs to the new GIS for the PA System (act. 1.2.1)</li> </ul>
<p>National Directorate of Tourism, National Tourist Office / <b>Ministry of Posts, Telecommunications, Promotion of New Technologies of Information and</b></p>	<ul style="list-style-type: none"> <li>▪ Members of the Project Steering Committee and of the Island Technical Units;</li> <li>▪ Contribution to planning and implementing eco-tourism activities in PAs/MPAs (output 2.3).</li> </ul>

Stakeholders	Anticipated Roles and Responsibilities in Project Implementation
<b>Communication, in charge of Transport and Tourism</b>	
<b>National Coast Guard</b>	<ul style="list-style-type: none"> <li>▪ The Coast Guard will contribute to the surveillance of boat activities in MPAs and to enforcement of regulations on resource use in MPAs through its on-going activities to control illegal fishing (act. 2.1.5);</li> <li>▪ The Coast Guard will be invited to receive training on collaborative management of protected areas (act. 1.2.2).</li> </ul>
National Gendarmerie, National Police, General Directorate of Civil Safety / <b>Ministry of the Interior</b>	<ul style="list-style-type: none"> <li>▪ Participation to surveillance of protected areas and enforcement of laws and regulations (act. 2.1.5).</li> </ul>
National Direction for Agriculture and Animal Husbandry/ <b>MPEEIH</b> Urban planning and land management Directorate / <b>Ministry for Land Management, Infrastructures, Housing and Urban Planning</b> National Directorate of Budget and Financial Controls / <b>Ministry of Finance, Economy, Budget, Investment and Foreign Trade, in charge of privatization</b> Court of First Instance, Court of Appeal / <b>Ministry of Justice, Civil Service, Administrative Reform, Human Rights and Islamic Affairs</b>	<ul style="list-style-type: none"> <li>▪ Departments in charge of tourism, fisheries, agriculture will be members of the project steering committee</li> <li>▪ The Departments and Services concerned with the mobilization of in-kind contributions as part of the co-financing of the project will be duly informed of the project activities and progress on a continuous basis, namely for specific project outputs such as the development of a new legislative framework (act. 1.1.1), the establishment of an institution in charge of the PA system (act. 1.1.2), tourism development (act. 2.3.1), livelihood activities for communities living around PAs (act. 2.4.1), and governance for resource use (act. 2.2.1).</li> </ul>
<b>Legislative Institutions</b> / Members of the National Assembly	<ul style="list-style-type: none"> <li>▪ Members of the National Assembly will revise the current legislation on natural resources and to enact legislation on protected areas (act. 1.1.1);</li> <li>▪ They will be responsible for the adoption of taxes and budget allocated to protected areas (output 1.4);</li> <li>▪ They will participate in the establishment and operationalization of sustainable funding mechanism of the PAs system (output 1.4).</li> </ul>
<b>Focal Points of the Multilateral Environmental Agreements:</b> National Focal Points (NFP) for the conventions related to Biodiversity, Climate Change, to Combat Land Degradation, Ramsar, CITES, and the Nagoya Protocol	<ul style="list-style-type: none"> <li>▪ NFP will contribute to share knowledge on biodiversity of PAs on the website and focus the efforts of implementation of MEAs in areas of PAs (act. 1.2.1)</li> <li>▪ NFP will be invited to participate in the development of law and policy for the system of PAs (act. 1.1.1).</li> </ul>
<b>Autonomous Island Institutions</b>	
<b>Commissariats:</b> Commissioner in charge of Production, Environment, Fisheries, and Handicrafts, of <b>Mwali</b> Island; Commissioner in charge of the Promotion of Agriculture, Fisheries, Livestock, Environment, Handicrafts and Relations with Development NGOs of <b>Ndzuani</b> Island; Commissioner in charge of Environment, Urban Planning, Sustainable Development and Energy of <b>Ngazidja</b> Island, and Commissioners in charge of Tourism and of Land Use Planning on the 3 islands	<ul style="list-style-type: none"> <li>▪ Island-level authorities will be kept informed of the progress of the project on a continuous basis.</li> <li>▪ Island-level authorities in charge of environment, land-use planning and tourism will be invited to participate and if needed to intervene, in the <u>validation</u> of PA delineation and zoning (act. 1.3.2), regulations regarding resource and land/sea use rights (act. 2.2.2), in the development of PA management plans (act. 2.1.3) to ensure the compliance and integration of these plans with local and island-level land/sea and resource use planning.</li> </ul>
<u>Island Directorates in charge of Environment:</u> Directorate of Environment and Forests of <b>Mwali</b> , Directorate of Environment of <b>Ndzuani</b> , Regional Directorate of Environment and Forests of <b>Ngazidja</b>	<ul style="list-style-type: none"> <li>▪ Island Directorates in charge of Environment will be kept informed of the progress of the project on a continuous basis.</li> <li>▪ Island Directorates are members of the Project Steering Committee, of the Island Technical Units, and contact between the Island Technical Units and the authorities of the Autonomous Islands;</li> <li>▪ Island Directorates are responsible to mobilize country's in-kind contributions at their level;</li> <li>▪ Island environmental directorates will be invited to receive training on collaborative management of protected areas (output 1.2), and to get involved in the negotiations for: <ul style="list-style-type: none"> <li>▪ the delineation and zoning of protected areas (act. 1.3.2),</li> <li>▪ the definition and enforcement of regulations concerning PAs and their resources, use of resources and sharing of resulting benefits (act. 2.1.3),</li> </ul> </li> </ul>

Stakeholders	Anticipated Roles and Responsibilities in Project Implementation
	<ul style="list-style-type: none"> <li>▪ the clarification of rights to use land and resources (act. 2.2.1),</li> <li>▪ and identification of conflict management mechanisms (act. 2.2.1)</li> <li>▪ They will participate in planning and implementing interventions at the local level, including the selection of intervention sites at the local and community levels (act.2.1.3)</li> </ul>
Forestry and environmental brigades of the Governorates of the autonomous Islands	<ul style="list-style-type: none"> <li>▪ Participation to surveillance of protected areas and enforcement of laws and regulations. (act. 2.1.5)</li> </ul>
<b>Prefectures</b> (3 in Mwali <sup>46</sup> ; 7 in Ngazidja <sup>47</sup> ; 3 in Ndzuani <sup>48</sup> and <u>Gendarmerie Brigades and Police Stations</u> in the prefectures	<ul style="list-style-type: none"> <li>▪ Participation to surveillance of protected areas and enforcement of laws and regulations. (act. 2.1.5)</li> </ul>
<b>Rural Centres for Economic Development</b> (Mibani, Mledjele, Fomboni in Mwali, Bamba and Bougweni in Ndzuani, Simboussa, Serehini, Sembenoi in Ngazidja)	<ul style="list-style-type: none"> <li>▪ The participation of RCEDs in the validation of the delineation and zoning of PAs as well as associated regulations and management plan will ensure the compliance and integration of these plans with island-level land and resource use planning.(act. 1.3.2, act. 2.1.3)</li> <li>▪ RCEDs will contribute to awareness campaigns on reforestation in their sector and provide technical support to help farmers to optimize land development in accordance with the specifications on the long term tenure agreements. (act. 2.1.4)</li> <li>▪ In accordance with their mandate, RCEDs will work in close collaboration with each PA to ensure compliance with laws and regulations relating to environmental management and natural resources, with the collaboration, when necessary, of the police force and gendarmerie (act. 2.1.5)</li> </ul>
<b>National private sector:</b> Private enterprises and investors	
EDA (Electricity of Anjouan / producer of hydroelectricity) MAMWE (Madji Na Mwedje Ya Comores) Comoros water and electricity	<ul style="list-style-type: none"> <li>▪ EDA and MAMWE will contribute to planning and support reforestation activities within watersheds to reduce sedimentation of hydroelectric installations and maintain streamflow (act. 2.1.4).</li> </ul>
Tour operators / tourism agencies Hotels and bungalows in and around PA sites Air and maritime transport companies Quarry enterprises in the PA sites (Cœlacanth zone)	<ul style="list-style-type: none"> <li>▪ Specific information and awareness activities (act. 1.2.3) will target companies and private investors operating in the sites of protected areas or likely to settle there, in order to improve their services, mitigate the impacts of their activities on PAs and resources and develop PA friendly activities</li> <li>▪ Tour operators will be involved in the consultations leading to the elaboration of a pragmatic strategy for the development of ecotourism related to PAs and will participate to its implementation (act.2.3.2)</li> </ul>
Traders of biodiversity products: Exporters of biodiversity products (sea cucumbers, shrimp, seashells, black coral, etc.).	<ul style="list-style-type: none"> <li>▪ In the context of socio-economic surveys (act. 1.3.2) and for the development alternative activities (output 2.4), exporters will be demanded to provide quantitative and qualitative data on biodiversity products taken from each PA site and the economic value.</li> </ul>

## BASELINE ANALYSIS

97. With only 2% primary forest left and the remaining forested areas in Comoros have witnessed varied degrees of impact by human activity. As such new clearings aimed at expanding the cultivated area have reached a critical limit. There is too little forest available that can provide fertile agricultural soil through slash-and-burn land conversion. This means that agricultural intensification is an imperative, as are efforts to stem land degradation in terrestrial ecosystems. On the other hand, there is an urgent need to address direct threats to these highly threatened ecosystems by providing protection to them through a PA approach – and not just focusing on primary forest, but on a plethora of terrestrial and marine habitats that have value for conservation.

98. The existing framework for protected areas in the Comoros is inadequate as regards policy, and institutional and legislative aspects. The national network of protected areas must ensure the preservation of a representative sample of the value elements of the biodiversity of the Comoros while preserve

<sup>46</sup> Mwali prefectures : Fomboni, Nioumachioi and Djando

<sup>47</sup> Ngazidja: Moroni-Bambao, Hambou, Mbadini Ouest, Mbadjini-Est, Oichili Dumani, Hamahamet-Mboikou, Mitsaouli-Mboude

<sup>48</sup> Ndzuani: Mutsamudu, Ouani and Sima

ecosystem functions for the benefit of neighboring communities. Yet several initiatives to create protected areas have been undertaken in recent years but are not harmonized, are not consistent with the legislative framework and are not integrated to a rational plan designed to preserve all natural heritage of the Comoros. In fact there is no strategic plan for the establishment of a nationwide network of protected areas that meets objectives of representativity of the biodiversity of Comoros and such objectives are not defined either. The question of leadership, roles and responsibilities for the establishment and management of protected areas is not clear within the Government of the Union and between the Union and the Islands Governorates. In addition, various laws concerning the environment, forest and fisheries management assign responsibility for marine and terrestrial protected areas differently. The Comoros is in urgent need of a nation wide system to support the Government's efforts in protecting its natural resources. This is in general the 'point of departure' for this project and the 'baseline situation' (or business-as-usual scenario) for the current intervention.

99. **The Baseline Project**, contributing towards the long-term solution discussed further up which underpinning the GEF investment, comprises both national investments and commitments and donor financed interventions.

100. **Overview of Financial baseline investments:** Currently, the budget that is directly dedicated to the management of PAs by the Directorate General for the Environment (Union and Island levels) is somewhat limited. It includes the salaries of senior staff in the Directorate, of 6-8 technical staff in the Ministry's central office on Ngazidja, plus 2-3 staff on each of the islands. Office space is provided, but the current operational budget for the Directorate, including for the management of Moheli Marine Park, is limited to \$100-150K per annum. With the prospects of enlarging the PA estate, there is a widespread recognition that state allocations and other sources of revenue will need to gradually increase, possibly reaching a total of \$700-800K per year in the next 5 years (and starting in 2015/6). In connection with PPG studies however, various forms of government investments that relate in different ways to PA management were also assessed. As a result, a broader budgetary allocation to PAs could be consolidated as both current and in the pipeline. Those include investments and operational expenditure that co-support the management of both the existing PA and the ones being created. They also include government led activities aimed at strengthening sustainable resource use both inside and in areas surrounding PAs and at fostering tourism. All government levels are involved and the overall investment in the next 4-5 years was thereby estimated to represent some \$9.4M for the duration of the project. This amount is also the amount being committed as co-financing from the various government agencies across the Union and as shown in the table below.

*Table 3: Government Financial Baseline Investments*

Government entity	Description	Amount (\$ M)
MPEEIH, Direction Générale de l'Environnement et Forêts	Government Budget	2.00
MPEEIH, Direction Générale de la Pêche	Government Budget	0.82
MPEEIH, Centre National de Contrôle et Surveillance Pêche	Government Budget	0.41
Direction Régionale de l'environnement et des forêts Ngazidja	Government Budget	0.50
Direction Régionale de l'environnement Ndzواني	Government Budget	0.40
Direction Régionale de l'environnement Mwali	Government Budget	0.30
Direction Générale du Tourisme Union	Government Budget	0.50
Direction du tourisme Ngazidja	Government Budget	0.25

Government entity	Description	Amount (\$ M)
Direction du tourisme Mwali	Government Budget	0.25
Direction du tourisme Ndzواني	Government Budget	0.40
Direction generale de la sécurité Civile	Government Budget	0.40
Direction nationale de l'aménagement du territoire	Government Budget	1.00
MPEEIH, CRDE	Rural Economic Development Centers - 8 areas	2.20
<b>Total</b>	<b>All Government Baseline</b>	<b>9.43</b>

101. The investment from donor agencies in PA management is significant. UNDP has been managing two programmes that contribute to PA management in different ways: (1) the ‘OCB Project’, or “*Capacity development and promotion of CBO volunteering as a model for involvement of village communities in achieving the MDGs in the Comoros*”; and (2) the ‘CNDD Project’ or “*Developing capacities for environmental management and multi-sectoral coordination for sustainable development in Comoros*”. Together, they constitute a baseline of \$2.16M. The French Development Agency (AFD) is investing heavily on the on-going management of Moheli Marine Park and in its large watershed, proposed as the Moheli Rainforest PA. This is rolled out in part through the ‘AFD Djando Project’ and the ‘Moheli Project’, and in part through the past ‘ECDD project’, which was implemented in collaboration with Bristol Zoo and the Durrell Wildlife Conservation Trust—all of which are conservation oriented investments that represent some \$6 M from AFD. Renewed funding includes a \$4.5 million investment in PMM for which \$1.5M will be used to seed a conservation trust fund for Comoros protected areas although the revenue generated from this seed capital will be earmarked for PMM.

102. As part of the CBD’s Programme of Work on Protected Areas (PoWPA) and OCB projects, short trainings were organized for rangers, ecoguides and PA managers in anticipation of the creation of terrestrial protected areas. A 5-day tourist guide training (plus site visits) was provided to 50 people from the 19 villages surrounding the Karthala forest. Instructors were from the University of Comoros, national NGOs and institutions. Topics included historical, cultural and natural heritage, biodiversity, including some knowledge on safety and first aid. A 6-day ranger training including site visits was provided to 20 people from the 6 villages surrounding the forest of Mount Ntringui. Instructors were from the University of Comoros and the OCB project. Topics included biodiversity, ecology, landscape, traditional uses of forest species, ecotourism, regulations and basic first aid. A 2-week training in PA management was provided to 20 people from national institutions in charge of Environment, at the Union and island levels, and from the University of Comoros. Training addressed a wide range of topics including terrestrial and marine biodiversity, PA delimitation, zoning, and management, project development and management, participatory natural resource management, communication, knowledge management, sustainable development, legislation and international conventions, IUCN criteria and threatened species, ecological agriculture, pedology, environmental impact assessment, administrative and financial management, mobilization of financial resources and PA management tools such as MIRADI (Adaptive management software for conservation projects). Training included sites visits to future PAs in Ngazidja. These initiatives were very important for advancing with the protected area agenda in Comoros, but as GEF funding was involved, we do not count them against the financial baseline.

103. The Indian Ocean Commission (IOC) is also involved in management of forests, coastal areas and fisheries—themes that are relevant for this project. These investments by the IOC (jointly with EU and FAO) represent a baseline of approximately \$1.0M. The SmartFish program is financed by the European Union and implemented by the COI and FAO. The program seeks to promote ecotourism in order to generate alternative and sustainable livelihoods for fishing communities living in coastal areas, including on marine protected areas and conservation areas. Six fishing communities identified within

APs covered by this project will receive training to be able to offer quality services and market them with hotels and agencies. An estimated \$26,600 has been directly allocated to the Comoros. Furthermore, investments in ecological research are making a contribution to the management of PAs in Comoros by generating essential knowledge and analysis for improving the PA system. These support activities are mainly financed by the EU, University of Turin and France's Institut de recherche pour le développement (IRD). Together, they represent \$1.5M in baseline investments.

104. The Regional Fisheries Monitoring Project (PRSP, "Plan regional de surveillance des peches") is a large regional project with a total of \$14.4 million of which 240,000 Euro was allocated to the Comoros. The project is in its second phase is 2013-201. Other coastal and fisheries projects include the Coastal Resources Co-management for Sustainable Livelihood (CoReC SuD) project at an investment of \$ 2.73 million implemented by Direction National des Ressources Halieutiques, and financed in part from the Japan's Social Development Fund (JSDF, BM, FADC). The CoReC SuD project runs from 2013 through 2017. Two additional programs associated with SWIOFP (South West Indian Ocean Fisheries Program) – one recently concluded and another in the planning stage – have provided approximately \$200,000 to Comoros for fisheries management. The new SWIOFish program is in development and will include multiple countries. The current estimated budget for Comoros is \$4 million over a 5-year period funded through the World Bank.

105. The EU is supporting a Climate Change Program that supports resilience to climate change that is currently in development. It is expected to provide approximately \$3 million in support from 2014-2017. A project from BID/FAO is seeking to support the intensification and diversification of agriculture in Moheli which has direct relevance towards the expansion of the Marine Park to include key terrestrial areas. The project is expected to provide \$1.5 million over 3 years.

106. Investments in tourism in Comoros are still incipient—and not comparable to regional "competitors" such as Reunion, Mauritius, and Seychelles. Even though it is very low at present it is increasing and has strong potential. There are flights from Nairobi and Tanzania, both tourism hubs, and from the Gulf (Dubai). The main tourist attractions in Comoros are its beaches, sports fishing and mountain scenery. Both Moheli and Karthala are picturesque tourist attractions, which may in the future generate revenue for investment in PA management. The UN has developed a program called the "Enhanced Integrated Framework" that is focused on developing tourism in the Comoros with an emphasis on ecotourism. The project budget is estimated at \$3 million from several donors and partners including UNESCO. The Enhanced Integrated Framework (EIF) of UNDP aims to integrate Comoros in regional and international trade. One program focusing on tourism "Development and promotion of responsible ecotourism in the Union of Comoros" pursues the objectives to: 1) Increase the number of visitors in protected areas and duration of their stay, and the number of jobs in tourism businesses and related sectors (accommodation, catering, tourism, agriculture and handicrafts), 2) Increase tourism revenues of village communities in and around protected areas (terrestrial and marine Mwali PA, Karthala forest, Massif du Mont Ntringui), and 3) Promote the cultural, artistic, culinary, and religious heritage. This project combined with the natural beauty of the Comoros could create the potential for the development of high-end eco-tourism products and facilities. Although currently difficult to assess and project, it is possible that private sector investment over the course of this project could represent a baseline of \$5-8M over the project's lifetime. As this amount is speculative, it is not included in the baseline analysis.

107. The World Bank conducted in 2013 a review of the tourism sector in the Comoros and an analysis for a regional integration program in the Indian Ocean. The priorities identified for the development of tourism in the Comoros include the definition of a Master Plan, a favorable investment climate for a flagship project, the opening of tourism operators to market and technical networks, a clear positioning of the destination and visibility on the web.

108. The EU-financed SCORE project (500,000 € for Madagascar and Comoros), implemented at the University of Comoros with the support of the University of Madagascar and University of Torino, allowed training 15 Master level students from Comoros in biodiversity conservation and sustainable development, and integrating the programme in its cursus. In 2014, the programme will take place in Mwali to take advantage of the marine park for the training of 20 students. We consider approximately half of this amount as part of the financial baseline (\$0.34M).

109. **The total project baseline represents an investment of approximately \$22M**, of which **\$7M** can be said to contribute to PA systemic issues (the subject matter of Component 1), including correlated issues, such as knowledge management on land use, the biophysical and social environment, legal and policy reforms; and **\$15M** more directly to site-level management (the subject matter of Component 2), as well as livelihoods development and support to the tourism sector.

110. The project's baseline accounts for previous and planned investments that have established—or will established— i.e. the conditions that make the implementation of the proposed project possible. These baseline projects achieve this by addressing gaps, building knowledge and forging partnerships among stakeholders—ultimately enhancing the GEF's catalytic role within the project. Part of this baseline funding is also being presented as co-financing to the project, in particular government funding.

111. However, even though baseline activities are significant, they fall short of the proposed long-term solution of constituting a functional and more sustainable system of PAs in the Union of Comoros.

112. **Under the business as usual scenario**, Comoros would struggle for years to complete the process of gazetting new areas. The expansion of the system would not be based on an overarching strategy to orient PA policies. While it is possible that some areas may achieve full gazettal, given that the process is rather advanced for some of them, this would not be followed by a quick or effective operationalisation of sites.

113. Furthermore, funding is scarce and it has proven difficult to sustain the achievements from previous PA supporting interventions. As a result, globally important ecosystems and species in Comoros would continue to be threatened. Deforestation and degradation would continue in a range of areas leading to further land-use change and loss of habitats. Overfishing and destructive fishing techniques will continue unabated in coastal areas and fish stocks for certain species may eventually collapse. The near-shore marine ecosystems would become increasingly simplified and coral communities more vulnerable. Some species with limited ranges will see their habitats more and more fragmented, leading them closer towards extinction (noting that some of them already are).

114. In addition to the continuing degradation of the environment, current efforts at development in and around natural habitats are not being well planned or implemented. For example, the Government had planned to build a road across Mwali through the core of the planned protected area. This would result in fragmenting the forest habitat and populations of flora and fauna in it, destroying habitats, creating an obstacle to the free movement of wildlife, and facilitating access to forest resources – almost certainly resulting in over-exploitation.

115. The many initiatives, both on the part of local communities and donors that aim to create protected areas and community reserves are not based on adequate legislation and overarching strategy. Part of this lack of leadership is resulting in poor infrastructure choices (e.g. corrugated sheet bungalows built beside the lake Dzilandzé, at the heart of a scenic priority area for conservation). In the absence of clear leadership and a policy, strategy or structured national plan to guide the development of the network of protected areas in the Comoros, these initiatives - however motivated by a desire to preserve and promote nature - lack coherence and could compromise the integrity of sites by inadequate facilities.

## INTRODUCTION TO PROJECT SITES

116. The table below provides an overview of the protected area system, including the sites that are in the gazettal pipeline and will be established and operationalized with the assistance of this project. They are described further down. More detail can also be found in Annex 1: Conservation Values of Existing and Proposed Protected Areas.

**Table 4: Overview of PAs targeted by this project**

	PA name and island in parenthesis	Designation	Management	Status	Terrestrial area (ha)	Marine area (ha)	Total area (ha)
1	Moheli's Marine Park (Mwali)	National Park	Collaborative	Gazetted in 2001	3,725	36,675	40,400
2	Karthala Forest (Ngazidja)	National protected area	Collaborative	Decree in preparation	26,790	-	26,790
3	Mwali's Rainforest (Mwali)	National protected area	Collaborative	Proposed to be merged with the PMM, incl. PMM watershed	~ 16,170	-	~ 16,170
4	Massif of Mt Ntringui (Ndzواني)	National protected area	Collaborative	Decree in preparation	3,813	-	3,813
5	Moya forest (Ndzواني)	Community reserve	Community	Proposed	t.b.d.	-	t.b.d.
6	Hantsogoma (Ngazidja)**	Community reserve	Community	In process	[946.4 within Karthala PA]	-	(incl.)
7	Ngubadju (Ngazidja)**	Community reserve	Community	In process	[240.6 within Karthala PA]	-	(incl.)
8	Ndroudé Islet / Ile aux Tortues (Ngazidja)	Community reserve	Community	In process	~ 2	~ 448	~ 450
9	Coelacanth Zone / Baie de Dauphins (Ngazidja)	National protected area	Collaborative	In process	-	~ 7,572	~ 7,572
10	Bimbini Peninsula / Ilôt de la Selle (Ndzواني)	National protected area	Collaborative	In process (terrestrial area is approximate)	25	~ 3,000	3,025
Total existing PA estate					3,725	36,675	40,400
Total area of new PAs above and whose establishment will be facilitated by the project					At least 46,800	~ 11,020	~ 57,820
Total expanded PA estate					At least 50,525	~ 47,695	~ 98,220

### [1] Moheli's Marine Park.

The Moheli Marine Park, the first protected area in the Comoros, was established in April 2001 under the UNDP-GEF project "Biodiversity Conservation and Sustainable Development in the Comoros" (Decree No. 01-053/CE). The PMM is in southern area of Mwali, including Nioumachoua islets covering a surface area of 40,400 ha and is classified as a national park and follows a co-management approach with local village communities.

The beautiful landscapes of the park include different types of habitats: coral and volcanic sand and pebble beaches, mangroves,

large islets, and fringing coral reefs, all of which are great assets for recreation and tourism. The site is important for the reproduction of endangered migratory species such as marine turtles. The park includes adjacent land areas such as the crater lake Dziani-Boundouni which is classified Ramsar site which hosts a high diversity of waterfowl, including a large population of grebes *Tachybaptus ruficollis*, and the forest on the lake's watershed is the habitat of endangered species, including the mongoz lemur (*Eulemur mongoz*) endemic to Madagascar-Comoros.

In ten years, progress has been made in improving management with the participation of communities, which is reflected by improved health of coral reefs, the stability of 91 ha of mangrove preserved over the 108 ha of mangrove in the Comoros, the confirmed presence of four dugongs, the increase in annual sea turtle ascents onto beaches from 15,000 in 1998 to 25,000 today, which makes it the most important sea turtle nesting area near a human population. The fisheries management measures adopted at the creation of the park have significantly reduced the pressures on coral reefs. Fishermen then observed an increase in catch and size and the return of some species that had disappeared from the area. However, soil and beach erosion poses a serious and continuing threat to marine resources and may continue to worsen due to the heavy pressure exerted by the population on terrestrial environments.

## [2] **Karthala forest**

Located in the south center of Ngazidja, Karthala is an active volcano renowned for its "caldera" of three kilometers in diameter. The proposed protected area is situated at an altitude between 800 and 2,361 m and will cover an area of 26,790 ha. The zoning is divided into a multiple-use eco-development zone (8,040 ha) and a conservation area (18,750) ha integrating the rainforest and arborescent heather (*Philippia* spp.) savanna. The latter is divided into a core zone (8864 ha), a buffer zone (6,790 ha) and a controlled-use area (3,096 ha) which includes the caldera of the volcano. A total of 18 villages are concerned by the establishment of the PA.

On the western and southern slopes above 1200 m altitude, the Karthala forest type includes rainforest, shrubby mountain and cloud forest. An inventory<sup>49</sup> carried out in the southern part of the Massif du Karthala has identified 195 species distributed in 133 genera and 65 families. A recent inventory<sup>50</sup> of the woody flora of the Karthala has identified 95 species belonging to 82 genera and 45 families. Among these species, 19 are endemic to the Comoros archipelago or 20% of the woody flora inventoried, and 5 are endemic to the island of Ngazidja (*Ravenea hildebrandtii*, *Senecio humblotii*, *Philippia comoriensis*, *Scolopia coriacea*, and *Allophylus gardineri*). The most frequent species are *Weinmannia comorensis*, *Ocotea comoriensis*, *Nuxia pseudodentata*, *Tambourissa comorensis* and *Aphloia theaeformis*, the first 4 being Comoro-endemic. Comoro-endemic species are more abundant on the western side (14 species) as compared to 12 on the south side and 9 on the eastern side. The western side is also the richest in Ngazidja-endemic species since 4 are found there: (*Ravenea hildebrandtii*, *Philippia comoriensis*, *Allophylus gardineri*, *Scolopia coriacea*); 2 species (*Philippia comoriensis*, *Senecio humblotii*) occur on the eastern slope and none has been inventoried on the south side.

The Karthala forest is home to several endemic and/or endangered flora and fauna species, some of which have a distribution limited to a small area of the Karthala. This site has been identified as an Alliance for Zero Extinction (AZE) site due to the presence of Critically Endangered or Endangered species with a limited range, as a Ramsar site and as an Important Bird Area. It includes five endemic endangered and vulnerable bird species, Mount Karthala White-eye (*Zosterops mouroiensis*), Grand Comoro Scops-Owl (*Otus pauliani*), Grand Comoro Flycatcher (*Humblotia flavirostris*), Grand Comoro Drongo (*Dicrurus fuscipennis*) and Mayotte Drongo (*Dicrurus waldenii*), endemic subspecies as the Comoro Blue-Pigeon (*Alectroenas sganzini*) very rare and threatened by hunting, and two endangered species: the Black Parrot (*Coracopsis nigra*) living between 800 m and 900 m altitude and the Comoro Olive-Pigeon (*Columba pollenii*) to 1400 m altitude. All bird species restricted to Mount Karthala are considered threatened, and, consequently, the forest ranks highly amongst the key forests for threatened birds in Africa. Mammals include the island-endemic species<sup>51</sup> Griveaud's long-fingered bat (*Miniopterus griveaudi*) and the vulnerable Comoro Rousette (*Rousettus obliviosus*). Reptiles include 2 island-endemic species (*Phelsuma comorensis*, *Furcifer cephalolepis*) and 4 Comoro-endemic species (*Phelsuma v-nigra*, *Mabuya comorensis*, *Lycodryas sanctijohannis*, *Typhlops comorensis*). Lepidoptera include 9 island-endemic species, 2 Comoro-endemic species, and three endangered: *Papilio aristophontes*, *Graphium levassori*, *Amauris comorana*. There are also several orchid species, endemic tree ferns and endemic dwarf palms on the western slope. *Khaya comorensis*, a threatened endemic tree species that provides precious wood is still present in the high altitude forest of the Karthala, although it has become very rare.

<sup>49</sup> Abderemane, A.M. 2007.

<sup>50</sup> CHARAHABIL, M.M., I. YAHAYA, J-N. LABAT et L.E. AKPO. 2013. Variabilité spatiale de la structure spécifique d'un peuplement ligneux et de l'endémicité en zone de montagne aux Comores. Int. J. Biol. Chem. Sci. 7(3): 902-923, Disponible en ligne à <http://ajol.info/index.php/ijbcs>

<sup>51</sup> Juste, J. 2008. *Miniopterus griveaudi*. In: IUCN 2011. IUCN Red List of Threatened Species. Version 2011.2. <[www.iucnredlist.org](http://www.iucnredlist.org)>.

The major threat is underplanting followed by complete clearance for agriculture. The lower limit of intact forest is retreating upwards as clearance proceeds for agricultural expansion. In the north-east, cultivation reaches at least 1,400 m and the forests have been entirely cleared. Large trees are selectively removed for making pirogues. Secondary forests are dominated by the invasive strawberry guava *Psidium cattleianum*, and other exotic plant species are increasing. The surroundings are mostly cultivated, except to the north, along the island's axis, where grassland dominates. In addition to agriculture in the lower areas the site is used for logging, cattle-grazing and limited collection of non-timber forest products. Commercial logging is very active on a 5,000 ha concession on the south-western slopes. Previous logging activity elsewhere has been abandoned, but logged areas have been taken over by agriculture. Management recommendations include the control of exotic invasive species and the reforestation of the grasslands of the central ridge of the island.

### [3] **Mwali Rainforest** - to be annexed to Moheli's Marine Park

The surface area of the ridge forest is 6142 ha, and the total terrestrial area including the marine park watershed is approximately 16,170 ha. A zoning for the forest area was proposed and includes a 2325 ha multiple-use eco-development zone and a 3817 ha conservation area divided into a core zone (1907 ha) and a buffer zone (1910 ha). A total of 14 villages are concerned by the expanded PA, ie the PMM and the land area including Mwali rainforest and the marine park watershed.

The evergreen tropical rainforest occupies the upper part of the island between 500 and 700 meters on the central ridge of the Mlédjélé to the west and on its south-facing slopes and on the crest of the Mze Kukule. This area is the most rugged part (very steep slopes above 60%), with the highest rainfall, the highest tree cover, and is the most vulnerable to erosion following deforestation. The forested area comprises a low forest dominated by large trees up to 25-30 meters high on the ridges and a multi-stratum forest dominated by large trees of 30 to 40 meters on the slopes, in which are rare precious wood species such as *Weinmania comorensis* and *Khaya comorensis* and other endemic forest essences such as *Tambourissa comorensis* and *Ocotea comorensis*. Although of medium altitude in comparison to other islands, Mwali forest contains high altitude species such as *Khaya comorensis* and *Chrysophyllum boivinianum*. Non-woody dominant flora is dominated by pteridophytes and orchids.

Mwali supports a unique forest bird community, including two island-endemic species: the critically endangered Moheli Scops-owl (*Otus moheliensis*), and the Moheli Warbler (*Nesillas mariae*). Six other restricted-range species and one seabird also breed, of which one, the Comoro Olive-Pigeon (*Columba pollenii*), is near-threatened. Twelve island-endemic and seven Comoro-endemic subspecies are also present, along with the endangered, but non-endemic, Reunion Harrier (*Circus maillardi*). An endemic subspecies of sea bird, *Puffinus lherminieri temptator* seems to nest only in the Mwali forest. Most of the threatened and restricted-range species are associated with the intact forest, although all have been seen outside it. This forest is classified as globally important for bird conservation (IBA) and is identified as an AZE site due to it containing critically endangered or endangered species with a limited range. The forest is also home to endemic and threatened mammal species like the endangered Comoro Black Flying Fox (*Pteropus livingstonii*), the vulnerable Comoro Rousette (*Rousettus obliviosus*), and the vulnerable lemur *Eulemur mongoz* (introduced but important population on Mwali). Reptiles include at least six Comoro-endemic species: *Lycodryas sanctijohannis*, *Paroedura sanctijohannis*, *Phelsuma v-nigra*, *Amphiglossus johanna*, *Mabuya comorensis*, *Typhlops comorensis*. Butterflies include one Mwali-endemic and four Comoro-endemic species (three shared only with Ndzuani).

Pressures affecting Mwali's forest and its resources result from the interaction of land, economic, social, demographic and environmental factors. The surface of natural forest in 1949 was estimated at over 5,000 ha, at 3,325 ha in 1977 and 3,400 ha in 1983, indicating that the natural forest had declined at an average rate of more than 50 ha per year during this period. The total forest area measured in 2011 as part of the National Forest Inventory was 5679 ha -which represents 20% of the total area of the island- consisting of 91% of moist evergreen forest and 8% of semi-deciduous rainforest. The main threat to native wildlife is continuing conversion of the forest to agriculture, exacerbated by the increasing population, with immigrants arriving from the neighbouring island of Ndzuani. Forest exploitation is concentrated at the eastern and western extremities of the forested area, and also above Fomboni. Introduced rats are abundant.

It has been proposed to classify Mwali Island, including its islets, as a UNESCO biosphere reserve merging the terrestrial and marine protected areas to cover an area of 66,560 ha including a core zone of 4,406 ha, a buffer zone of 47,770 ha and a peripheral area of 14,383 ha.

### [4] **Massif of Mt Ntringui**

**Massif of Mount Ntringui** (Ndzuani). The total surface area of the planned protected area is 3813 ha, representing 8.9% of the island area. This area includes a 2540 ha conservation area and a 1273 ha controlled-use area. A total of 6 villages are concerned by the establishment of the PA. This site has been identified as an Alliance for Zero Extinction (AZE) site due to it containing a

Critically Endangered or Endangered species with a limited range, as a Ramsar site and as an Important Bird Area.

The remaining forests of Ndzuani located on steep and inaccessible slopes and including those of Mount Ntringui present a high interest in terms of biodiversity because they hold endemic and threatened species such as the critically endangered Anjouan Scops-owl (*Otus capnodes*), a great diversity in orchids and spike moss, arborescent ferns and heath (*Philippia spp.*), two giant bat species endemic to the Comoros: the Comoro Black Flying Fox (*Pteropus livingstonii*) and the Seychelles Flying Fox (*Pteropus seychellensis* var. *comorensis*), and several other bird, fish and reptile species. The Mongoz lemur (*Eulemur mongoz*) although rare in Madagascar, is widespread in Ndzuani. The Dzilandzé Lake, on top of mountain ridges in the center of Ndzuani, is the largest lake of the island. The lake and its surroundings provide habitat for grebes, freshwater fish and several other forest species. Until now, these sites have been preserved because of their limited accessibility.

A study<sup>52</sup> compared seven forest sites in the islands of Ndzuani and Mwali that contain the largest colonies of Livingstone fruit bat and collectively harbor more than half of the population of the species. Taking into account the conservation value, level of threat and feasibility of each site, the analysis concludes that Yiméré in Ndzuani and Hassera-Ndrenge in Mwali are priority sites for the creation of reserves. The forest of Yiméré is located halfway up a steep slope in the south-east at the limit of land clearing in the surroundings of the Lingoni village. Its high conservation value lies in the fact that it is home to the oldest and one of the largest colonies of Livingstone fruit bat which was regularly monitored by Action Comores since 1992. The central area consists of primary forest, mainly multi-stratum rainforest with an intact canopy, also including tree ferns, few non-native tree species and relatively undisturbed undergrowth. It contains the highest total tree diversity of the visited sites and the highest number of rare and endangered tree species. This site features a wide variety of native birds, including the Anjouan Scops Owl endemic to the island and other threatened or rare species such as the mongoz lemur endemic to Madagascar and Comoros. The nearby cascade of Sept Rivières is an asset for conservation since the conservation of forest adjacent to streams will maintain water supply and fight against erosion.

The forests and native wildlife are currently under pressure from deforestation and expansion of agricultural and grazing land, lack of management, precious wood exploitation and the introduction of exotic species. The most important threat is deforestation which follows the same progression with the same causes as elsewhere in the country: underplanting (removing undergrowth and preventing regeneration) followed by clearance for open field cultivation. Charcoal requirements are high in Ndzuani, particularly for distillation of ylang-ylang. New roads and tracks have facilitated forest exploitation by easing accessibility to the forest. The severe depletion of natural resources on Ndzuani has resulted in emigration to Mwali, thus contributing to accelerate degradation there. Hunting threatens pigeons, France's Hawk (*Accipiter francesiae*) and Anjouan Scops Owl (*Otus capnodes*). Exotic plant species and rats are abundant in the forest.

#### [5] Moya forest

**Moya community forest reserve** (Ndzuani). Ongoing interventions aiming at intensifying agriculture within village land to reduce pressures on biodiversity, including deforestation, could include the implementation of a community reserve (size to be defined) in the Moya forest zone, on the southwestern coast of Ndzuani. A total of 3 villages would be concerned by the establishment of the reserve. The Moya forest area is an important zone for all the key endangered species on Ndzuani including Anjouan Scops Owl (*Otus capnodes*), Comoro Black Flying Fox (*Pteropus livingstonii*), Mongoz lemur (*Eulemur mongoz*) which distribution is mostly associated with remnant natural forests. Recent biodiversity studies have shown the presence of 4950 individuals of Anjouan Scops-owl, mostly in natural forests but also in degraded ones. Forests are threatened by agricultural expansion and timber removal for construction/ planks.

#### [6] Hantsogoma

The site proposed to establish the **Hantsogoma community forest reserve** (Ngazidja) covers a surface area of 946.4 ha within the Karthala protected area and includes a mosaic of dry forest and wet evergreen forest around the lake Hantsogoma which is a small permanent crater lake located at 950 m altitude, at the northern foot of the Karthala. This site stands out in terms of biodiversity by its richness in orchids: 37 orchid species were recorded in this site. The critically endangered Grand Comoro Scops-Owl (*Otus pauliani*) was observed in this area in 2009.

<sup>52</sup> Sewall B.J., A.L. Freestone, M.F.E. Moutui, N. Toilibou, I. Saïd, S.M. Toumani, D. Attoumane, et C.M. Ibouira. 2010. *Comoros Community Forest Reserves Plan for Livingstone's Flying Fox, Rainforest Biodiversity, and the Comorian People*. Comoros Forest Reserves Project & Action Comores Anjouan. 93 p. & Sewall B.J., A.L. Freestone, M.F.E. Moutui, N. Toilibou, I. Saïd, S.M. Toumani, D. Attoumane, et C.M. Ibouira. 2011. *Reorienting Systematic Conservation Assessment for Effective Conservation Planning*. Conservation Biology, Volume 25, No. 4, 688–696.

#### [7] Ngubadju

The site proposed to establish the **Ngubadju community forest reserve** (Ngazidja) within the Karthala protected area covers 240.6 ha between 545 and 1000 m in central western of the Massif du Karthala located in the southern part of the island of Ngazidja. The Ngubadju forest made of a mosaic of gallery and wet evergreen forest is one of the last vestiges of the lowland forest now disappeared from other slopes of the Karthala. Between 500 and 700 m altitude, the vegetation is dominated by dense stands of invasive alien species, *Psidium cattleianum* gradually replaced by *Syzygium jambos*. From 800 to 1200 m above sea level lies a moist evergreen forest 20-30 m tall dominated by tree ferns. This plant community has a rich flora including 84 species belonging to 70 genera and 46 families. Due to their high abundance and good regeneration capacity in this forest, 4 species are characteristic of Ngubadju: *Khaya comorensis* (which represents 15% of the floristic composition of this site), *Filicium decipiens*, *Dombeya condensata* and *Olea lanceolata*. This site is therefore distinguished by the best-preserved stock of the rare and endemic *Khaya comorensis* and of *F. decipiens*, two endemic species characteristic of moist forests of the Comoros, which have become rare in the rest of the Karthala forest and in other forests of the Comoros. Ngubadju forest as well as the entire Karthala forest is home to unique bird and butterflies species such as *Mylothris humbloti*.

The old Humblot sawmill and administrative buildings of the colonial times found on this site at an altitude of 500 m, bear witness to the French occupation in the Comoros archipelago. The local population, aware of the degradation of the site, but also of its undeniable interest, took the initiative to convert it into a Botanical Garden and seek support to renovate the buildings.

#### [8] Ndroudé Islet / Ile aux Tortues

A small project supported by the GEF Small Grant Programme (SGP) and led by the Association for Ndroudé's cultural and economic development plans to establish a community reserve including the *Île aux Tortues*, Ndroudé and 2 adjacent villages (northeast of Ngazidja) for the protection of sea turtles and development of ecotourism. The *Île aux Tortues*, located approx. 300 m from Ndroudé's shore has a surface area of 2 ha and is surrounded by coral reefs and seagrasses which are reportedly used by the vulnerable Dugong (*Dugong dugon*) and the endangered Green Turtle (*Chelonia mydas*) as a feeding site. Green turtles used to nest on the beaches of the island. The total area of the proposed community reserve is 450 ha. 3 villages<sup>53</sup> are concerned by the establishment of this reserve.

The *Association Ndroudéenne d'Échanges Culturels et de Protection de l'Environnement* has received funding from GEF SGP (26,111 US\$ - Dec. 2011 to Dec. 2012) to build 3 bungalows and a multipurpose room to develop ecotourism to support conservation efforts. The interest around this site has attracted the intervention of a Swiss NGO, the Swiss Cetacean Society, which has recruited and trained 4 ecoguards, including a former poacher, to carry out regular night patrols on the beach to prevent attempts to poaching of sea turtles or illegal sand extraction. It is reported that turtles' ascents on beaches are more frequent since the implementation of beach monitoring.

#### [9] Coelacanth Zone / Baie de Dauphins

**Coelacanth zone** (Ngazidja). The site proposed to establish this MPA covers 7,572 ha of seascape along the southwest coast of Ngazidja. This site has long been identified as a priority area for the establishment of a protected area to protect the coelacanth population, its habitat, and the adjacent *Baie des Dauphins* which is highly frequented by whales and dolphins. The global importance of this site is first related to the volcanic caves located near the coast that are home to the famous coelacanth (*Latimeria chalumnae*), an endangered living fossil of worldwide scientific interest. The value of this site is also linked to the presence of an important and well-preserved coral reef in the southern part (Chindini). In the *Baie des Dauphins*, the species most commonly seen are the Spinner Dolphin (*Stenella longirostris*), the Common Bottlenose Dolphin (*Tursiops truncatus*) and the Spotted Pantropical Dolphin (*Stenella attenuata*). Available data indicate the presence of at least 12 whale species in comoran waters, including the Humpback Whale (*Megaptera novaeangliae*), a Beaked whale (*Mesoplodon* sp.), the Killer Whale (*Orcinus orca*), the Southern Right Whale (*Eubalaena australis*) and the Bryde's Whale (*Balaenoptera edeni*). The Pygmy Killer Whale (*Feresa attenuata*) was observed in large groups of up to 500 individuals. Four couples of sperm whales (*Physeter macrocephalus*) were observed off Itsamia in March 2009.

<sup>53</sup> A proposal to create a large MPA to encompass all of the northern area of Ngazidja, including the *Île aux Tortues*, would imply the involvement of a total of 11 villages.

The coastal area and resources are protected by the initiatives of an association that brings together representatives of the 12 villages in the Coelacanth zone, the Association for the Protection of the *Gombessa* (APG), which was created in 1995 and whose activities have been continuing to date, mostly through the voluntary involvement of the association's members. The APG aims at protecting the coelacanth whose main threat is fishing with bottom line, through educating fishers, promoting alternative economic activities and improving fishing and processing facilities. A Center for Information, Education, Valorisation and Conservation of the Coelacanth and its Marine Environment in the Comoros was recently inaugurated with the mission to collect, process and disseminate information about the coelacanth and its environment, educate, promote ecotourism focused on the coelacanth, promote environmentally friendly fishing practices, and participatory natural resource conservation.

#### [10] Bimbini Peninsula / Îlot de la Selle

The total surface of the proposed protected area is approximately 3,025 ha, mostly marine. The marine and coastal area of the Bimbini Peninsula in Ndzuani is home to a rich biodiversity, both at the specific and ecosystem levels. A total of 12 villages are concerned by the establishment of the MPA. Ecosystems include mangroves, a coastal barrier-reef complex<sup>54</sup>, beaches once used by turtles as nesting sites, seagrass beds and Pomoni coastal marsh. Bimbini mangrove is a strip of fragmented mangroves that stretches over 7 km of the southwest coast and covering a 25 ha area. The coastal barrier-reef complex that runs along the entire coast on the southern side of the peninsula includes an enclosed lagoon and covers a 1,575 ha area. Coral colonies are dominated by *Favia* and *Favites* (massive), *Acropora* (branching), *Turbinaria* and *Montipora* (foliated), and *Platygyra* and *Leptoria* (meandering) types. Seagrass beds are developed and provide habitat and feeding sites for many fish species. The site has already been used by the endangered Green Turtle (*Chelonia mydas*), the critically endangered Leatherback Turtle (*Dermochelys coriacea*) and the vulnerable Dugong (*Dugong dugon*) but studies are needed to verify the actual presence of these species at this site.

Although relatively protected by environmental awareness and conservation efforts of local people, this site is still exposed to many threats to biodiversity and the environment in general: i) a coastal and marine pollution by the dumping of waste and soil deposits produced by land erosion aggravated by deforestation, causing degradation of the coral reef and seagrass and loss of associated biodiversity, ii) artisanal fishing by destructive methods, such as using *Tephrosia*, small mesh nets, fishing on foot on the reef flat, and the use of dynamite, iii) depletion of turtle populations that nested in Bimbini due to poaching and the disappearance of nesting beaches, iv) the regression of beaches caused by the extraction of beach sand and pebble and accelerated coastal erosion, and v) cutting mangrove wood for building or as fuelwood.

Selection of these sites was based on a number of factors. A national workshop held in Moroni in 1996 had identified priority marine and terrestrial sites to form the network of protected areas of the Comoros. The results of this workshop were the basis for the Biodiversity Conservation project which has established the PMM in 2001 and until now have defined the priorities for the creation of protected areas, i.e. Karthala and the Coelacanth zone in Ngazidja, Ntringui Mountain and the Bimbini peninsula/Ile de la Selle in Ndzuani, and Mwali's rainforest. Since then, voluntary community initiatives have made some progress in implementing conservation measures to protect the coelacanth, for the creation of two forest community reserves on the Karthala and marine community reserves around the Turtle Island and the Bimbini peninsula. Therefore these sites were selected as part of this project because of this on-going process and because of the village communities' strong commitment to conservation and managing the site as a protected area, as well as the globally significant biodiversity found at these sites.

## PART II: Strategy

### PROJECT RATIONALE AND POLICY CONFORMITY

#### *Fit with the GEF Focal Area Strategy and Strategic Programme*

117. This project will reinforce the process of creating and operationalizing protected areas in the Union of Comoros. It will bring under protection at least 46,800 ha of new terrestrial areas (Karthala

<sup>54</sup> Atlas of Western Indian Ocean Coral Reefs, 2009, IRD, pp.5

forest, Ntringui mountain, Mwali rainforest), thus expanding terrestrial protection to 27% of the national territory area, including land- and seascapes. The project will also help create marine protected areas (MPAs: Turtle Island/North Ngazidja, Coelacanth zone and Bimbini peninsula), over approximately 11,020 ha of marine areas, thus expanding marine protection to some 3.8% of the territorial waters. All of the existing PAs/MPAs provide habitat to unique and threatened species across the country. Specific sites within the future PA estate enjoy international designations, more precisely Important Bird Areas (IBAs) and Ramsar sites.

118. The project is consistent with the goals of GEF Biodiversity Strategic Objective One (BD1), which is to improve sustainability of Protected Area systems.

119. The project will contribute to the achievement of GEF’s outcome indicators under the strategic programming area as follows:

**Table 5: GEF Focal Areas**

GEF V Biodiversity Focal Area Objectives	Expected Focal Area Outcomes	Expected Focal Area Outputs	Project contribution to indicators
BD1: Improve Sustainability of Protected Area Systems	1.1: Improved management effectiveness of existing and new protected areas	New protected areas (7) and coverage (at least 57,820 ha of terrestrial areas + marine areas) of unprotected ecosystems  Sustainable financing plans (1)	METT scores for 8 PA sites will improve from an average of 25% to an average of 50%  7 new Protected Areas encompassing 11,020 hectares of marine ecosystems and 46,800 hectares of terrestrial ecosystems

***Design Principles, Strategic Considerations and Rationale and summary of GEF Alternative***

120. This project made the **strategic choice** of focusing on the urgent need to address direct threats to highly threatened ecosystems by providing protection to them through a PA approach. for two key reasons. First, a preliminary analysis of land management interventions showed that the needed intensification of agriculture is already taking place with funding from other sources but the GEF. This analysis was confirmed through PPG studies. In the current setting, GEF funding would probably have a limited impact on sustainable land management (SLM) in Comoros. Secondly, a consolidated approach that focuses on PAs will help address threats to biodiversity both in the terrestrial and in the marine environment. The latter is also under increasing pressures. The chosen approach will afford the much needed protection to relict forest patches, as well as coastal and near-shore threatened habitats.

121. This Project has been designed to consolidate and harmonize biodiversity conservation efforts on every level by developing systemic, institutional and individual capacities, by providing political, institutional and legal frameworks to develop, manage and ensure the sustainability of the protected areas system. It is a crucial step in the pursuit of the long-term conservation agenda (or solution), because of the baseline interventions have managed to consolidate efforts and effectively create a system of PAs. Thereby, the project will focus on investments in institutional creation and development – effectively establishing a Union-wide PA management authority that is able to provide a systematic technical and administrative support to the range of initiatives currently moving forward without structure or adequate technological or financial capacity. As well, the lack of examples of effective management and co-management of protected areas in Comoros limits the ability of stakeholders to develop the skills and the experience necessary to effectively manage protected areas. In addition to funding the operationalization

of new protected areas at 7 sites, the project will support the implementation of planning processes and information systems to enable the implementation of adaptive management for the whole system and in every site. The project sets ambitious but feasible targets for the next five years in terms of establishing a system of PAs and creating the basis for its sustainability.

## **PROJECT GOAL, OBJECTIVE, OUTCOMES AND OUTPUTS/ACTIVITIES**

122. The Government of the Comoros is requesting GEF support through this project to remove, in an incremental way, the existing barriers to the establishment and management of a consolidated PA system in Comoros.

123. **The project goal** is to contribute to the conservation of Comoor's coastal and marine biodiversity through a protected area approach.

124. **The project's objective** is to establish an expanded and functional system of protected areas (PAs) in the Union of Comoros, representative of the country's biodiversity endowment and with good prospects for a sustainable future.

125. The project's intervention has been organised in two components, each corresponding to an outcome, which are in line with the concept presented at PIF stage:

### ***Component 1: PA system strengthened through expansion and capacity building***

**Outcome 1:** *The Union of Comoros' PA system is expanded through the addition of nine (09) new sites to the estate, affording protection to varied terrestrial, coastal and marine ecosystems, and reaching a total coverage of 98,220 ha, which includes 27% of the land surface of the three islands that are object of this project and at least 47,695 ha of seascapes around them. This PA system will be both more sustainably financed and more effectively managed by a capacitated national PA institution and subsidiary PA agencies on each of the islands, leading to reduced threats to globally significant habitats and species.*

### ***Component 2: Site level PA operationalisation***

**Outcome 2:** *At site level, the following key results are achieved: (a) Increased management effectiveness for Comoros' PAs and MPAs provides improved protection to habitats in approx. 98,000 ha of protected land/seascape and to the species that they harbour, of which 41,650 ha<sup>55</sup> will be directly supported by site level operationalization activities and the remainder co-supported by the project, but mostly financed by partners; (b) The direct and indirect benefits to local communities create tangible incentives for them to support efforts to preserve the biodiversity of the Comoros.*

### ***Component 1: PA system strengthened through expansion and capacity building***

126. Under this Component, the project will work on four inter-related fronts: (1) improving the legal and institutional frameworks for PA management; (2) strengthening capacity for PA management at the

<sup>55</sup> We here refer to Karthala (including 2CRs); Mt Ntringui; Turtle Is.; Z. Coelacanth/B. Dauphins; Bimbini/de la Selle. Other sites, namely PMM & Moheli Rainforest and Moya CR, are receiving significant financial support from AFD and NGO Dahari respectively. The project will co-support them through technical assistance for their inclusion in the PA system and possibly critical operationalization activities to be more closely defined at project inception.

system's level; (3) engineering the PA expansion and developing a strategy for the PA system; and (4) improving the financial sustainability of the PA system.

127. The nine sites are: Forêt du Karthala (Karthala Forest) with 26,790 ha, containing 2 Community Reserves, namely Hantsogoma (946.4 ha) and Ngubadju (240.6 ha); Forêt humide de Mohéli (Moheli Rainforest) with 16,170ha; Montagnes d'Anjouan - Mont Ntringui (Massif of Mt Ntringui) with 3,813ha; Réserve communautaire de la forêt de Moya (Moya Community Forest with a surface still to be agreed upon); Réserve communautaire de l'Îlot aux Tortues (Turtle Island Community Reserve) (450ha, of which 2ha are marine); MPA Zone du Coelacanth - Baie des Dauphins (Coelacanth Zone - Dolphin Bay) covering 7,572ha of seascapes; and the Presqu'île de Bimbini - Îlot de la Selle (Bimbini Peninsula - Selle Islet) straddling 25ha of coastal areas and 3,000ha of seascapes.

**Output 1.1 - A new legal framework for the management of the PA system is approved** (incl. review of existing related legislation, and enacting of a PA law) **and its institutional structure is formalized** (mandate, attributions and basic organigram are legislated, and state budget allocations for its operations are secured). This structure includes the manning of key posts, with designated technical staff, and the deployment to sites of both site managers (*conservateurs*) and rangers (*écogardes*), the latter recruited, where possible, from adjacent communities.

The project will ensure that there is an improved legal and institutional basis for the establishment and management of PAs and MPAs in Comoros. This will imply updating and consolidating the legislative and regulatory tools to plan, create, manage and supervise protected areas of the Comoros and harmonizing these tools with those that are affecting protected areas and their resources. This will also include reforming the institutional structures responsible for PA/MPA management and upgrading the qualifications of key people who will be engaged in PA management.

#### 1.1.1 Legislative and regulatory tools to plan, create, manage and supervise protected areas of the Comoros are updated, consolidated and harmonized with those that are affecting PAs.

The following steps will be indicatively following in the process of drafting and approving new legislation for PAs that will be supported by this project:

- i) A multi-stakholder committee to oversee the development of the new legislative and regulatory tools is established
- ii) Broad consultative meetings to discuss options are held in the three Islands
- iii) The new or amended legislation and regulatory texts are drafted and submitted to the compenent national body for approval

There are concrete proposals for how these steps can be carried out and what should be taken into consideration in the development of legislation under this activity. Details on this are in:

Annex 5: Key Component 1 Activities relating to the development of the legal, policy, institutional and capacity development framework for new PA system – under [PA Legal and Regulatory Framework](#).

#### 1.1.2 The institutional entity in charge of the PA system is established

Weak institutional capacity and lack of clarity in the attribution of competences for the Environment between the Union and the Islands could compromise the promotion of the protected areas program within the government and hence the institutional and financial sustainability of the protected areas system. The project will support the design and establishment of a Protected Areas authority or agency that has clearly defined powers, duties and responsibilities.

Although the designation of the new entity, i.e. agency or office, will be clarified during the early stages of the project, it will likely be an autonomous public entity with appropriate skills and abilities and will be responsible for the implementation of the legislation and policy on protected areas, while remaining accountable to the State through the supervision of the ministry. The advantage of such an entity lies in its independence and decision-making autonomy (vis-à-vis the government) to raise funds, establish partnerships with other stakeholders, and encourage direct participation of communities and associations of civil society. This independence should

promote efficiency and effectiveness. At the same time, oversight by the ministry through the Department of the Environment, the main body for environmental management (Article 9 of the FLE), will ensure compliance of decisions with its mandate and with the objectives of the legislation on PAs. This proposal was examined and validated during a national workshop held as part of the preparation of this project.

The following steps will be indicatively following in the process of establishing an adequate institutional framework for the management of the PAs system, as it will be supported by this project:

- i) The central unit (agency or office) dedicated to managing the PA system is established
- ii) The PA management units (at site level) are established
- iii) The PA system Board of Directors is established
- iv) The PA system Advisory Board is established

More details on the above steps are described in:

Annex 5: Key Component 1 Activities relating to the development of the legal, policy, institutional and capacity development framework for new PA system – under [PA institutional framework](#).

### **Output 1.2 - Capacity development: PA agency staff at various levels and key members of communities and associations involved in PA collaborative management are capable of fulfilling their mandate.**

Capacity development will be achieved through: (i) the implementation and adaptation of an information system for monitoring, analysing, mapping and disseminating various information/data across the system; (ii) the provision of adequate training on various aspects of PA management, and (iii) the development and implementation of a strategic communication plan.

Capacity development is considered at three interrelated levels: systemic, institutional and individual. This output primarily addresses individual level capacity building. Capacity development at the systemic level involves creating enabling environments in which individuals and institutions work. This includes economic, policy, legislative and regulatory frameworks, mechanisms encouraging responsible management, as well as the interactions between the different levels, which affect the ability of the whole system. These capacity strnegthenin needs will be addressed through outputs 1.1 (legislation), 1.3 (PA system strategy), 1.4 (PA system finance), 2.2 (Resource use governance) and 2.3 (PA-related tourism development plan). Institutional capacities relate to the performance of an organization as a whole, its means of operation and capacity to adapt. Building institutional capacity refers to physical improvements (e.g. infrastructure and equipment), clarification of roles and responsibility, structures and reporting relationships, procedures and communication. Institutional capacities are strengthened through outputs 1.1 (creating the entity dedicated to managing the PA system and clarifying roles of stakeholders in managing the PA system), 1.2 (establishment of GIS to support the management of the PA system) and 2.1 (PA infrastructure, equipment, management tools). At the individual level, capacity building refers to the process of changing attitudes, behaviors and practices, often through training to acquire knowledge and improve skills. It also includes learning through active participation in actions and performance improvement through changes in motivation and accountability.

#### 1.2.1 An accessible information system for monitoring, analysing, mapping and disseminating various information/data across the PA system supports adaptive management of protected areas at system and site levels.

The project will support the following set of activities with the aim of making essential information available to PA managers and the public:

- i) The PA GIS office is set up and operational at system and site levels
- ii) A database specific to PAs is accessible to PA managers and all users and updated
- iii) A website for the PA system provides access to information on the PA system to all users

Details on the above are described in:

Annex 5: Key Component 1 Activities relating to the development of the legal, policy, institutional and capacity development framework for new PA system – under [Data Management](#).

### 1.2.2 Adequate training on various aspects of PA management is provided to key stakeholders and actors involved

This output will build from capacity building initiatives carried out by the OCB, PoWPA and SCORE projects. The EU-financed SCORE project, implemented at the University of Comoros with the support of the University of Madagascar and University of Torino, allowed training 15 Master level students from Comoros in biodiversity conservation and sustainable development, and integrating the programme in its cursus. In 2014, the programme will take place in Mwali to take advantage of the marine park for the training of 20 students. As part of the PoWPA and OCB projects, short trainings were organized for rangers, ecoguides and PA managers in anticipation of the creation of terrestrial protected areas. These courses which have covered a wide range of topics may serve as pilot experiences to develop a targeted program to strengthen the specific skills needed to carry out the tasks of the various actors involved in PA management.

The following sub-activities are being proposed to strengthen the system overall at various level and ensure that the objectives of the project are achieved:

- i) A capacity development plan is elaborated for all actors concerned by the management of the PA system
- ii) The capacity development plan for all actors concerned by the management of the PA system is implemented

Details on the above are contained in:

Annex 5: Key Component 1 Activities relating to the development of the legal, policy, institutional and capacity development framework for new PA system – under [PA manager training](#).

### 1.2.3 Development and implementation of a strategic communication plan

A strategic communication plan for the PA system will address various communication gaps and re-establish a connection between local communities and their PA and also foster ownership of the PA system at the national level. This pertains will be rolled through the development and implementation of a strategic communication plan for the PA system with the full involvement of stakeholders, in particular through partnerships with media and associations, and by learning key lessons from previous experiences, in particular in connection with the establishment and operationalisation of PMM. More details on this is contained in:

Annex 5: Key Component 1 Activities relating to the development of the legal, policy, institutional and capacity development framework for new PA system – under [Communication and outreach on PAs development](#)

**Output 1.3 - PA expansion: A more representative system of PAs emerges, based on a PA system gap analysis and baseline studies, with the formulation of a ‘PA System Strategy’ and the legal gazettal, with the project’s help, of terrestrial PAs and MPAs, bringing protection to approx. 27% of the country’s land surface area (~ 50,525 ha) and to 3.8% of the territorial waters (~ 47,695 ha), indicatively as follows:**

*PAs in the process of being created:*

- Karthala Forest, on Ngazidja with 26,790 ha of primary and secondary montane forests, and a fairly large area of volcanic rock; includes two proposed co-managed Community Reserves within the perimeter (RC Hantsogoma with 946.4 ha and RC Ngubadju with 240.6 ha),
- Expansion of the Moheli Marine Park to include its watershed and Mwali rainforest over 16,170 ha of mosaic vegetation including forests and agro-forestry systems,
- Montagnes d’Anjouan / Mount Ntringui, on Ndzuani Island with 3,813 ha of relict primary and secondary montane forests,
- Community Reserve Îlot des Tortues, on Ngazidja with 450 ha of seagrass and coral reef habitats, with a possibility of enlarging the area to include marine habitats along the northern area of the island,
- Zone du Coelacanth / Baie des Dauphins, on Ngazidja, with a minimum of 7,572 ha of marine area frequented by the coelacanth and high concentrations of dolphins and whales and including a thriving coral reef,

- Bimbini Peninsula / Ilôt de la Selle, on Ndzواني, with some 3,025 ha of coastal marsh and mangrove areas, surrounded by a marine area of seagrass beds and coral reefs,
- Moya Community Forest Reserve, on Ndzواني, with an area to be defined.

The process of advancing with the PA expansion agenda will build on the implementation of the following three steps and sub-steps that will be supported by the project:

- 1) The development and adoption of a strategy for the expansion of the PA system
  - i) The representativity of the PA system is assessed through a gap analysis
  - ii) Cultural and touristic considerations and feasibility are integrated in the strategy
  - iii) The PA system strategy is developed and submitted for adoption
- 2) The drafting of legal dossiers that will be submitted for approval (noting that some drafts already exist and that the actual approval of the texts are under the government's remit)
  - i) Conducting required additional surveys
  - ii) Identification of conservation objectives of individual PAs and validation of delimitations and zonation
  - iii) Drafting of legal texts and due consultations
- 3) The demarcation of sites on the ground.

Details on the above are described in:

Annex 5: Key Component 1 Activities relating to the development of the legal, policy, institutional and capacity development framework for new PA system – under [PA system expansion](#).

**Output 1.4 - PA system finance:** Comoros makes important and tangible advances in addressing the PA finance issue by: (i) assessing the PA system ‘funding gap’; and (ii) starting the implementation of a PA financing plan with the full support from government, donors, private sector and stakeholder communities.

The project will facilitate a process aimed at improving the financial sustainability of the expanded PA system by assessing the funding gap and taking steps to reduce it over the years. This will also include improving the revenue generation aspect of PA finance. The process will engage government, donors, private sector and stakeholder communities in gradually making commitments on shared responsibility for managing the system and contributing to it, including after the end of the project.

#### 1.4.1 Assessment of PA system financial needs and existing financing sources and development of a financing plan

The project will engage a consultant to work with the project team to build a comprehensive model of PA expenditures for both existing and planned PAs in the Union of the Comoros. The process will build from individual assessments at PMM and other key sites as well as establishing projections based on best practices globally. This assessment of the financing need will be complemented with a review of historic and predicted financing available from all sources. The gap between the available financing and financing need will help make the business case for fundraising with the Conservation Trust Fund, to be consolidated through a financing plan.

#### 1.4.2 Establishment of a Conservation Trust Fund

The project will work closely with AFD and the PMM to design a Conservation Trust Fund (CTF) based on best practices and past work accomplished in the Comoros. As per all guidance on the establishment of similar funds dictate, the CTF must be an independent CTF that has government participation and support but does not include a majority of government members in the Board of Trustees. The project will support a national workshop on CTF design and together with co-financing from AFD will sponsor the design and implementation of a fundraising plan to assist the fund with capital acquisition for an endowment. A CTF with a substantial

endowment will be a necessary source of long term financing for the PAs of Comoros until the Union's economy greatly improves or tourism becomes a significant source of PA entry fees. The project will support the establishment of the CTFs Trust Deed, operations manual, and other supporting documents.

#### *1.4.3 Operationalisation and Fundraising activities for the Conservation Trust Fund*

The project will support the formation of a Board of Trustees for the CTF, the hiring of an Executive Director, and initial operating expenses that will allow the Executive Director to initiate fundraising activities. These fundraising activities will include the preparation of a glossy brochure that highlights the extraordinary biodiversity of Comoros and the beautiful scenery that the PAs are seeking to protect. The brochure will contain basic information about the funds' governance and planned activities. Together with AFD, the project may support international fundraising missions by the Executive Director and one additional Board of Trustees member.

#### *1.4.4 Design and implement a pilot Payment for Ecosystem Services program with Energie d'Anjouan (EDA)*

The state company Energie d'Anjouan (EDA) manages several small hydroelectric installations that provide crucial power resources to the local population. Because the Comoros has no oil reserves, it is dependent on imports for most of its energy needs. The hydrological resources – especially on Anjouan – are extremely valuable for the local economy. Currently, the forests in the watershed are subject to increasing degradation and overexploitation. The EDA is interested in seeking a financing mechanism that supports forest restoration and protection in the key watersheds that feed their power installations. The project will work with EDA to establish a payment for ecosystem services (PES) system to support improved forest and watershed management.

### ***Component 2: Site level PA operationalisation***

128. Under this Component, the project will work on four main fronts: (1) PA management strengthening at the site level; (2) improving resource use governance on sites and around them; (3) developing a tourism plan linked to PAs to optimize the contribution of tourism to conservation at the site level; and (4) developing and implementing a support programme for a PA-friendly livelihoods.

129. The following sites will be directly co-supported by the project: Karthala, including 2 community reserves (CR); Mt Ntringui; Turtle Island; Z. Coelacanth/B. Dauphins; Bimbini/de la Selle. Other sites, namely PMM & Moheli Rainforest and Moya CR, are receiving significant financial support from AFD and NGO Dahari respectively. The project will co-support them through technical assistance for their inclusion in the PA system and possibly critical operationalization activities to be more closely defined at project inception.

#### **Output 2.1 - PA management is strengthened at the site level so that individual PAs become more effective 'biodiversity storehouses'.**

The project will work at site level to ensure that PA strengthening actions will be implemented both in the existing PA (Moheli Marine Park, including the terrestrial part of Mwali Rainforest), and also the new proposed PAs and MPAs (Karthala Forest<sup>56</sup>, Mont Ntringui, Moya Forest, Ile aux Tortues, Zone du Coelacanth / Baie des Dauphins, Bimbini Peninsula / Ilôt de la Selle). The aim is to improve PA management effectiveness at site level. This work will begin in anticipation of the full gazetting of new sites. The project will build from the achievements under the OCB and PoWPA/CBD projects which concentrated on terrestrial PAs. It will also work with the partners that are already making progress in supporting PA management in different ways on these sites (e.g. IFAD, AFD, IOC, FAO, GEF SGP and

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<sup>56</sup> Including the two community reserves within it (Hantsogoma and Ngubadju).

several local CSOs such as the Association for the Protection of the Gombessa, and local committees established by the OCB and PNDHD projects, among others). The GEF intervention will be catalytic in this respect.

In a first instance, the work at hand may include the creation or refurbishing of essential infrastructure for operations of PAs, the provision of equipment and deployment of staff to sites (the latter in conjunction with activities under Output 1.1). The work will be undertaken in priority sites where the process for creating PAs is the most advanced, ie for Karthala forest, Mount Ntringui, and Mwali rainforest to be annexed to the PMM. The work will be done progressively in other sites, once the choice and delimitation of individual sites have been validated by the gap analysis and integrated into the strategic policy document for the PA system (Output 1.3).

### *2.1.1 Infrastructure essential for PA operation is built or renovated*

Management units for each protected area will have workspaces and equipment essential to be able to fulfill their functions. Whenever possible, arrangements will be negotiated to use existing buildings based on a long-term lease or other mutually beneficial arrangements. Where needed, office/working space will be renovated, based on a realistic needs assessment. When it will not be possible to use, rent or renovate existing buildings, new buildings will be constructed to provide adequate office space for the PA management unit, common workspaces at the disposal of partners, volunteers, trainees, visiting scientists, and a reception area for visitors to the PA.

The PMM management unit has adequate working space and equipment necessary to perform its duties; therefore the project will focus on buildings for the new PAs. Existing buildings could be suitable for the purpose in 3 sites: the Karthala forest PA, the Coelacanth zone/Baie des Dauphins MPA and the Ilot des Tortues Community Reserve. Budgetary reserves were made in this project for rehabilitating infrastructures, Government and co-financiers will complement this allocation according to needs.

A PA management infrastructural development and renovation assessment will be carried out during the project's inception phase with support from service providers (engineers/architects). This will apply to both central office space in the capital and at site level.

In the following sites, the project will negotiate arrangements with local communities for the use of existing buildings which size and location are appropriate for their use as office for the PA management unit and visitor centre:

- At Nyumbadju on the edge of the forest of Karthala, a colonial house of 12 m x 8 m owned by the community of Djoumoichongo was recently renovated with the support of a UNDP-GEF SGP \$50,000 grant to the Steering Committee of Djoumoichongo which is a village near the proposed PA. There is no electricity or water supply. It is accessed via an unpaved but passable road with a four-wheel drive.
- In Itsoundzou at the center of PA proposed for the coelacanth zone, the Association for the Preservation of Gombessa manages the House of the Gombessa which was built and equipped with a support of \$45,000 from UNDP-GEF SGP. This concrete building of 12 m x 16 m includes a large exhibition hall and premises, and has furniture and solar panels and electricity. Located near the main road, the site is easily accessible.
- On the coast, 1 km from Ndroudé village and 300 m from the *Îlot aux Tortues*, 3 bungalows and a 12 m x 8 m wooden building including a large multipurpose room were built with the support of \$27,000 from UNDP-GEF SGP awarded to the *Association Ndroudéenne d'Échanges Culturels et de Protection de l'Environnement*. The building has a solar panel but there is no water supply or sanitation. It is accessed via a passable dirt road.

### *2.1.2 PA sites are equipped*

The basic equipment needed to manage individual PAs will be identified for every site, adjusting transportation requirement according to the extent of the area to survey. This will consist in the acquisition of the following equipment:

- vehicles (one for each PA / boats for MPAs / motorcycles for rangers);
- uniforms / equipment for rangers;
- survey and monitoring equipment: GPS, binoculars, camera (for PA headquarters);

- first aid equipment (for PA headquarters/visitor centre);
- communication equipment for PA staff and rangers: cellular phones allowing rapid information dissemination about incidents or illegal activities (no need for radio equipment as networks cover all islands);
- office equipment for PA central unit and for (basic furniture, desk computers, printers, scanners).

### 2.1.3 PA management plans are developed – and implemented

Building on the 10-year experience of the PMM, including the 2012 management plan, and in close collaboration with the PMM management unit and with the AFD project, outlines and guides will be elaborated to meet most recent international standards for the preparation of all management tools, including a 5-year management plan and financing plan, annual work plan and budget. These guidance documents will specify procedures and requirements in terms of stakeholder's participatory mechanisms and structures, background and up-to-date information, identification and analysis of issues (threats / conflicts), establishment of objectives and identification of priority actions for achieving objectives. The 5-year management plans will integrate the participatory zoning and the regulations regarding access/use to areas and resources in each zone developed through the negotiations for the collaborative management agreements under Output 2.1.6. Procedures will also be defined for the establishment of PA governance structures for collaborative management. The use of these tools (outlines and guides) by all PA management units will help them to produce documents and implement procedures that meet best quality standards and Comoros needs, while minimizing the need for supervision by the central unit dedicated to the PA system.

The project will support the establishment of PA collaborative management committees for every site, working with the structures established by previous projects such as OCB's village-level CODDs (guidance committees on sustainable development) and their federative structures (CODD-Zone) for terrestrial PAs (Mwali rainforest, Karthala forest and Mount Ntringui forest), the structure established by the PNDHD for the Bimbini peninsula, the Association for the protection of the Gombessa for the Coelacanth zone, and village associations for community reserves.

The project will support PA governance structures to follow procedures and lead negotiations to elaborate the 5-year management plan for each site (including the financing plan and surveillance and monitoring protocols) as well as the drafting of annual work plans. The supervision of the central unit dedicated to the PA system will, among other things, ensure the consistency of PA regulations with national regulations in force. The participation of island-level authorities in charge of environment and land-use planning, including communes and Rural Centres for Economic Development in the negotiations will ensure the compliance and integration of these plans with island-level land and resource use planning.

At each site and according to needs and local conditions (including the size of the area and the population of affected communities), a PA Consultative Forum will be established and will meet each year to discuss the implementation of the PA management plan. The PA manager (*conservateur*) will chair these discussions, together with the Community Engagement Officer, and the project will support the organisation of these meeting from a logistical and substantive point of view to ensure due process and follow up.

GEF funding will be sustainably withdrawn as PA governance structures become operational and better funded. The management plans will be an integral part of the decrees of creation of PAs.

### 2.1.4 Implementation of ecosystem management in sites: e.g. strict conservation of critical habitats and cost-effective restoration of others where needed (including clearing of Invasive Alien Species)

Based on ecological assessments, mapping and zoning, the project will support the PA management units to initiate the ecosystem management actions identified as part of the PA management plans. Areas requiring strict protection may have access restricted. Critical areas that are degraded or invaded with Invasive Alien Species (IAS) will be gradually restored. These actions will be complemented with the role of rangers to disseminate information on regulations regarding access to certain areas and resource use, and eventually to enforce these regulations. Agreements for PA collaborative management with local village community associations will be developed and implemented.

PA management units will take the leadership of these actions, including information on the outline of the management plan and mobilization of island and local partners for the implementation of actions planned for the current year, including reforestation, recommended actions for invasive species, coordination of rangers and

forest/environmental/coastal brigades, mobilization / recruitment of additional staff, and community action for environmental clean-ups and reforestation, and participatory monitoring.

#### *Creating green fences around terrestrial PAs*

The remaining natural forests in Comoros belong to the State domain and constitute the majority of the rare land reserves of the islands. Pressures to meet the needs for new agricultural plots and for wood are continually increasing. Forest encroachment by planting trees that minimally define a plot is still the most common practice to appropriate land and, although this traditional practice is respected among farmers, those who cultivate plots at the periphery of the forests are most likely in illegal, thus precarious, situation. Such a situation is not conducive to the adoption of work intensive practices for sustainable land management. Actually, inappropriate agricultural practices can be seen around these areas such as furrows parallel to the slope and crops on steep slopes. Ensuing soil degradation and erosion force farmers to continuously capture new plots at the expense of the forest.

To protect what remains of natural forest while meeting ever increasing needs for fuel wood, fodder and food, the project will support farmers to secure their occupation of the land outside of protected areas and improve their yield. The project proposes to reintroduce trees in the plots located at the periphery of the forests by enclosing them and, gradually, to form a protective perimeter of the forest. As a result, the farmers who have valued their land and secured the right to use it will become its guardians and, in the medium term, this green fence will contribute to maintain forest regulatory functions and ecosystem services. As stated under output 2.2, negotiations will be conducted with the farmers using plots in the public domain and with the owners of private land to develop the land and reintroduce trees in the plots at the periphery of forests according to precise specifications.

As part of the project on adaptation to climate change, a list of resilient species useful for reforestation was prepared. Many of these species would be suitable to reforest the perimeter of plots while providing several benefits to the farmers. Many species have the ability to hold and enrich the soil with nitrogen-fixing roots (legumes) or with a litter rich in organic matter, which are desirable properties in areas where farming practices have made soils vulnerable to erosion, in addition to being useful as medicinal plants, forage, timber, for woodwork and as wood fuel. The following species have such properties but with different ecological requirements: *Acacia auriculiformis*, *Glyricidia sepium*, *Albizia Lebbeck*, *Calliandra* sp., *Leucaena leucocephala*, *Samanea saman*, *Chrysophyllum boivinianum*. The project will also promote the use of endemic tree species valued by farmers for reforestation of humid areas such as *Khaya comorensis*, *Ocotea comorensis*, *Weinmannia comorensis*, and *Tambourissa leptophylla*. The vulnerability status of these endemic species is not determined in the IUCN Red List, but their rarity in Comoros is due to deforestation for agricultural expansion and the fact that they are selectively exploited for certain specific uses, namely woodwork. The project will also respond to the preferences of farmers by providing a number of fruit species such as *Anacardium occidentale* whose fruits can be a significant source of revenue. All species that are candidates for reforestation / forest rehabilitation will be subject to safeguards to avoid deleterious impacts on vulnerable ecosystems.

The project will establish agreements with private nurseries on each island for the production of seedlings that will be distributed to farmers along with specifications including silviculture guides and appropriate silvicultural practices. The Rural Centres for Economic Development will provide technical support to help farmers to identify combinations of tree species useful for soil stabilization and improvement, endemic forest species to reintroduce at the periphery of forests and species providing other benefits such as fruit or forage.

#### 2.1.5 PA surveillance is ensured with the participation of environmental associations and riparian communities

Following the principle of collaborative management in the Comoros, surveillance is primarily a self-control mechanism within communities according to the rules set out in the management agreements that have been developed with their participation. In this respect, the main role of rangers will be to inform and recall PA zoning and associated rules to all members of the local communities and to give warnings to offenders. This type of mechanism was developed with the participation of fishermen from all villages in the Coelacanth zone and is reported to be well established. The same approach is followed around the Bimbini peninsula with the participation of village associations.

Systematic surveillance is also mainly the responsibility of rangers (*écogardes*) who will be undertaking regular surveys through specific zones of the PA according to a surveillance program determined by the PA

*Conservateur*. The surveillance program will be constantly adapted to focus on areas where most significant threats to biodiversity are reported and will be integrated, as far as possible, with the monitoring program. Clear enforcement guidelines and procedures will be identified and communicated to all actors involved in surveillance and enforcement for every PA. All occurrences of activities that fail to comply with the rules of the PA will be communicated at once, as long as rangers' safety is not at risk, noted in a field sheet and later recorded in the PA database. Members of the local communities will be invited to participate to these surveys on a voluntary basis. Joint unannounced tours will also be organized with the police and agents of the National Directorate of Civil Security.

The PA management units will establish collaboration agreements with Mwali's forest brigade and Ndzuanu's environmental brigade to participate in the surveillance of protected areas, and with the surveillance system recently implemented at the National Directorate of Fisheries Resources to strengthen the surveillance of boats entering MPAs.

### 2.1.6 Cooperative agreements with local CSOs for PA collaborative management are effective and joint PA management committees are supported

Meetings will be held with local communities affected by the establishment of the PA to promote their commitment to a collaborative management process, inform them of the role expected of them in the process, the benefits and responsibilities that this entails, know their expectations and concerns and verify their interest to engage in it. It will be important to give the time and resources needed for these awareness meetings to allow communities to engage in the collaborative management process in a fully informed manner, strictly voluntary, and without inappropriate / undue expectation. A commitment letter will be signed by the authorities of each village to signify their consent to participate in the various steps leading to the creation of the PA and the PA management when they will judge they have sufficient information and that the conditions are adequate.

An outline for collaborative management agreement between the PAs riparian communities, PA management units and administrative authorities responsible for the environment, inspired by the co-management agreements of the PMM, will be developed in which actors recognize the legitimacy of their respective rights to manage the PA and agree to subject such management to specific conservation objectives. This model will be developed in close collaboration with AFD project team and the PMM management unit. In addition to presenting the procedures for PA management on the whole, a collaborative management agreement will specify (i) the spatial scope of the agreement (regarding right of access, resource use, surveillance and monitoring), i.e. what land/sea area in the PA and in the buffer zone are covered by a specific agreement with a village community, (ii) the regulations on resource use, i.e. what resources can be used/collected and the conditions under which traditional uses may be carried out by community members (what, how, how much, and when), which must be consistent with the national regulations in force, namely the legislation on forest management, the fisheries code and the order for the protection of wild species (specifying integrally and partially protected fauna and flora species), (iii) their participation in the surveillance and monitoring of these uses, and a communication protocol with village and PA authorities in case of an incident or failure of compliance to the agreement by a member of the community or by an outsider, (iv) the procedures for conflict resolution (at the community level and with the support of the authorities and police forces) and penalties (to be uniform across the PA) in cases of unresolved conflict and non-compliance with the agreements, (v) participation in the evaluation of the PA management.

Collaborative agreements will be developed according to the general outline and following this process: (i) meetings for community information and awareness and signing of commitment letters (as indicated above) on the community agreement and involvement to the process of setting up the PAs; (ii) PAs riparian communities designate members or association of their community which will be responsible for negotiating the collaborative management agreements on their behalf, with the support of specialists in the entity dedicated to the PAs system; (iii) collaborative management agreements between PAs riparian communities, PA management units and administrative authorities in charge of the environment are negotiated with the support of the entity dedicated to the management of the PAs system which will ensure the consistency of the collaborative rules on resource use with the national regulations; (iv) a copy of the management agreement must be deposited in the village in an accessible place for free consultation by any member of the community.

In every site, the community engagement specialist (within the PA management unit) will support the operations of the PA collaborative management committee by providing training on their role and responsibility with the community in terms of consultation, information and representation of their interests, and coaching them throughout the first year of operation.

### 2.1.7 Long-term ecological monitoring program to assess the management effectiveness of the PA system

#### i) Elaboration of a monitoring program to support the adaptive management of PA at site and system levels

Indicators. The project will support the identification of indicators for the long-term monitoring of biodiversity and ecosystem services for each PA and for the PA system as a whole. A first set of indicators is proposed in the project logical framework according to the conservation targets of the system, and additional indicators will be identified to better reflect the specificity of each PA once specific conservation objectives will be defined. Indicators will allow monitoring target biodiversity elements but also the major threats affecting them. In addition, the monitoring program will include socioeconomic indicators to assess the impact of the PAs on riparian village communities.

Identification tools. Numerous articles and monographs have been published on the terrestrial fauna and flora and a few marine taxons of the Comoros (e.g. sea cucumbers) and even a sound guide to the nesting birds of the Comoros<sup>57</sup>. Illustrated practical and succinct guide booklets or plates will be developed on the basis of this literature to facilitate the identification and monitoring of biodiversity in PAs, for all participants in the monitoring program, including PA visitors willing to volunteer in the program. These tools will also be useful to support the training of actors involved in monitoring. Scientist project partners will be consulted and, if such tools already exist, the project will support their reprint.

Monitoring program and protocols. The project will support the elaboration of an integrated monitoring program for the PA system including indicators, appropriate measurement methodology (what, how, where, how often, by whom, recording) and establishment of permanent monitoring stations, transects and routes. This program will be developed by the scientists of the entity dedicated to the PA system and the PA *Conservateurs*. A specific version will be developed for each PA and adapted according to its conservation priorities. Where information is not already available, required surveys will be undertaken to identify indicators' baselines. Rapid assessment surveys were conducted in the terrestrial PAs (Karthala forest, Mount Ntringui and Mwali's rainforest) for birds, mammals, reptiles, and butterflies. Such inventories, conducted once as part of the PoWPA project, will be repeated periodically in both winter and summer (or dry and rain) seasons as part of the long-term monitoring program. The monitoring of the effectiveness of PA management will also use the GEF tracking tool for which the baseline was established during the project preparation.

Integration of existing data. Coral reefs, sea turtles of the PMM, Livingstone fruit bats and forest (area) are the only resources that have been monitored over several years, though not steadily. Long-term monitoring will build from the results of previous monitoring efforts including the monitoring of Livingstone fruit bats by Action Comores from 1993 to 2008, the monitoring of coral reefs starting in 1998 in various sites, the monitoring of green turtles nesting tracks starting in 2000 in the PMM and the latest forest inventory conducted in 2008-2011 with FAO's support.

Monitoring of tourism impact. Key sensitive/vulnerable resources will be identified for each PA (including local communities, cultural/religious/historical assets and biodiversity) and closely monitored in the zones allocated to tourism, as part of the PA monitoring plan. Results will be disseminated to all entities involved in the management and supervision of the system and used to regulate access to PAs and to specific sites within PAs, to strengthen enforcement or modify regulations regarding tourists' activities and behaviour.

#### ii) Implementation of the long-term ecological monitoring system

Collaboration agreements and coordination. The biodiversity experts (marine and terrestrial) of the central unit dedicated to the PA system will be in charge of establishing and coordinating effective and stable partnerships by seeking mutually beneficial agreements with educational and research institutions, environmental organisations, visiting researchers, and other voluntary partners (participating tourists<sup>58</sup>, divers and diving clubs, bird watchers, whale watchers) for the monitoring of resources. These experts will also be in charge of following up the execution of such agreements (including the sharing of knowledge and data). Whenever possible, monitoring activities will be combined with regular surveillance routines conducted by the PA rangers during which the occurrence of certain target species will be recorded (species, picture, time, date and GPS coordinates). The GEF

<sup>57</sup> Herremans M. 2002. Sound guide to the nesting birds of the Comores. Audio CD. Royal Museum of Central Africa.

<sup>58</sup> The association Moidjio is already involving voluntary tourists in field research and monitoring activities.

will finance regular ecological monitoring of sites, until effective partnerships are established to provide these services.

Participation of local communities. The project will also establish collaborations with village associations that have shown interest in preserving their environment such as the Association the Protection of the Gombessa (Coelacanth zone), Ndroudé Association for Cultural Exchange and Environmental Protection (Île aux Tortues CR), development and environmental associations in Bimbini (such as OPAS and UMAMA NGO), and the Committee of Djoumoichongo (on the Karthala) and Hantsogoma village association that wish to establish community reserves as part of this project. Lists of all active associations and NGOs involved in environmental issues on each island were made during the project preparation phase, indicating year of creation, mission / objectives, and main achievements. These lists (available in a technical report) will help identifying other relevant associations that may have the motivation and experience to contribute to monitor the resources that matter to them. These collaborations will be the object of renewable agreements providing detailed survey and reporting protocols and support or compensation contributed by the project (such as small equipment and transportation allowance). The monitoring of Livingstone fruit bats in Ndzuani and Mwali will be entrusted to the NGO Action Comores through an agreement including detailed survey and reporting protocols and the support or compensation provided by the project. This NGO counts on a network of trained enumerators (34 in Ndzuani and 14 in Mwali) in villages nearby bat roost sites, and has been monitoring Livingstone fruit bats since 1993. Monitoring data will be handed over at fixed periods to PA management units who will be in charge of integrating it in the PA databases.

Training. Hands-on training on the execution of simple monitoring protocols will be provided by experts from local environmental NGOs in their own field of expertise, such as AIDE (coral reefs), Action Comores (Livingstone fruit bat), Moidjio (whales, dolphins, marine turtles, seagrass), and by experts from University of Comoros and CNDRS. Expertise from abroad will also be brought o bear through competitive processes. A budgetary reserve for the purpose is included in the project's budget.

Permanent sampling locations. The project will support the establishment of permanent scientific stations, transects and routes using GPS coordinates to monitor vegetation or animal populations and allow comparisons over time. Permanent transects have been used for some years to monitor coral reefs in the PMM and will be established in the new MPAs of Ndzuani and Ngazidja, learning from Mwali's experience.

METT. The monitoring of the effectiveness of PA management will be undertaken on yearly basis (as part of the annual reporting) using the GEF tracking tool for which the baseline was established during the project preparation. As far as possible, and at least in preparation for the mid-term and final evaluations, this assessment will be conducted following the same participatory approach as for establishing the baseline.

Data storage. Data will be stored in PA databases by the PA management units and integrated in the PA system database, to be retrieved periodically to calculate statistics, produce graphs or maps at site and system levels, to review the effectiveness of actions in achieving objectives and support the adaptive management of PAs at site and system levels.

**Output 2.2 - Resource use governance:** Clarity on land tenure for terrestrial PAs and on seascape use-rights for MPAs ensures the ecological integrity of protected sites, with effective mechanisms for mediation and conflict resolution in place and operational in target PAs/MPAs (including surveys and negotiations).

Population pressure has pushed agricultural expansion to the limits of accessible surfaces. Deforestation for the clearing of agricultural plots is only constrained by steep relief in areas where soils are highly vulnerable to erosion. At the same time, some lands are undeveloped because of the lack of clarity of their tenure status, due to the complexity of the rules that govern land tenure in the Comoros. Landless farmers have no other option but to continue clearing what remains of the public forest and squat the cleared land to cultivate without adopting sustainable practices to protect and retain soils, which aggravates the problem of erosion.

As part of the work to develop collaborative management agreements (Activity 2.1.6), the project will establish effective mechanisms for mediation and conflict resolution in target PAs/MPAs as an attempt to clarify land and resource use rights for terrestrial PAs and seascape and resource use-rights for MPAs.

Once the compliance of resource use rights is verified with the legislation in force, namely the laws on Environment, Forestry and Fishing, the clarification of resource use rights inside the marine and terrestrial PAs will allow refining and finalizing zoning, including the delimitation of strictly protected zones and buffer zones where sustainable use of resources will be allowed under negotiated conditions. The final zoning will be tied to the village collaborative management agreements and integrated in the management plan of each PA.

The project will support the development of a system to resolve disputes related to land/sea and resource use rights through consensus-based public recognition of clearly defined and publicized rights. This system will take into account the legal, religious and customary systems of land rights as well as the legislations on forest management and on fisheries and operate in consultation with all concerned stakeholders to ensure the transparency and acceptance of the resolution. The project will pay attention to avoid loss of entitlement of women through any intervention aimed at clarifying land and resource use rights.

### 2.2.1 Land/ sea and resource use rights investigations

Land/sea tenure and resource-use rights surveys will be conducted for all priority sites (likely to be the core zones of PAs) and immediate peripheral areas (buffer zones) for marine and terrestrial PAs.

Land tenure and resource use rights surveys will imply a preliminary consultation of official land registers to determine, whenever possible, who owns what rights in the priority conservation areas and in the plots that surround it. While ascertaining the status of remaining forest areas might be quite straightforward (mostly belonging to the public domain), the peripheral areas where community groups or members have cleared cultivation plots will require field surveys and participatory mapping. The project will use geomatic technologies to map land/sea use systems and claims through participatory mapping. Land delineation should rely as much as possible on visible, recognizable physical features to mark boundaries such as a watercourse, tree hedges or fences or ditches, as well as ecological features. The resulting maps will be at the disposal of communities who could use them to secure land titles or land use rights and to deal with decision-makers and land-use planners. Land use systems and land claims/disputes will be mapped for all concerned villages and the latter will be used as pilot sites to develop dispute resolution systems.

Marine resource use right surveys. The identification of resource user rights in the marine environment will imply a preliminary investigation with the Minister in charge of Fisheries and Aquaculture to determine whether certain areas have been allocated for fishing or aquaculture purposes or subjected to fishing regulations or prohibitions. The identification of informal rights in the open access coastal and marine areas will be based on interviews with local communities in coastal villages. Preliminary investigations in fishers' villages have shown that fishing areas are clearly delimited and well known among fishers' communities and, in some cases for which management rules have been adopted on a voluntary basis and are enforced, though with limitations, by local communities themselves.

### 2.2.2 Negotiations in view of securing long-term use rights

According to the status of plots as identified in the surveys, negotiations will be conducted with the authorities and plot users (farmers) in the public domain or with the owners of private land. For plots that are in the public domain, the project will support the establishment of negotiating committees at village level under the authority of the Mairies to develop formal agreements that allow farmers to occupy a well-defined plot for a specified duration in the long term (of the order of 15 years) on condition that the land is developed according to precise specifications (*cahier de charges*).

For private land, the project will build on the successful PNDHD's initiative to secure land tenure in rural areas based on the principle of sharecropping which was developed to address access to land by the poor to reduce pressure on natural forests. Under the guidance of a national expert, an operation was initiated in 2010 in Mwali to secure access to a private land to the benefit of landless people. That land was undeveloped before the intervention. Land security operation was carried out at two levels: i) sustainable security of the land owner through the recognition and acknowledgment of his property rights; and ii) sustainable security of farmers through a framework agreement for management rights and operating agreements. This operation took account of the modern, religious and traditional laws governing land tenure. The various stakeholders (government,

island, communal and village authorities, civil society, religious leaders), as well as land tenure operators (domains and topography services) have endorsed this approach for securing land tenure and were involved in formalizing the securing process. In the case of formally registered private land, the project will support representations to the land owner to promote the benefits of developing the land in accordance with the principles of sustainable land management, and of reintroducing trees on lands. All the relevant safeguards for ensuring that consultations with affected stakeholder take place before any decisions on change of land-use and no involuntary resettlement of resident populations will takes place in the realm of the project will be apply.

**Output 2.3 - Tourism: A realistic plan/strategy for developing sustainable eco-tourism activities in PAs/MPAs (or linked to them) is put forward and implemented**, with full support from PA co-managing communities and investors.

The project will engage with PA co-managing communities, government, partners, and investors to explore possibilities of sustainable eco-tourism initiatives linked to PAs that will maximize the potential benefits to local communities while preserving biodiversity values. Several ongoing initiatives converge at supporting the Government's efforts at developing tourism in the Comoros and especially ecotourism or nature-based tourism linked to the PA network including UNDP's program "Development and promotion of responsible ecotourism in the Union of Comoros", EU-funded SmartFish Programme to support the promotion of ecotourism, and the definition of a Master Plan for tourism development in the Comoros supported by the World Bank.

### *2.3.1 Environmental and social guidelines are developed for the development of tourism linked to PAs.*

Tourism could become a significant source of income and help create local jobs. It can support the protection of biodiversity, as local communities realise the value of their asset and want to preserve it. However, the development of tourism can also be an additional threat and compromise the preservation of resources that justified the creation of a protected area. Tourism development and operations may threaten the natural resources in PAs in various ways: wildlife collection (birds, reptiles, shells, butterflies, orchids, etc.); collecting / cutting / burning wood on camp sites; littering; noise / disturbance of wildlife; breaking corals when diving; boating too close to marine mammals, etc. Setting up facilities and building visitor centers may also have a negative impact on resources and on landscape.

Taking account of the proposals and analyses made as part of the SmartFish, WB and UNDP's projects on ecotourism development, and any other tourism initiative, an analysis will be conducted under the supervision of an international consultant following a strategic environmental assessment approach to ensure that innovations and investments proposed for the development of tourism in or linked to PAs and MPAs do not cause unacceptable environmental and social impacts (cumulative or specific) and that adverse impacts will be avoided by improvements in the design of specific activities or interventions. The main expected result is the identification of the main lines of the strategic plan to implement sustainable tourism across the PA system and a series of thematic guidelines or best practices for all aspects related to the development and operation of ecotourism related to PAs.

This analysis will instruct a series of strategic decisions that will form the backbone of the strategic plan for the development of tourism linked to PAs:

- to define the orientations of development of tourism in relation to the PAs (e.g. promote fair and responsible tourism, luxury, backpack or intermediary, seaside, cultural, nature or combination; target in priority national, regional or international markets, etc.);
- to guide the choice of alternatives, optimize the design of value chains to support or develop, optimize the choice of technologies and implementation of projects (e.g. greening of existing or new infrastructure to reduce economic and environmental costs);
- to guide decisions in terms of operationalization, development and infrastructure to set up, to optimize their benefits and mitigate their potentially harmful effects.

The analysis will allow integrating environmental considerations early in the process of decision making related to the identification of future ecotourism investments and their implementation. Constraints will be identified, especially in terms of capacity, to provide a tourist experience that is profitable for village communities, high

quality for customers, and safe for the natural and cultural heritage. These capacity needs will be integrated in the capacity development plan. Moreover, the participatory approach, involving all relevant stakeholders in decision-making, will contribute to better governance and ownership of tourism development.

This analysis will be achieved by identifying key issues through a matrix of interactions between the major aspects of the development and operation of ecotourism projects/activities, and the different variables of the physical, biological and human environment. Aspects of the human environment and socio-economic issues will be addressed separately for men and women and, where useful, for youth. The aspects of the development and operation of ecotourism related to PAs may include, but are not limited to:

- construction or renovation of buildings (location, visual impact on landscape, choice of materials, design reflecting the local culture and environment)
- setting up recreational facilities
- transportation infrastructure (roads, trails, mooring buoys, landing platforms, etc.)
- visitors' behaviour when visiting wildlife habitats in terrestrial and marine environments
- water and energy provisioning and management
- waste management
- risk management and public safety
- social and economic impact on local communities.

As much as possible, the environment of intervention areas will be documented by exploiting the existing knowledge, documents and databases, and complemented with site surveys to address key knowledge gaps. Studies on the impacts of tourism development in the island countries in the region will be used to leverage existing knowledge from analyzes already conducted in the assessment of potential impacts of different forms of tourism in countries experiencing somewhat similar context, opportunities and constraints. The identification of best practices will draw on existing documents for several aspects of tourism development, infrastructures and activities.

Concessioing is also a promising modality to explore, though not yet tried in Comoros. At least one of the CBOs that is currently managing a community reserve in the process of being created has expressed an interest in concessioing out eco-tourism lodging facilities, recognising that their capacity to manage such establishments is limited. The project will encourage this attitude in other sites where applicable.

### *2.3.2 A strategic plan for the development of sustainable tourism across the PA network is elaborated.*

The project will support the elaboration of an integrated plan to optimize the development of a 'signature' tourism in the Comoros valuing the specificity of its natural and cultural heritage. The plan will build from the results of the consultations and analysis conducted under the activity 2.3.1, including the identification of options that are both culturally and environmentally sensitive for the various aspects of tourism development and operation in connection with PAs. The tourism development plan will include the zoning of each PA of the network, identifying the areas open to tourism and recreation, general regulations on visitors use, and activities-specific regulations. The tourism plan will include a training program for all PA staff and partners involved in touristic activities and provide for performance assessment. The tourism interventions and activities related to each PA and the corresponding precautionary measures identified will form an integral part of the individual PAs management plans.

The plan will identify avenues to maximize economic and social benefits. Ecotourism may stimulate the economy, create jobs, and reconcile conservation and sustainable development by contributing revenues for the PA system:

- from entrance fees and rights of access to sites that may contribute to the maintenance of the sites,
- from concession rights: a contribution from individuals or companies that provide services to visitors, paid in exchange for the right to charge users of public services; in this type of agreement, the government retains control over the type of development to achieve and may require specifications (use of local labour and local products, sale of local products/handicraft);
- from hotel taxes;

- through campaigns for volunteer donations solicited from tourists and the general public.

The development of ecotourism linked to the PAs may also generate social benefits and help to restore a connection between local communities and conservation objectives as far as they derive significant benefits. The plan will include such avenues as to reserve jobs in priority to local people and arrange for their training, and use a portion of the revenues to develop ways to compensate the people who had to give up another use of the space or resources.

The Plan will clarify all issues related to right of access to the zones open to tourism and recreation within PAs (Is access free or controlled? What areas or uses must be controlled? Who can authorize access to specific areas/resources and under what procedures and conditions (including cost)? How revenues will be distributed?) The plan will define: i) a system for the allocation of permits to ensure transparency and simplify procedures for visitors; ii) rules of transparency; iii) a system to harmonize pricing / collection of fees and other payments across the PA network and within each PA (among villages); iv) a concession policy; and v) clear rules to determine the distribution of revenues between the service provider (individual/guide, association or concession), the PA and the PA system to foster equitable benefit sharing among village communities and other partners while contributing to the preservation of the natural heritage. This information will be widely disseminated through various means of communication, including on the website of the PA system.

**Output 2.4 - Livelihoods:** In collaboration with project co-financiers and other development partners, a **livelihoods programme is developed and implemented for the benefit of PA/MPA adjacent communities** in support to collaborative PA management efforts by these stakeholders

The GEF project's role in such programme will be catalytic vis-à-vis other partners, given that several existing initiatives are already working on livelihoods themes. The project will work with related initiatives aimed at developing ecotourism and sustainable productive activities (agriculture, fisheries, forestry) in the project intervention areas, i.e. within the PAs and in their peripheral areas (i.e. the tourism components of FAO's SmartFish and UNDP's Enhanced Integrated Framework, PNDHD, and others) and focus its support towards livelihood activities that contribute clearly at alleviating threats or pressures on biodiversity (species or ecosystems) in the PAs and peripheral areas. For example, the development of mariculture activities could potentially create incentives to reduce environmental degradation on the coastal area.

#### 2.4.1 *Development of a sustainable livelihoods programme*

##### *i) Identification of priority beneficiaries*

The project will pay close attention to create opportunities firstly for those who bear the opportunity costs of the conservation measures implemented by the project. Although the creation of PAs does not entail any displacement of people, the adoption of regulations for sustainable use of resources or the creation of reserves within PAs (e.g. for remaining primary forest areas) will restrict access to natural resources to a portion of the population, most likely the poorest and most vulnerable ones. The socio-economic surveys conducted under the output 1.3 will provide the necessary basis to identify women, men and youth that will most likely be affected by the implementation of conservation measures.

##### *ii) Assessment of previous efforts to develop income generating activities (IGAs)*

A thorough assessment of efforts made in previous projects (Biodiversity Conservation/G32, OCB, ECDD, UNDP-GEF microprojects, AMIE, AFD supported projects, and any other relevant project) to develop income-generating activities to the benefit of local communities will be undertaken through an open dialogue with the community members who were involved in these initiatives and, to the extent possible, the stakeholders of these projects. This analysis will draw lessons and identify best practices as well as favorable conditions and constraints that have contributed to the success or failure of these initiatives. The results of this analysis will be discussed in a workshop gathering a wide array of stakeholders – from the private sector, development organizations, and members of village communities who were involved in such initiatives – to enrich the reflexion with various perspectives and come up with realistic recommendations for effective and sustainable options. The results of the analytical work and workshop will be put down in a document, as part of the livelihood programme. On this basis, the project will formulate a strategy to effectively support the village

communities to develop sustainable livelihood activities that contribute to alleviate pressures on biodiversity in and around PAs.

### *iii) Identification of livelihood activities*

The project will support livelihood activities that contribute clearly at alleviating threats or pressures on biodiversity (species or ecosystems) in the PAs and peripheral areas. Such activities may include: i) the establishment and operation of nurseries to fulfill, as a first step, the project needs in seedlings of forest species, building from several SGP microprojects, ii) creating alternative jobs for women fishers using *Tephrosia* by supporting the growth of promising local initiatives such as the salt production on Ile de la Selle (Ndzuani), iii) improved honey production, building from OCB project's experience, iv) sea cucumber production, as an alternative to unsustainable fishing practices, building from similar experiences conducted in Madagascar (Toliara's *Institut Halieutiques des Sciences Marines*), v) reintroduction of comorian traditional handicraft such as embroidery to improve the supply of genuine handicraft products for tourists, vi) basket production as a replacement for ubiquitous plastic bags (which could be part of a nation-wide campaign to ban their use) building from existing know-how in Mwali<sup>59</sup>, vii) tourism-related activities such as developing cultural and ecological circuits involving communities cultural demonstrations (e.g. traditional dances and songs), viii) market gardening to provide fresh local products to restaurants and operators of ecotours.

Support to local communities. The PA community engagement specialists will work with organisations specializing in microenterprise development to help local communities to identify opportunities and select acceptable and promising projects. Every project will be supported by a feasibility study based on a realistic assessment of the market, including an assessment of the sustainable availability of required inputs, especially for natural resources (for example, the availability of raphia to produce baskets), and assessment of its social acceptability for local communities.

## 2.4.2 Implementation of the sustainable livelihoods programme

### *i) Establishment of partnerships*

The project will establish a partnership with organisations such as AMIE and PlaNet-FINANCE to support local communities to develop income generating activities and facilitate their access to micro-finance from comorian institutions (e.g. MECK and SANDUK) and other funding sources. AMIE is a comorian structure working in the three islands to support the creation and development of micro and small enterprises and promote income generating activities for vulnerable populations and was created by UNDP and the comorian government in 2000. The mission of the international NGO PlaNet Finance is to fight against poverty by helping populations to develop income generating activities independently to improve their livelihood sustainably. They provide advice and technical assistance to facilitate financial inclusion for the poor and support sustainable development processes integrating suitable financial services. They have been working in Comoros since 2009 in the development of handicraft and trained 120 people in Ngazidja with financial support from EU and the French Embassy and are currently supporting the development of 4 value chains (electricity, processing of agricultural products, ylang-ylang and coffee) with the support of USAID.

### *ii) Support to communities*

The project will support local communities and individuals through i) technical trainings related to selected activities with a good potential; ii) training on establishment and management of microenterprise and financial education; iii) guidance for the drafting of a business plan and creation of an income generating activity; iv) support for the preparation of dossiers for access to microfinancing; and v) support for the inception and implementation of the activity and vi) follow-up of the microcredit reimbursement. The sustainability of local communities' benefits will largely depend on the commitment of communities to ensure the quality of products and services, as well as the prevention of potential adverse effects of the development of tourism on the physical and biological environment and communities themselves.

The project will support the organization of regional fairs and visits between local villages for community to community sharing of experiences and to foster information exchange on best practices and will help communities related to a same PA or within an island to develop their own platform for sharing best practices.

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<sup>59</sup> Such locally made baskets of high quality and robust - although small - are currently available in the House of Ecotourism Mwali.

## INDICATORS AND RISKS

130. The project indicators are detailed in the [Strategic Results Framework](#), which is attached in Section II of this Project Document.

131. Project risks and risk mitigation measures are described below.

*Table 6: Risk Matrix*

IDENTIFIED RISKS AND CATEGORY	IMPACT	LIKELIHOOD	RISK ASSESSMENT	MITIGATION MEASURES
<p><u>FINANCIAL</u></p> <p>The absence of reliable financial flows to the PA system undermines the effectiveness of PA management beyond the duration of the project intervention</p>	High	Very likely	<b>H</b>	<p>UNDP recognizes that approaching the goal of financial sustainability at the PA system level is important, but that this takes time, and that the approach should preferably have a systemic focus, rather than focusing excessively on a single site. All of the best practices on PA finance point out to a multi-modal approach. It is not sufficient to focus only on a trust fund or on government investments in the PA system. One needs to focus both on the cost and on the revenue side of the PA finance equation. With respect to costs, the project's approach is to involve communities in various aspects of site management. This should help offset the costs of enforcing rules on resource use governance and decrease the average costs of site management. There will also be a concerted approach to mobilizing resources from various sources, including by expanding the donor and partner base that co-support the PA system, and by involving the private sector, where there is scope for it. The setup of the project core team, with a senior Chief Technical Advisor specialist in conservation and PA management, will help create the conditions to make this happen. Altogether, the project will establish an enabling framework for the government, donors, NGOs and the private sector to invest according to a focused and coherent plan to maintain a financial flow that will ensure the viability of the PA system beyond the lifetime of the project (Output 1.4). Besides, the project budget is geared towards sustaining the bulk of the costs of the PA system in the next 4-5 years. After that, it is expected that other financial mechanisms will be in place to sustain, if not all, then the bulk of recurring costs of PA management. These will include other financial mechanisms including increased government operating budgets and a conservation trust fund established through baseline investments. The analysis of PA financing needs carried out at PPG stage has shown that this is feasible. Without reliable revenue streams to PAs, the risk to the sustainability of conservation results would be</p>

IDENTIFIED RISKS AND CATEGORY	IMPACT	LIKELIHOOD	RISK ASSESSMENT	MITIGATION MEASURES
				high. Yet, through the multimodal and system-wide approach to addressing financial sustainability and management capacity deficits, and in combination with baseline investments contributing to sustainability, this risk is mitigated.
<p><u>POLITICAL</u> Land tenure insecurity (due to the superposition of civil, religious and traditional laws) in areas designated for the creation of protected areas may become a barrier to the actual establishment and operationalisation of these areas and for the adoption of new, sustainable practices.</p>	High	Likely	<b>H</b>	Tackling the land tenure problem at the level of regulations may require solutions at systemic level that go beyond what the project is designed to impact on. However, a project output (2.2) is designed to bring clarity on land tenure issues with respect to terrestrial PAs and to introduce effective mechanisms for mediation and conflict resolution in target PAs, including negotiations leading to the establishment of formal long term user right agreements with clear specifications. The project will equally invest in the participation of all relevant stakeholders in the discussion PA gazettal decrees and in the development and implementation of agreements for the collaborative management of natural resources. Furthermore, the project will support the implementation of the forestry law, which provides some useful guidelines on land-use and tenure. All the relevant safeguards for ensuring that consultations with affected stakeholder take place before any decisions on change of land-use and no involuntary resettlement of resident populations will takes place in the realm of the project will be apply.
<p><u>INSTITUTIONAL</u> Institutional capacities are inadequate to manage the protected area system, especially after the expansion of the estate. Constraints of hiring in the public service do not allow the hiring of the staff required to the institutional development envisaged in the project.</p>	High	Likely	<b>H</b>	The project provides for the development of national capacities in the management of protected areas, including the emergence of a more effective PA management institution. This will also involve the development of skills of its staff, of PA site managers, relevant ministries and agencies, local governments of riparian communes, local CSOs representative of riparian communities, and (if applicable) concerned tourism operators. All these partners will provide a network of trained actors able to participate in the process of co-management of protected areas advocated in the Comoros. Furthermore, the project will engage in an institutional restructuring process in order to boost national capacity. (Outputs 1.1 and 1.2) This risk could become critical if the project does not have a successful start up by year 2 with the bulk of procurement and recruitments concluded and a solid plan for implementing the strategy. International assistance will be brought to bear to ensure that this is the project has a successful upstart.
<p><u>FINANCIAL</u> Government and local</p>	High	Likely	<b>H</b>	The project will establish a dedicated entity to manage the PAs system which shall, among other things, see to the compliance with laws and

IDENTIFIED RISKS AND CATEGORY	IMPACT	LIKELIHOOD	RISK ASSESSMENT	MITIGATION MEASURES
<p>authorities and producers give priority to short term gains over the long term intangible benefits of conservation when faced with rare economic opportunities (such as the increased demand for ylang-ylang essential oil on international markets) and invest heavily in the exploitation of resources without applying the requirements of sustainable development, and create undue pressure on land and water resources and remaining natural forests.</p>				<p>regulations concerning the PAs and the use of resources to ensure the integrity of species and their habitats (Output 1.1). The project will support the implementation of a strategic communication plan (act.1.2.3) and the development of a website (act. 1.2.1) to raise awareness among resource users and the general public on the importance and value of biodiversity and ecosystem services for the well-being of the population and give access to information on PAs and their issues to foster national ownership of the PAs system. As part of the implementation of PA management plans (act. 2.1.4), the project will support the reforestation of the perimeter of plots located on the periphery of natural forests within PAs to improve their yield to meet growing demand for fuel wood, fodder and food and prevent the clearing of new plots at the expense of the forest.</p>
<p><u>ENVIRONMENTAL</u> Climate and natural disaster risks: Due to its geographical situation, fragile soils and volcanic activity (for Ngazidja), Comoros is prone to experience cyclones, heavy rains, landslides, habitat disruption and floods. In Ngazidja, this risk is exacerbated when rain does not seep into soils clogged by volcanic ashes.</p>	High	Moderately likely	M	<p>This risk will be mitigated by the conservation of remaining forests in PAs and reforestation and adoption of SLM practices in most vulnerable watersheds (with steep slopes).(Output 2.1) Climate change is slow acting risk, which is being monitored in Comoros, including with the assistance of other GEF projects.</p>
<p><u>OTHER</u> Gas development, including ongoing seismic exploration surveys pose varying degrees of threat to cetaceans, marine turtles and fish; and potential exploration and appraisal surveys involving drilling operations, increase risks of spills and pollution to the marine and coastal habitats</p>	High	Moderately Likely	M	<p>The risk of collision for cetaceans and sea turtles is relatively limited since the speed of the ship during seismic operations is normally constant and moderate. However, in order to mitigate the impact of seismic waves on cetaceans, turtles and fish, MPA management plans (especially for the Moheli Marine Park and Coelacanth zone MPA) will include provisions to mitigate such impacts by identifying sensitive periods for cetaceans and turtles during which seismic operations must be suspended in the vicinity of the MPA. As part of the activities on the legislative framework (output 1.1), the project provides for the harmonization of texts on issues that may have an impact on PAs and their resources. The project will examine the possibility of incorporating provisions to anticipate and reduce risks at all stages of intervention in exploration, infrastructure installation and operation agreements and that they are required by the Petroleum Code (2013) and related regulations. Provisions regarding seismic operations may include the use of avoidance</p>

IDENTIFIED RISKS AND CATEGORY	IMPACT	LIKELIHOOD	RISK ASSESSMENT	MITIGATION MEASURES
				corridors or compliance with time windows to reduce the risk of affecting cetacean populations and adoption of a procedure requiring visual monitoring and stopping all movement when a whale is seen in a given radius from the source of seismic waves.
<p><b><u>STRATEGIC</u></b> The socio-economic context is unstable and not conducive to the emergence of environmental awareness within the population that is not willing to change their behaviour and unsustainable use of natural resources.</p>	Medium	Likely	<b>M</b>	The project will raise the awareness of local communities on the benefits associated with the conservation of biodiversity and ecosystem services through environmental education, demonstration of new practices and associated benefits. It will support the development of a livelihoods programmed linked to PA management (Output 2.4) and ecotourism for the benefit of these communities (Output 2.3).
<p><b><u>POLITICAL</u></b> The structures established for the management of protected areas are not supported by the authorities who constrain their autonomy of management. Village representatives in the co-management committees are not playing their role in a transparent manner which hampers the effective participation of communities in decisions relating to the management of the protected area and may lead them to withdraw their support to the PA conservation objectives.</p>	Medium	Moderately likely	<b>L</b>	<p>The project provides for capacity development and awareness of village communities on the role assigned to them in co-managing a protected area and the benefits provided by ecosystem services in and around effectively managed protected areas (Output 1.2).</p> <p>The project will also support the introduction of transparent mechanisms for the election of village representatives and for community and resource users' consultation in the context of PAs and land resources management in the surrounding ecosystems.</p> <p>Furthermore, effective mechanisms for mediation and conflict resolution will be put in place and made operational (Output 2.2). These allow villagers a voice and PA managers recourse options for dealing with tensions arising from resource and land use change arising from the establishment of PAs and MPAs.</p>
<p><b><u>ENVIRONMENTAL</u></b> Marine and terrestrial ecosystems are not sufficiently resilient and their biological and physical integrity is incrementally compromised by the effects of global and regional climate change</p>	Low	Moderately Likely	<b>L</b>	The design and management of the expanded system of PAs/MPAs will seek to have control of the major pressures on biodiversity and harmonize the management of key biodiversity resources within PAs with that of surrounding ecosystems in order to reduce the negative impacts of activities taking place outside PAs. The PMM will be expanded to include its watershed and Mwali's rainforest in order to have control of activities leading to pollution, erosion and sedimentation affecting the coral reefs and seagrass meadows in the coastal area, while conserving terrestrial biodiversity. Improving health condition of seagrass, coral reef and associated biodiversity by reducing pressures will enhance its resilience to stresses caused by climate change such as climate-induced bleaching.

**Table 7: Risk Assessment Guiding Matrix**

		Impact				
		CRITICAL	HIGH	MEDIUM	LOW	NEGLIGIBLE
CERTAIN / IMMINENT		Critical	Critical	High	Medium	Low
VERY LIKELY		Critical	High	High	Medium	Low
LIKELY		High	High	Medium	Low	Negligible
MODERATELY LIKELY		Medium	Medium	Low	Low	Negligible
UNLIKELY		Low	Low	Negligible	Negligible	Considered to pose no determinable risk

## **COST-EFFECTIVENESS**

132. The project is designed to create an effective PA system in a short period of time with targeted investment building directly on previous and ongoing efforts. There are several aspects to the project that have been designed for cost effectiveness. These include 1) the focus on protected areas as a solution for biodiversity and critical ecosystem services conservation, 2) the creation of a Union-wide protected areas authority, and 3) the focus on specific target PAs for capacity building and management support.

133. The focus on PA management as a solution for biodiversity and ecosystem services conservation is cost effective in comparison to other approaches to sustainable land and resources management because Comoros has only one existing PA and there are many sites that are under threat from habitat conversion and overexploitation. The PA approach offers very targeted management solutions that conserve key resources while providing a focus for community interaction and efforts on improved NR management in and around the new PAs. Protected areas in general are considered cost efficient with regard to conservation and can provide 25 times return on investment according to the TEEB reports.

134. The creation of a Union-wide PA authority is one of the proposals made in this project to deal with current inefficiencies in PA management. All relevant argument pro and con such proposal will be duly analysed. Yet, we note that there are two alternative approaches that have been considered and found to be less cost effective. First, there is the possibility of working through the existing environmental management departments of the Union government and the island governments. This is considered less cost effective because the gains that will be achieved during the implementation phase of the project will eventually be lost once the project is completed as there will be little institutional memory to maintain gains and capacity. Although the existing environmental staff of these government departments are committed advocates of biodiversity conservation, they are engaged in a wide variety of environmental management issues and are not adequately focused on PA management issues for a cost effective project implementation and continuation. The second alternative would be the establishment of PA management entities in each of the three islands. This would not be cost effective due to the fact that certain technical positions would need to be hired at each of the islands and, not only is this capacity difficult to find, but also this would be a more expensive approach than hiring specialists at the Union level and allowing them to move around to the islands to provide support to local teams. There are other cost savings that can be made from centralizing a larger organisation than having to repeat structures at each level (administration, management, etc.).

135. Finally, the focus on specific target PAs for implementation of capacity building and proving effective models allows the project to focus on specific high value areas that are both the most important in terms of biodiversity and those areas where past work would contribute to the success of project implementation. These target sites would then become models for the remaining areas of Comoros in need of conservation efforts through PA creation and management.

136. At the same time, the project will seek to utilize the existing resources and capacities of local NGOs and community groups that have shown effectiveness in their actions to date.

## COUNTRY OWNERSHIP: COUNTRY ELIGIBILITY AND COUNTRY DRIVENNESS

137. The Government of Comoros ratified the United Nations Convention on Biological Diversity (CBD) in 1994. As a party to the CBD, the Comoros is committed to implement the Programme of Work on Protected Areas (PoWPA). The project activities will support the country's efforts in contributing to achieving the global targets for the following goals: Goal 1.1: To establish a national system of protected areas (Output 1.3), Goal 2.1: Equity and benefit-sharing (act. 2.1.6: development of collaborative management agreements), Goal 2.2: Involvement of local communities and relevant stakeholders (act. 1.1.1: broad consultative meetings for the development of the legislative framework; act. 1.3.2: gazettal of new PAs involving information meetings and consultations; act. 2.1.5: participatory surveillance of PAs; act. 2.1.6: development of collaborative agreements; act. 2.1.7: Participatory monitoring), Goal 3.1: Enabling policy and institutional environment (Output 1.1: new legal framework for the management of the PA system including its institutional structure), Goal 3.2: Capacity for the planning, establishment and management of protected areas (Output 1.2: Capacity development), Goal 3.4: Financial sustainability of protected areas and national and regional systems of protected areas (Output 1.4), Goal 3.5: To strengthen communication, education and public awareness (act. 1.2.1: accessible information system, database and website; act. 1.2.3: strategic communication plan), Goal 4.1 – To develop and adopt minimum standards and best practices for national and regional protected area systems (act.1.2.2: training on PA management; act.2.1.3: outlines and guides for the development of management plans), Goal 4.2: To evaluate and improve the effectiveness of protected areas management (act. 2.1.7 long-term ecological monitoring program), Goal 4.4: To ensure that scientific knowledge contributes to the establishment and effectiveness of protected areas and protected area Systems (act. 1.2.1 information system to monitor, analyse, map and disseminate information on the PA system).

138. The NBSAP is currently being updated and revised to better support the CBD Aichi Targets. The activities proposed in this project will support the Comoros to meet the Aichi Biodiversity Targets.

Aichi Targets	Contribution to targets as part of the PA System project
<p><b>Target 1:</b> By 2020, at the latest, people are aware of the values of biodiversity and the steps they can take to conserve and use it sustainably.</p>	<p>The project will hold broad consultative meetings to develop the new legislative framework and PA system strategy (act.1.1.1), and will support the development of a website for the PA system to provide access to information to all users and the general public (act.1.2.1). A strategic communication plan will be elaborated and implemented to communicate the value of biodiversity and PAs, demonstrate that PAs provide benefits beyond their boundaries, foster cooperation and commitment in managing the PA system and develop ownership by all stakeholders towards PAs (act.1.2.3).</p>
<p><b>Target 4:</b> By 2020, at the latest, Governments, business and stakeholders at all levels have taken steps to achieve or have implemented plans for sustainable production and consumption and have kept the impacts of use of natural resources well within safe</p>	<p>The project will support the development of management plans for protected areas, probably category VI-that will include measures for sustainable management of resources compatible with conservation objectives in appropriate zones.</p>

<b>Aichi Targets</b>	<b>Contribution to targets as part of the PA System project</b>
ecological limits.	
<b>Target 5:</b> By 2020, the rate of loss of all natural habitats, including forests, is at least halved and where feasible brought close to zero, and degradation and fragmentation is significantly reduced.	The establishment of terrestrial and coastal protected areas aims to ensure strict conservation of 28,705 ha of remaining natural forests and 116 ha of mangrove and sustainably manage or restore terrestrial habitats in peripheral areas in order to preserve the integrity of existing habitats of vulnerable species.
<b>Target 6:</b> By 2020, all fish and invertebrate stocks and aquatic plants are managed and harvested sustainably, legally and applying ecosystem based approaches, so that overfishing is avoided, recovery plans and measures are in place for all depleted species, fisheries have no significant adverse impacts on threatened species and vulnerable ecosystems and the impacts of fisheries on stocks, species and ecosystems are within safe ecological limits.	The project will support the development and implementation of MPAs management plans that will include measures for the sustainable management of fish resources and the development of livelihood activities that will aim specifically at reducing destructive fishing practices.
<b>Target 9:</b> By 2020, invasive alien species and pathways are identified and prioritized, priority species are controlled or eradicated, and measures are in place to manage pathways to prevent their introduction and establishment.	Invasive alien species are a major threat to the integrity of the remaining natural forests and management plans developed under the project will include measures to counter their expansion.
<b>Target 10:</b> By 2015, the multiple anthropogenic pressures on coral reefs, and other vulnerable ecosystems impacted by climate change or ocean acidification are minimized, so as to maintain their integrity and functioning.	The project will support the establishment of marine and coastal protected areas to ensure the conservation of 9,575 hectares of coral reefs and 1527 ha of seagrass beds, which will help to maintain associated fish and invertebrate species. The project will support the development and implementation of MPAs management plans that will include measures for the sustainable management of fish resources and the development of livelihood activities that will aim specifically at reducing destructive fishing practices.
<b>Target 11:</b> By 2020, at least 17 per cent of terrestrial and inland water areas, and 10 per cent of coastal and marine areas, especially areas of particular importance for biodiversity and ecosystem services, are conserved through effectively and equitably managed, ecologically representative and well connected systems of protected areas and other effective area-based conservation measures, and integrated into the wider landscapes and seascapes.	The project will support the establishment of two national PAs (1 marine: Coelacanth zone and 1 terrestrial/marine: Bimbini peninsula) and one marine CR (Turtle Island) by end of year 4, which will raise the total of protected marine area to 47 690 ha, representing 3.8% of the territorial waters. By end of year 2, the project will support the establishment of approximately 50,500 ha representing ~27% of the land surface (including the gazetting of the terrestrial expansion of PMM to include Mwali's rainforest and of 2 new national PAs for the Karthala forest and Mount Ntringui).
<b>Target 12:</b> By 2020, the extinction of known threatened species has been prevented and their conservation status, particularly of those most in decline, has been improved and sustained.	The project supports the establishment of terrestrial and marine protected areas that cover the habitats of threatened species of Comoros. Priority habitats will be identified through a gap analysis to maximize the representativeness of the PA system.
<b>Target 14:</b> By 2020, ecosystems that provide essential services, including services related to water, and contribute to health, livelihoods and well-being, are restored and safeguarded, taking into account the needs of women, indigenous and local communities, and the	By supporting the implementation of management plans for the PA / MPAs, the project will contribute to the preservation and restoration of ecosystems that provide essential services, including mountain forests which contribute to major river systems on the three islands and coral reefs that support fish populations exploited by coastal communities.

Aichi Targets	Contribution to targets as part of the PA System project
poor and vulnerable.	
<b>Target 17:</b> By 2015 each Party has developed, adopted as a policy instrument, and has commenced implementing an effective, participatory and updated national biodiversity strategy and action plan.	The project supports the development of a strategy for the PA system that will be part of the revised strategy for biodiversity
<b>Target 19:</b> By 2020, knowledge, the science base and technologies relating to biodiversity, its values, functioning, status and trends, and the consequences of its loss, are improved, widely shared and transferred, and applied.	The project will develop a database specific to the Comoros PA system that will be accessible from a website to serve as a platform for the dissemination and sharing of knowledge and the promotion of the importance of biodiversity for the well-being of the population of the Comoros.

## PROJECT CONSISTENCY WITH NATIONAL PRIORITIES/PLANS

139. The current project strategy was selected following a review of possible investments with Comoros' STAR allocations. The urgency of addressing threats to Comoros' unique biodiversity, calls for a project with sufficient scope to address these threats, rather than splitting up the STAR total envelope into small initiatives with limited impact. After due consultations at ministerial level, involving Convention Focal Points and other relevant stakeholders, it was decided, at the Vice-Presidency's level, that Comoros would apply the GEF-V flexibility mechanism for this project, given that it is a high and immediate priority for the country.

140. The project supports **Government priorities** in environment. Conservation and valuing of marine and terrestrial ecosystems is a priority declared by the Government of the Union of Comoros in the Strategic Program Framework for 2011-2016 with respect to the conservation of the natural environment, climate change and disaster risk reduction. The project is consistent with the principles for action related to shared governance and decentralized management of natural resources, the conservation of forests and restoration and degraded lands and the protection of fish stocks. The creation of the national network of protected areas is a process initiated since the 90's. The Government renewed its commitment in 2007 through the implementation of the OCB Project with the support of UNDP to develop the capacity of village communities and facilitate the creation of PAs.

141. The project is consistent with and supports the **Poverty Reduction and Growth Strategy Paper (PRGSP) (2009)**. In the Comoros, natural resources are the main source of livelihood and income for segments of the population most affected by poverty. As natural resources and ecosystems are threatened by uncontrolled exploitation, there is a risk of permanently compromising their vital economic potential. The project will contribute to the priority program on biodiversity conservation and equitable sharing of related benefits, which recognizes that, facing environmental threats such as deforestation and land degradation, the Comoros have to overcome constraints such as largely inadequate financial resources, unclear sharing of authority for environmental management between the Union and the Islands in the current organic framework, and lack of appropriate capacity at every level for natural resource management.

142. The project will implement the themes of the **National Strategy and Action Plan for Biodiversity Conservation (2001)**. The project implements major themes of the NBSAP<sup>60</sup> through *i*) the adoption of a framework for protected area management that recognizes the importance of community participation in the development and management of PAs, *ii*) capacity development in biodiversity conservation and management of PAs, *iii*) establishing a system for the long term monitoring of

<sup>60</sup> The current NBSAP is in the process of being revised to align the strategy to the Aichi Targets.

biodiversity, and *iv*) restoring degraded ecosystems, controlling alien species, and promoting the recovery of endangered species within PAs. The NBSAP is currently under revision and the PA strategy developed under Output 1.3 will be integrated in the new strategy and action plan.

143. The project will contribute to implementing the **Priority Action Plan for Forestry Development (2011)**. The project will contribute to priority actions 3 *Preservation of relics of natural forests* and 5 *Supporting the development of protected areas* of the scope of action on participatory and sustainable management of natural resources.

144. The project is in line with the **Land Degradation Assessment in Drylands report (2010)**. The assessment concludes that the degradation observed in the Comoros occurs mainly in the form of reduced land fertility attributable to erosion associated with the reduction of vegetation cover. Land resources in the forest system are for farmers the most available way to compensate for production losses related to reduced land productivity in crop systems primarily based on extensive shifting cultivation. The report also recognises that the situation relates to lack of clarity with respect to land tenure and the weaknesses in the forestry departments. The project will address deforestation and degradation through system level barriers and as key drivers to biodiversity loss.

## **SUSTAINABILITY AND REPLICABILITY**

145. The project has been carefully designed to maximize the potential for the long-term sustainability of the interventions in biodiversity conservation in the following areas:

146. Environmental sustainability is the primary objective of the project as it is focused on designing and implementing institutions and activities that achieve long-term sustainable management of key biodiversity and ecosystem service resources in the Comoros through the creation and effective management of a system of protected areas. There are two key elements to the sustainability of this project: 1) the establishment of a Protected Areas Authority at the Union and local levels, and 2) the development of a Conservation Trust Fund to coordinate and implement long-term financing solutions for the PAs of Comoros. The establishment of a PA Authority allows for the retention of capacity and knowledge following the project. It will build up a cadre of well-trained professional conservationists in the Comoros and provide a career path for the younger generation. Collaboration by the project for research and training with the University of Comoros will also contribute to the development of capacity for PA and natural resource management in the future.

147. All actions that the project will implement will be done with the goal of long-term environmental stewardship. Infrastructure will be designed and built with strict environmental and esthetic guidelines. Additionally, the choice of project target areas is based on a prioritisation exercise conducted during the PPG so that the project focuses on the areas with the greatest long-term return on investment: those areas with the greatest amount of biodiversity and areas currently under threat for environmental degradation. The Conservation Trust Fund is an essential element of environmental sustainability as it will be designed to support the PA system for the future. More information on the the CTF is provided below in the section on Financial Sustainability.

148. Financial sustainability: There are two important elements of financial sustainability designed into the project. The first is the establishment of the Conservation Trust Fund (CTF) described above. This CTF is being designed to provide long-term financing for the protected areas and biodiversity of Comoros. With adequate capitalization, the fund could provide a large percentage of the required funding for the long-term management of the expanded PA network that will be supported by this project. The CTF is designed to complement government financing and other sources of funds for PAs and NRM in the Comoros. The second element of the project design that promotes financial sustainability is the

design of the proposed PA Authority which should have sufficient autonomy to mobilise and manage partner funds, including from the CTF. Though this remains a proposal to be scoped, analyzed and considered during project implementation, the project will seek to encourage the government to expand its contribution to salaries for PA managing staff and operations to show co-financing for the trust fund fundraising efforts. In addition, the project will seek to support sustainable livelihoods development in the communities bordering on the PAs. The strategy chosen for this initiative is to work with existing microfinance institutions and livelihoods programmes to facilitate their access to the communities targeted around the PAs.<sup>61</sup>

149. Institutional sustainability will be achieved by the creation of a PA authority as a distinct branch of the government. In a context where specialized human and financial resources for PAs are limited, the project aims to establish an institution responsible for the PA system. The actual nature of the PA authority will be determined through an ongoing consultative approach but there are certain characteristics that will necessarily be part of its structure. These include the ability to plan, budget, and implement activities for the PA system, the ability to fundraise in complement to the government budgeting process. The PA authority will build up a cadre of competent and committed conservationists with the skills and experience to lobby the government for adequate funding and for adequate legal support. Additional institutions that are supported by the project include local NGOs and associations that have been active in nature conservation for some time but require additional technical and financial support to reach their potential. The project will support these institutions through providing capacity building and through establishing subgrants with these organizations to implement some project activities.

150. Social sustainability will primarily be enhanced in the project through the processes of partnership with local communities, CBOs, and co-management of PAs. The experience of PMM showed that the dissociation of communities to the conservation objectives of the PA was related to the lack of ownership of the PA by village communities. The project will seek to expand community engagement with the PA objectives to maintain the momentum beyond the duration of the project by developing a culture of communication between the AP and the village communities. This will be accomplished by:

- Strengthening the co-management process - creating / strengthening platforms where communities freely express their priorities and concerns, then resolve these issues through co-management structures
- Hiring an ecoguard in each of the villages affected by the PA to ensure the presence of the AP at the village level ,
- Creating a position within each management unit PAs specifically designed to maintain communication, transparency in the management of the PA,
- Development of a communication strategy for the PA system guided by local, national and international goals
- Harmonizing the management of tourism activities (access conditions, pricing, etc.) among the villages within the same AP to ensure equitable sharing of benefits related to PAs.

### ***Replication***

151. The project provides for replication and innovation through a combination of approaches. First, the establishment and capacity building of a PA authority allows for pilot solutions that are developed and found successful in one PA to be used for other PAs in the network. The unified authority will be able to replicate actions successfully across the entire PA network once its capacity it improved. Related to this

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<sup>61</sup> UNDP is also facilitating the linkages with prospective livelihoods and microgrants and microfinance programmes.

Union-wide approach is the fact that the project will work with a range of local NGOs and associations that will bring their own creativity and experiences to the challenges of PA management and community collaboration. Again, through the PA authority, these approaches can be effectively shared throughout the network. A series of inter-island workshops can build upon these exchanges to further encourage sharing of best practices and successful innovations. To date the only PA in the Comoros has been PMM and the other islands are not experienced in PA management. Although most of the urgent knowledge sharing will be initially among the islands, over time the capacity and experience of PA managers in the Comoros may be shared with other island countries with similar conservation challenges.

152. More generally, each project output will include the documentation of lessons learnt from implementation of activities under the output, and the results, tools and guidance materials developed during implementation will be consolidated by the Project Coordinator. The Project Coordinator will ensure that this information will then be made accessible to different stakeholder groups in order to support better protected areas management.

## **PART III: Management Arrangements**

### **PROJECT IMPLEMENTATION ARRANGEMENT**

153. The project will be implemented over a period of five years. UNDP will be responsible for the implementation of the project. The project will be nationally implemented (NIM) by the Ministry of Production, Energy, Environment, Industry and Handicraft (MPEEIH), in line with the Standard Basic Assistance Agreement (SBAA, 27 January 1976) between the UNDP and the Government of the Comoros.

154. The UNDP will monitor the project's implementation and achievement of the project outputs, and ensure the proper use of UNDP-GEF funds. Day-to-day operational oversight will be ensured by the UNDP Country Office (CO) in Comoros, and strategic oversight by the UNDP/EEG Regional Technical Advisor (RTA) responsible for the project. The UNDP CO will be responsible for: (i) providing financial and audit services to the project; (ii) recruitment and contracting of project staff; (iii) overseeing financial expenditures against project budgets; (iv) appointment of independent financial auditors and evaluators; and (v) ensuring that all activities, including procurement and financial services, are carried out in strict compliance with UNDP-GEF procedures.

155. Day-to-day management of the project will be undertaken by the National Project Coordinator (NPC). The NPC will be located in the Project Coordination Unit (PCU), and the PCU will provide administrative and financial management support to the NPC. The NPC will report directly to the PSC and Director of Environment and Forests. The NPC'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 NPC will liaise and work closely with all partner institutions to link the project with complementary regional and national programs and initiatives. The NPC will be recruited using standard UNDP recruitment procedures. The terms of reference for the NPC are detailed in Section IV, Part IV.

156. The MPEEIH will have the overall responsibility for achieving the project goal and objectives. MPEEIH will designate a high-level official to act as the National Project Director (NPD). The NPD will provide the strategic oversight and guidance to project implementation. The NPD will not be paid from the project funds, but will represent a Government in kind contribution to the Project. The NPD will sign and approve the project financial reports, the financial requests for advances under any contracts issued under NIM, and the MOU between the Government and any NGOs subcontracted.

157. Project Steering Committee (PSC) will be constituted to serve as the project's coordination and decision-making body. The PSC will ensure that the project remains on course to deliver the desired outcomes of the required quality. The PSC will be chaired by the NPD (the 'executive'<sup>62</sup>), and will include representation from: government partners, UNDP ('project assurance'<sup>63</sup>), and at least one local NGO. Representatives of other stakeholder groups may also be included in the PSC, as considered appropriate and necessary. Prospective membership of the PSC will be reviewed, and recommended for approval, during the Project Inception meeting. The PSC will meet at least twice per annum to review project progress, approve project work plans and approve major project deliverables.

158. The Project Coordinator will prepare the Annual Work Plan (AWP) and Annual Budget Plan (ABP) each year for the project; the National Project Coordinator will prepare inputs as required for this process. The AWP and ABP will be approved by the PSC at the beginning of each year. These plans will provide the basis for allocating resources to planned activities. Once the PSC approves the AWP this will be sent to the UNDP Country Office and the Regional Technical Advisor for Biodiversity at the UNDP GEF Regional Coordinating Unit for clearance. This triggers the release of funds in Atlas to the UNDP Country Office. The PM will, with the inputs of relevant stakeholders, further produce quarterly operational reports and Annual Progress Reports (APR<sup>64</sup>) for review by the PSC, or any other reports at the request of the PSC. These reports will summarize the progress made by the project versus the expected results, explain any significant variances, detail the necessary adjustments and be the main reporting mechanism for monitoring project activities. A calendar for the clearance and approval of work plans, requests for financial advances, financial reporting and technical reporting will be developed and agreed during project inception. The project will prepare annual procurement plans and maintain them up to date and with due follow up.

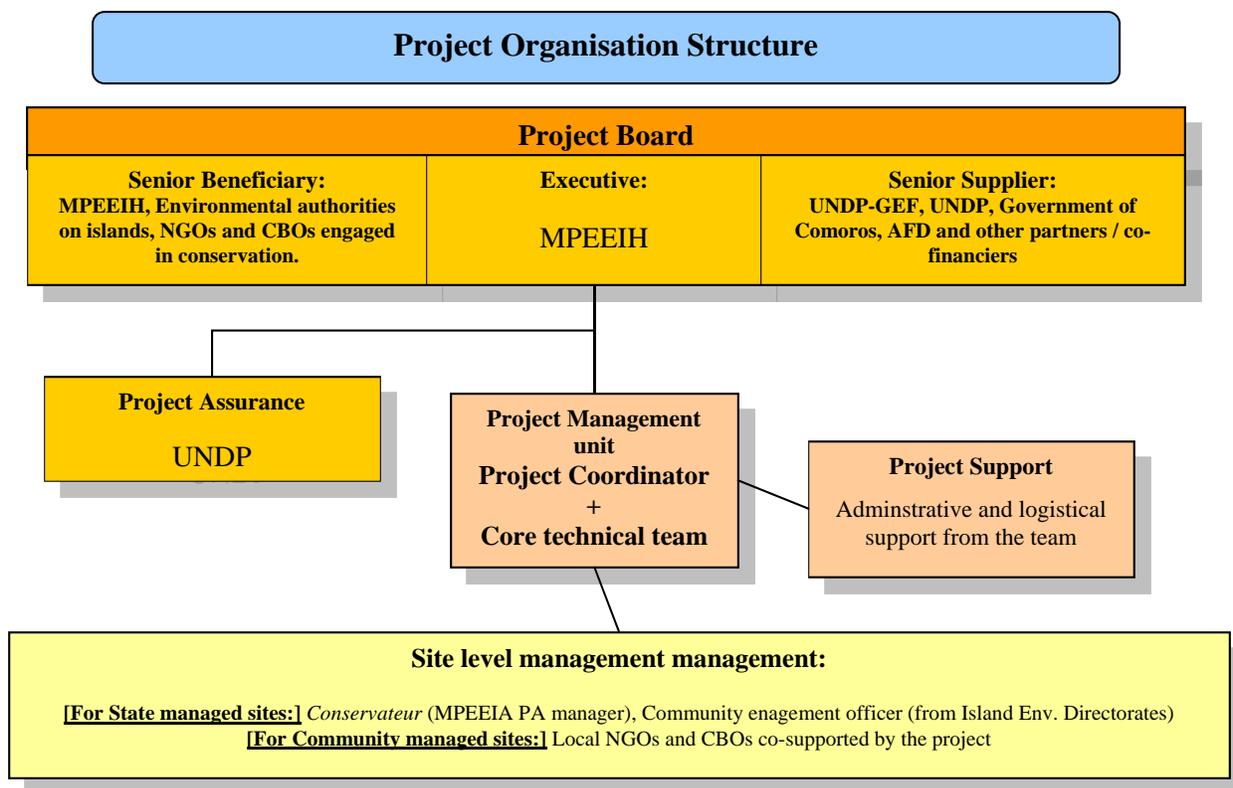
159. An overview of the project organisation structure is shown below.

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<sup>62</sup> The role of the 'executive' is to ensure that the project is focused on achieving its outputs and that the project adopts a cost-conscious approach.

<sup>63</sup> The 'project assurance' will independently verify the quality of the products' or outputs'

<sup>64</sup> This will be combined with the PIR



## AUDIT CLAUSE

160. Audit will be conducted according to UNDP Financial Regulations and Rules and applicable Audit policies.

## PART IV: Monitoring Framework and Evaluation

### MONITORING AND REPORTING

161. Project monitoring and evaluation will be conducted in accordance with established UNDP and GEF procedures and will be provided by the project team and the UNDP Country Office (UNDP-CO) with support from UNDP/GEF. The Project logframe (Project Results Framework) in Part III provides *performance* and *impact* indicators for project implementation along with their corresponding *means of verification*. These will form the basis on which the project's Monitoring and Evaluation (M&E) system will be built. The following sections outline the principle components of the Monitoring and Evaluation Plan and indicative cost estimates related to M&E activities. The project's Monitoring and Evaluation Plan will be presented and finalized at the Project's Inception Report following a collective fine-tuning of indicators, means of verification, and the full definition of project staff M&E responsibilities.

162. The project will be monitored through the following M&E activities. The M&E budget is provided in the table below.

### ***Project start-up***

163. A Project Inception Workshop will be held within the first 2 months of project start with those with assigned roles in the project organization structure, UNDP country office and where appropriate/feasible regional technical policy and programme advisors as well as other stakeholders. The Inception Workshop is crucial to building ownership for the project results and to plan the first year annual work plan.

164. The Inception Workshop should address a number of key issues including:

- a) Assist all partners to fully understand and take ownership of the project. Detail the roles, support services and complementary responsibilities of UNDP CO and RCU staff vis à vis the project team. Discuss the roles, functions, and responsibilities within the project's decision-making structures, including reporting and communication lines, and conflict resolution mechanisms. The Terms of Reference for project staff will be discussed again as needed.
- b) Based on the project results framework and the relevant GEF Tracking Tool if appropriate, finalize the first annual work plan. Review and agree on the indicators, targets and their means of verification, and recheck assumptions and risks.
- c) Provide a detailed overview of reporting, monitoring and evaluation (M&E) requirements. The Monitoring and Evaluation work plan and budget should be agreed and scheduled.
- d) Discuss financial reporting procedures and obligations, and arrangements for annual audit.
- e) Plan and schedule Project Steering Committee meetings. Roles and responsibilities of all project organisation structures should be clarified and meetings planned. The first Project Steering Committee meeting should be held within the first 12 months following the inception workshop.

165. An Inception Workshop report is a key reference document and must be prepared and shared with participants to formalize various agreements and plans decided during the meeting.

### ***Quarterly***

166. Progress made shall be monitored in the UNDP Enhanced Results Based Management Platform. Based on the initial risk analysis submitted, the risk log shall be regularly updated in ATLAS. Risks become critical when the impact and probability are high. Note that for UNDP GEF projects, all financial risks associated with financial instruments such as revolving funds, microfinance schemes, or capitalization of ESCOs are automatically classified as critical on the basis of their innovative nature (high impact and uncertainty due to no previous experience justifies classification as critical). Based on the information recorded in Atlas, a Project Progress Reports (PPR) can be generated in the Executive Snapshot. Other ATLAS logs can be used to monitor issues, lessons learned etc. The use of these functions is a key indicator in the UNDP Executive Balanced Scorecard.

### ***Annually***

167. Annual Project Review/Project Implementation Reports (APR/PIR): This key report is prepared to monitor progress made since project start and in particular for the previous reporting period (30 June to 1 July). The APR/PIR combines both UNDP and GEF reporting requirements.

168. The APR/PIR includes, but is not limited to, reporting on the following:

- Progress made toward project objective and project outcomes - each with indicators, baseline data and end-of-project targets (cumulative)
- Project outputs delivered per project outcome (annual).
- Lesson learned/good practice.
- AWP and other expenditure reports
- Risk and adaptive management
- ATLAS QPR

- Portfolio level indicators (i.e. GEF focal area tracking tools) are used by most focal areas on an annual basis as well.

### ***Periodic Monitoring through site visits***

169. UNDP CO and the UNDP RCU will conduct visits to project sites based on the agreed schedule in the project's Inception Report/Annual Work Plan to assess first hand project progress. Other members of the Project Board may also join these visits. A Field Visit Report/BTOR will be prepared by the CO and UNDP RCU and will be circulated no less than one month after the visit to the project team and Project Board members.

### ***Mid-term of project cycle***

170. The project will undergo an independent Mid-Term Evaluation at the mid-point of project implementation (insert date). The Mid-Term Evaluation will determine progress being made toward the achievement of outcomes and will identify course correction if needed. It will focus on the effectiveness, efficiency and timeliness of project implementation; will highlight issues requiring decisions and actions; and will present initial lessons learned about project design, implementation and management. Findings of this review will be incorporated as recommendations for enhanced implementation during the final half of the project's term. The organization, terms of reference and timing of the mid-term evaluation will be decided after consultation between the parties to the project document. The Terms of Reference for this Mid-term evaluation will be prepared by the UNDP CO based on guidance from the Regional Coordinating Unit and UNDP-GEF. The management response and the evaluation will be uploaded to UNDP corporate systems, in particular the [UNDP Evaluation Office Evaluation Resource Centre \(ERC\)](#). The relevant GEF Focal Area Tracking Tools will also be completed during the mid-term evaluation cycle.

### ***End of Project***

171. An independent Final Evaluation will take place three months prior to the final Project Board meeting and will be undertaken in accordance with UNDP and GEF guidance. The final evaluation will focus on the delivery of the project's results as initially planned (and as corrected after the mid-term evaluation, if any such correction took place). The final evaluation will look at impact and sustainability of results, including the contribution to capacity development and the achievement of global environmental benefits/goals. The Terms of Reference for this evaluation will be prepared by the UNDP CO based on guidance from the Regional Coordinating Unit and UNDP-GEF.

172. The Terminal Evaluation should also provide recommendations for follow-up activities and requires a management response, which should be uploaded to PIMS and to the UNDP Evaluation Office Evaluation Resource Centre (ERC). The relevant GEF Focal Area Tracking Tools will also be completed during the final evaluation.

173. During the last three months, the project team will prepare the Project Terminal Report. This comprehensive report will summarize the results achieved (objectives, outcomes, outputs), lessons learned, problems met and areas where results may not have been achieved. It will also lay out recommendations for any further steps that may need to be taken to ensure sustainability and replicability of the project's results.

### ***Learning and knowledge sharing***

174. Results from the project will be disseminated within and beyond the project intervention zone through existing information sharing networks and forums. The project will identify and participate, as relevant and appropriate, in scientific, policy-based and/or any other networks, which may be of benefit to project implementation though lessons learned. The project will identify, analyse, and share lessons learned that might be beneficial in the design and implementation of similar future projects. Finally, there will be a two-way flow of information between this project and other projects of a similar focus.

### **Communications and visibility requirements**

175. Full compliance is required with UNDP’s Branding Guidelines. These can be accessed at <http://intra.undp.org/coa/branding.shtml>, and specific guidelines on UNDP logo use can be accessed at: <http://intra.undp.org/branding/useOfLogo.html>. Amongst other things, these guidelines describe when and how the UNDP logo needs to be used, as well as how the logos of donors to UNDP projects need to be used. For the avoidance of any doubt, when logo use is required, the UNDP logo needs to be used alongside the GEF logo. The GEF logo can be accessed at: [http://www.thegef.org/gef/GEF\\_logo](http://www.thegef.org/gef/GEF_logo). The UNDP logo can be accessed at <http://intra.undp.org/coa/branding.shtml>.

176. Full compliance is also required with the GEF’s Communication and Visibility Guidelines (the “GEF Guidelines”). The GEF Guidelines can be accessed at: [http://www.thegef.org/gef/sites/thegef.org/files/documents/C.40.08\\_Branding\\_the\\_GEF%20final\\_0.pdf](http://www.thegef.org/gef/sites/thegef.org/files/documents/C.40.08_Branding_the_GEF%20final_0.pdf). Amongst other things, the GEF Guidelines describe when and how the GEF logo needs to be used in project publications, vehicles, supplies and other project equipment. The GEF Guidelines also describe other GEF promotional requirements regarding press releases, press conferences, press visits, visits by Government officials, productions and other promotional items.

177. Where other agencies and project partners have provided support through co-financing, their branding policies and requirements should be similarly applied.

### **M&E workplan and budget**

**Table 8: M&E Activities, Responsibilities, Budget and Time Frame**

<b>Type of M&amp;E activity</b>	<b>Responsible Parties</b>	<b>Budget US\$ Excluding project team staff time</b>	<b>Time frame</b>
Inception Workshop and Report	<ul style="list-style-type: none"> <li>▪ Project Coordinator</li> <li>▪ UNDP CO, UNDP GEF</li> </ul>	Indicative cost: 20,000	Within first two months of project start up
Measurement of Means of Verification of project results.	<ul style="list-style-type: none"> <li>▪ UNDP GEF RTA/Project Coordinator will oversee the hiring of specific studies and institutions, and delegate responsibilities to relevant team members.</li> </ul>	To be finalized in Inception Phase and Workshop.	Start, mid and end of project (during evaluation cycle) and annually when required.
Measurement of Means of Verification for Project Progress on <i>output and implementation</i>	<ul style="list-style-type: none"> <li>▪ Oversight by Project Coordinator</li> <li>▪ Project team</li> </ul>	To be determined as part of the Annual Work Plan's preparation.	Annually prior to ARR/PIR and to the definition of annual work plans
ARR/PIR	<ul style="list-style-type: none"> <li>▪ Project Coordinator and team</li> <li>▪ UNDP CO</li> <li>▪ UNDP RTA</li> <li>▪ UNDP GEF</li> </ul>	None	Annually
Periodic status/ progress reports and lessons learned	<ul style="list-style-type: none"> <li>▪ Project Coordinator and team</li> </ul>	None	Quarterly
Mid-term Evaluation	<ul style="list-style-type: none"> <li>▪ Project Coordinator and team</li> <li>▪ UNDP CO</li> <li>▪ UNDP RCU</li> <li>▪ External Consultant (i.e. evaluation team)</li> </ul>	Indicative cost: 42,000	At the mid-point of project implementation.
Final Evaluation	<ul style="list-style-type: none"> <li>▪ Project Coordinator and team,</li> <li>▪ UNDP CO</li> <li>▪ UNDP RCU</li> <li>▪ External Consultant (i.e. evaluation team)</li> </ul>	Indicative cost: 42,000	At least three months before the end of project implementation

Type of M&E activity	Responsible Parties	Budget US\$ <i>Excluding project team staff time</i>	Time frame
Project Terminal Report	<ul style="list-style-type: none"> <li>▪ Project Coordinator and team</li> <li>▪ UNDP CO</li> <li>▪ Local consultant</li> </ul>	None	At least three months before the end of the project
Audit	<ul style="list-style-type: none"> <li>▪ UNDP CO</li> <li>▪ Project Coordinator and team</li> </ul>	Indicative cost: 18,000	Yearly
Visits to field sites	<ul style="list-style-type: none"> <li>▪ UNDP CO</li> <li>▪ UNDP RCU (as appropriate)</li> <li>▪ Government representatives</li> </ul>	For GEF supported projects, paid from IA fees and operational budget	Yearly
TOTAL indicative COST <i>Excluding project team staff time and UNDP staff and travel expenses</i>		US\$ 126,000	

## PART V: Legal Context

178. This document together with the CPAP signed by the Government and UNDP which is incorporated by reference constitute together a Project Document as referred to in the SBAA [or other appropriate governing agreement] and all Country Programme provisions apply to this document.

179. Consistent with the Article III of the Standard Basic Assistance Agreement, the responsibility for the safety and security of the implementing partner and its personnel and property, and of UNDP's property in the implementing partner's custody, rests with the implementing partner.

180. The implementing partner shall:

- a) put in place an appropriate security plan and maintain the security plan, taking into account the security situation in the country where the project is being carried;
- b) assume all risks and liabilities related to the implementing partner's security, and the full implementation of the security plan.

181. UNDP reserves the right to verify whether such a plan is in place, and to suggest modifications to the plan when necessary. Failure to maintain and implement an appropriate security plan as required hereunder shall be deemed a breach of this agreement.

182. The implementing partner agrees to undertake all reasonable efforts to ensure that none of the UNDP funds received pursuant to the Project Document are used to provide support to individuals or entities associated with terrorism and that the recipients of any amounts provided by UNDP hereunder do not appear on the list maintained by the Security Council Committee established pursuant to resolution 1267 (1999). The list can be accessed via <http://www.un.org/Docs/sc/committees/1267/1267ListEng.htm>. This provision must be included in all sub-contracts or sub-agreements entered into under this Project Document.

## SECTION II: Strategic Results Framework (SRF) and GEF Increment

### PART I: Strategic Results Framework Analysis

#### PROGRAMMATIC LINKS

<p><b>To UNDP Strategic Plan:</b></p> <p><b>UNDP Strategic Plan (2014-2017)</b> <a href="#">[Link]</a></p> <p><b>Primary Outputs:</b> (2.5) Legal and regulatory frameworks, policies and institutions enabled to ensure the conservation, sustainable use, and access and benefit sharing of natural resources, biodiversity and ecosystems, in line with international conventions and national legislation; and</p> <p><b>Secondary Output (1.3)</b> Solutions developed at national and sub-national levels for sustainable management of natural resources, ecosystem services, chemicals and waste</p>
<p><b>To UNDP's Biodiversity and Ecosystems Global Framework (2012-2020):</b></p> <p><b>Signature Programme #2:</b> Integrating biodiversity and ecosystem management into development planning and production sector activities to safeguard biodiversity and maintain ecosystem services that sustain human wellbeing. <a href="#">[Link]</a>.</p>
<p><b>Contribution to UNDAF Outcomes:</b></p> <p><b>[Comoros' UNDAF 2008-2014 - current]</b></p> <p><b>Outcome 1:</b> By 2014, revenues, jobs, decent work and security food of the poor and vulnerable people are improved.</p> <p><b>Outcome 4:</b> By 2014, ecosystem integrity is preserved and eco-services they provide are valued for the benefit of the population and vulnerability to natural and climate hazards is significantly reduced in a sustainable development perspective.</p> <p><b>[from UNDAF 2015-2019 – upcoming and under development; numbering may change]</b></p> <p><b>Outcome 1:</b> People, in particular the most vulnerable, implement sustainable and innovative economic activities, which are inclusive, diversified and that generate both income and decent employment.</p>
<p><b>Expected CP Outcome(s)</b></p> <p><i>n/a – Comoros is under One UN (refer to UNDAF)</i></p>
<p><b>Applicable GEF Strategic Objective and Program:</b></p> <p>BD1: Improve Sustainability of Protected Area System</p>
<p><b>Applicable GEF Expected Outcomes:</b></p> <p>1.1: Improved management effectiveness of existing and new protected areas</p>

## INDICATOR FRAMEWORK AS PART OF THE SRF

<p><b>Relevant indicators in UNDP's Strategic Plan (2014-2017) upon which this project will report:</b></p> <p><b><u>Under Output 2.5:</u></b></p> <p>2.5.1 Number of countries with legal, policy and institutional frameworks in place for conservation, sustainable use, and access and benefit sharing of natural resources, biodiversity and ecosystems</p> <p>2.5.2 Number of countries implementing national and local plans for Integrated Water Resources Management.</p> <p>2.5.3 Number of countries implementing national and sub-national plans to protect and restore the health, productivity and resilience of oceans and marine ecosystems.</p> <p>2.5.4 Number of countries in which planning and budgeting mechanisms for conservation, sustainable use and access and benefit sharing of natural resources, biodiversity and ecosystems integrated gender equality and women's empowerment principles</p> <p><b><u>Under Output 1.3:</u></b></p> <p>1.3.1 Number of new partnership mechanisms with funding for sustainable management solutions of natural resources, ecosystem services, chemicals and waste at national and/or sub-national level ,disaggregated by partnership type</p> <p>1.3.2 Number of jobs and livelihoods created through management of natural resources, ecosystem services, chemicals and waste, disaggregated by sex, and rural and urban</p>
<p><b>This project will contribute to achieving the following UNDAF Output: [from UNDAF 2015-2019 – under development, numbering may change]</b></p> <p><b><u>Output 1.3:</u></b> The country counts on a terrestrial and marine protected area system,co-managed with local communities and develops economic activities compatible with conservation objectives.</p>
<p><b>Applicable UNDAF Indicators [for UNDAF 2015-2019 under development, numbering may change]:</b></p> <p>3.1: Number of protected areas created per island</p> <p>3.2: Percentage of community representatives, disaggregated by gender, and of civil society, who participate in protected area management committees</p> <p>3.3: Number of eco-tourism activities managed by communities and the private sector</p> <p>3.4: Number of green jobs disaggregated by gender, and by age tier, created in the heart of the protected area system</p>
<p><b>Applicable GEF Strategic Objective and Program: BD1 <i>Improve the sustainability of Protected Area Systems</i></b></p>
<p><b>Applicable GEF Expected Outcomes:</b> 1.1 <i>Improved management of existing and new protected areas</i>; and 3.2 <i>Good management practices in the wider landscape demonstrated and adopted by relevant economic sectors.</i></p>
<p><b>Applicable GEF Outcome Indicators:</b></p> <ul style="list-style-type: none"> <li>- METT scores for 8 PA sites will improve from an average of 26% to an average of 50%</li> <li>- 7 new Protected Areas encompassing 11,020 hectares of marine ecosystems and 46,800 hectares of terrestrial ecosystems</li> </ul>

	Indicator	Baseline	Targets (End of Project)	Source of verification	Risks and Assumptions
<p><b>Project Objective</b> To establish an expanded and functional system of protected areas (PAs) in the Union of Comoros, representative of the country's biodiversity endowment and with good prospects for a sustainable future.</p>	<p>1. Capacity development scores for the three island PA system applied on main PA managing entities (government and non-government):</p> <ul style="list-style-type: none"> <li>- Systemic capacity</li> <li>- Institutional capacity</li> <li>- Individual capacity</li> </ul>	<p>Average scorecard results, as applied by PPG consultants:</p> <p style="text-align: center;">30%</p> <p style="text-align: center;">24%</p> <p style="text-align: center;">29%</p>	<p>Scores are independently applied or vetted by evaluators and reach at least:</p> <p style="text-align: center;">45%</p> <p style="text-align: center;">40%</p> <p style="text-align: center;">35%</p>	<p>PA System Capacity Development Scorecard, regular collection of PA finance data and results for SO1 Tracking Tool, Section III at project start, mid-term and end</p>	<p><b>Assumptions:</b></p> <ul style="list-style-type: none"> <li>• All levels of government (Union, Island, communes), national institutions, associations and NGOs commit to the objectives of the PA system</li> <li>• Adequately qualified consultants / contractors can be sourced in a timely manner to effectively</li> </ul>
	<p>2. Estimated annual financial gap for sustaining an expanded</p>	<p>\$1.7M - \$2.1M for the current and extrapolated</p>	<p>The gap is reduced by approx. 30% by project end</p>	<p>Regular collection of PA finance data and</p>	

	Indicator	Baseline	Targets (End of Project)	Source of verification	Risks and Assumptions
	PA system under a basic PA management scenario (\$ million)	financial gap (based on the 2014 application of the financial scorecard) <sup>65</sup>		results for SO1 Tracking Tool, Section III at project start, mid-term and end	support the implementation of project activities <b>Risks:</b> <ul style="list-style-type: none"> <li>Poor resilience of marine and terrestrial ecosystems to the effects of climate change</li> <li>Government and local authorities and producers give priority to short-term gains over the long-term intangible benefits of conservation when faced with rare economic opportunities and invest heavily in the unsustainable exploitation of resources.</li> </ul>
	3. Number of gazetted national PAs/MPAs effectively and equitably managed in collaboration with local populations	One (1) MPA legally created with significant gaps in terms of collaborative management	4 new national PAs and MPAs, one extended PA and 4 community reserves legally gazetted and effectively managed by collaborative management committees	Reports of the collaborative management committees for each PA, MPA and community reserve	
	4. Number of sites that have been designated as globally important in terms of biodiversity that are integrated in the PA system	One (1) Ramsar site, lake Dziani-Boundouni is integrated in the PMM	The three Ramsar sites of the country (Karthala, Ntringui and lake Dziani-Boundouni) and three of the four IBAs (Mount Karthala, Mwali highlands and Ndzuan highlands) are included in the PA system by the end of the project	Creation decrees of the new PAs	
<b>Component 1: PA system strengthened through expansion and capacity building</b>	<p><b>Key Outcome:</b> The Union of Comoros' PA system is expanded through the addition of nine (09) new sites to the estate, affording protection to varied terrestrial, coastal and marine ecosystems, and reaching a total coverage of <u>98,220 ha</u>, which includes <u>27% of the land surface</u> of the three islands that are object of this project and <u>at least 47,695 ha of seascapes around them</u>. This PA system will be both more sustainably financed and more effectively managed by a capacitated national PA institution and subsidiary PA agencies on each of the islands, leading to reduced threats to globally significant habitats and species.</p> <p><b>Outputs:</b></p> <ol style="list-style-type: none"> <li>1.1 A new <b>legal framework</b> for the management of the PA system is approved and its institutional structure is formalized</li> <li>1.2 <b>Capacity</b> / PA agency staff at various levels and key members of communities and associations involved in PA collaborative management are capable of fulfilling their mandate</li> <li>1.3 <b>PA expansion</b> / A more representative system of PAs emerges, based on a PA system gap analysis and baseline studies, with the formulation of a 'PA System Strategy' and the legal gazettal of terrestrial PAs and MPAs</li> <li>1.4 <b>PA system finance</b></li> </ol>				

<sup>65</sup> The lower range financial gap figure of \$1.7M at the baseline reflects estimated annual gap as per 2013/2014 financial data for an expanded PA system (i.e. with the 10 sites listed in Table 4) and in the absence of this project, whereas the top range an extrapolated gap over a 5 year period, assuming no project and no change in revenues. More information on how it was calculated is contained in the SO1 Tracking Tool, [Financial Scorecard](#).

	Indicator	Baseline	Targets (End of Project)	Source of verification	Risks and Assumptions
	5. Coverage (ha) and proportion (%) of the country's land surface included in the national PA estate	3,725 ha representing 2% (islets in Moheli's Marine Park) of the land surface	By project end: approximately 50,500 ha representing ~27% of the land surface have been included in the national PA estate (including the gazetting of the terrestrial expansion of PMM to include Mwali's rainforest and of 2 new national PAs for the Karthala forest and Mount Ntringui)	Decrees to establish national PAs published in the National Gazette	<p><b>Assumptions</b></p> <ul style="list-style-type: none"> <li>• Legal gazettement of new Protected Areas is a priority in the agenda of the legislative assembly</li> <li>• The government allocates sufficient resources (staff and budget) to establish operational management teams at system and site levels</li> </ul> <p><b>Risks:</b></p> <ul style="list-style-type: none"> <li>• Land tenure insecurity in areas designated for the creation of PAs is a barrier to the actual establishment and operationalisation of these areas and for the adoption of new, sustainable practices</li> <li>• Inadequate institutional capacities to manage the expanded PA system and constraints of hiring in the public service do not allow the hiring of the staff required to the institutional development envisaged in the project</li> </ul>
	6. Number of community reserves (CR) legally created	No official community reserve	Four new CRs created by end of year 4: two included in the Karthala forest national PA: Hantsogoma and Nyumbadju, the forest of Moya and the Turtle Island.	Decrees to establish CR published in the National Gazette	
	7. Coverage (ha) and proportion (%) of the territorial waters <sup>66</sup> covered by national MPAs and marine community reserves	36,675 ha (Moheli's Marine Park maritime area) representing 2.9% of the territorial waters.	Two national PAs (1 marine: Coelacanth zone and 1 terrestrial/marine: Bimbini peninsula) and <u>one</u> marine CR (Turtle Island) are legally created by end of year 4, for a total of 47 690 ha of marine area, representing 3.8% of the territorial waters.	Decrees to establish national PAs published in the National Gazette	
	8. Financial Sustainability Scores for Comoros' PA System	Financial Sustainability Scorecard Scores:  Component 1 – Legal, regulatory and institutional frameworks: 7 points	Scores of at least the following for components:  Component 1: 18 points	Application of the SO1 Tracking Tools at project start, mid-term and end	

<sup>66</sup> The territorial waters are estimated at 1,268,400 ha.

	Indicator	Baseline	Targets (End of Project)	Source of verification	Risks and Assumptions
		<p>Component 2 – Business planning and tools for cost-effective management: 6 points</p> <p>Component 3 – Tools for revenue generation by PAs: 7 points</p> <p><u>Total Score</u>: 20 points</p>	<p>Component 2: 12 points</p> <p>Component 3: 14 points</p> <p><u>Total Score</u>: 44 points (20%)</p>		
<b>Component 2: Site level PA operationalization</b>	<p><b>Key Outcome:</b> At site level, the following key results are achieved: <b>(a)</b> Increased management effectiveness for Comoros’ PAs and MPAs provides improved protection to habitats in approx. 98,000 ha of protected land/seascape and to the species that they harbour, of which 41,650 ha will be directly supported by site level operationalization activities and the remainder co-supported by the project, but mostly financed by partners; <b>(b)</b> The direct and indirect benefits to local communities create tangible incentives for them to support efforts to preserve the biodiversity of the Comoros.</p> <p><b>Outputs</b></p> <p>2.1 <b>PA management</b> is strengthened at the site level so that individual PAs become more effective ‘biodiversity storehouses’.</p> <p>2.2 <b>Resource use governance:</b> Clarity on land tenure for terrestrial PAs and on seascape use-rights for MPAs ensure the ecological integrity of protected sites, with effective mechanisms for mediation and conflict resolution in place and operational in target PAs/MPAs.</p> <p>2.3 <b>Tourism:</b> A realistic plan/strategy for developing sustainable eco-tourism activities in PAs/MPAs (or linked to them) is put forward and implemented</p> <p>2.4 <b>Livelihoods:</b> A livelihoods programme is developed and implemented for the benefit of PA/MPA adjacent communities</p>				
	9. METT scores ( <u>threats</u> )	<p>Baseline threat level , measured as (a) total threat score and (b) number of threats that scored 3 at the baseline:</p> <p>(a) 44 points, (b) 6 threats (a) 55 points, (b) 10 threats (a) 72 points, (b) 15 threats (a) 29 points, (b) 8 threats (a) 44 points, (b) 9 threats (a) 46 points, (b) 11 threats</p>	<p>Independently vetted results from applying the METT for PAs, with respect to <u>threats</u> show the following:</p> <p>(a) total threat points decrease by 15% by project end vis-à-vis the baseline; and</p> <p>(b) at least 5 of the top 9 threats which scored 3 at</p>	<p>Application of the SO1 Tracking Tools at project start, mid-term and end (refer to Summary <a href="#">Financial Scorecard</a> for the top 9 threats and the threat profiling per site).</p>	<p><b>Risks:</b></p> <ul style="list-style-type: none"> <li>The absence of reliable financial flows to the PA system undermines the effectiveness of PA management beyond the duration of the project intervention</li> <li>Poor resilience of marine and terrestrial ecosystems to the effects of climate</li> </ul>

	Indicator	Baseline	Targets (End of Project)	Source of verification	Risks and Assumptions
	[9] Z Coelac B Dauph [10] Bimbini- I Selle  * Note: Includes also the following sites: [6] Hantsogoma Comm Res [7] Ngubadju Comm Res	(a) 45 points, (b) 4 threats (a) 64 points, (b) 12 threats	baseline have been reduced by 1 point, by the end of the project.		change <ul style="list-style-type: none"> <li>Unstable socio-economic context prevents the emergence of environmental awareness within the population that is not willing to change their unsustainable use of natural resources</li> </ul>
	10. METT scores (over 102 possible points) : [1] PMM [2] Karthala* [3] Moheli Rainf [4] Mt Ntringui [5] Moya Comm Res [8] I Tortues Comm Res [9] Z Coelac B Dauph [10] Bimbini- I Selle  * Note: Includes also the following sites: [6] Hantsogoma Comm Res [7] Ngubadju Comm Res	Scored points and %:  38 = 37% 39 = 38% 13 = 13% 8 = 8% 10 = 10% 19 = 19% 40 = 39% 14 = 14%	Independently vetted results from applying the METT for PAs, with respect to <u>management effectiveness</u> show tangible improvement by the end of the project:  (i) no scores below 60% for sites [1], [2], [8] and [9];  (ii) no scores below 30% for sites [8] and [10];  (iii) no scores below 25% for sites [3], [4] and [5]; and  (iv) average of METT scores for all 10 sites increased from 22% to at least 39%.	Application of the SOI Tracking Tools at project start, mid-term and end	<ul style="list-style-type: none"> <li>Gas development, including ongoing seismic exploration surveys threaten cetaceans, marine turtles and fish; and potential appraisal surveys involving drilling, increase risks of spills and pollution</li> <li>Decision-making autonomy of PA collaborative management structures is constrained by the authorities and village-level representation does not lead to an effective participation of communities in decisions relating to the PA management</li> <li>Climate and natural disaster risks: Comoros is prone to experience cyclones, heavy rains, landslides, habitat disruption and floods, which risk is exacerbated in Ngazidja when soils are clogged by volcanic ashes</li> </ul>
	11. Safety of Comoros beaches for turtles nesting for the beaches of the PMM, Bimbini, Chindini, and Turtle Island <sup>67</sup> as measured by: • turtles nesting tracks; • successful nesting attempts.	> 2200 tracks > 1500 successful attempts measured in the PMM between August 2009 and July 2010 Baseline t.b.d. for Bimbini, Chindini and Turtle Island	No decrease by project end	Results of the long term monitoring for the PA system	<ul style="list-style-type: none"> <li>Climate and natural disaster risks: Comoros is prone to experience cyclones, heavy rains, landslides, habitat disruption and floods, which risk is exacerbated in Ngazidja when soils are clogged by volcanic ashes</li> </ul>
	12. Coral reef health status in MPAs as measured by: • Proportion of benthic habitat	• T.b.d. in the 1 <sup>st</sup> year of	No decrease by project end	Results of the long term monitoring for the PA system for permanent	

<sup>67</sup> Bimbini, Chindini, and Turtle Island are beaches where tracks were observed

	Indicator	Baseline	Targets (End of Project)	Source of verification	Risks and Assumptions
	covered by live coral assemblages, versus bleached corals, algae and non-living substrate; <ul style="list-style-type: none"> <li>Number of coral recruits (per m<sup>2</sup>)</li> <li>Grazer fish diversity and abundance</li> </ul>	the project <ul style="list-style-type: none"> <li>T.b.d. in the 1<sup>st</sup> year of the project</li> <li>T.b.d. in the 1<sup>st</sup> year of the project</li> </ul>	No decrease by project end No decrease by project end	sampling sites	
	13. Mangrove health in MPAs, as measured by: <ul style="list-style-type: none"> <li>Total area covered in ha;</li> <li>Area successfully restored</li> </ul>	<ul style="list-style-type: none"> <li>PMM: 91 ha</li> <li>Bimbini: 25 ha</li> </ul> Total: 10,000 propagules planted in Bimbini/ success rate and area t.b.d. in the 1st year of the project	No decrease in mangrove coverage in PMM and Bimbini by project end Target restoration area to be determined in MPA management plans	PA management reports on restoration activities Results of the long term monitoring for the PA system	
	14. Seagrass bed health in all MPAs, as measured by: <ul style="list-style-type: none"> <li>area covered in ha;</li> <li>species diversity</li> </ul>	<ul style="list-style-type: none"> <li>T.b.d. in the 1st year of the project</li> </ul>	No decrease by project end	Results of the long term monitoring for the PA system	
	15. Distribution and density of invasive species along permanent transects in core areas of terrestrial PAs such as <i>Psidium cattleianum</i> and <i>Syzygium jambos</i>	T.b.d. in the 1 <sup>st</sup> year of the project	10% decrease by project end	PA management reports on restoration activities Results of the long term monitoring for the PA system	
	16. i) Distribution of roost sites (number and tree species) and ii) abundance of the Livingstone fruit bat <i>Pteropus livingstonii</i> in Mwali and Ndzuani	i) T.b.d. in the 1 <sup>st</sup> year of the project ii) Mwali: ~ 300 Ndzuani: ~ 950	i) No decrease by project end ii) No decrease by project end	Census conducted by Action Comores as part of the long term monitoring for the PA system	
	17. Perception of values of PAs/MPAs, including non use and non market values, among local communities and other	T.b.d. in the 1 <sup>st</sup> year of the project	Increased perception of the benefits provided by PAs/MPAs in terms of non use and non markets values	Interviews with local communities involved in PA collaborative management and with	

	Indicator	Baseline	Targets (End of Project)	Source of verification	Risks and Assumptions
	stakeholders		by the end of the project	national stakeholders	
	18. Changes in income levels for local community households attributable to the development of biodiversity-friendly income generating activities and proportion of village households that benefit from such IGAs	T.b.d. in the 1 <sup>st</sup> year of the project (average income levels for households in PA riparian villages and for households involved in IGAs such as honey production through OCB project, tree nurseries through SGP and others, and proportion of such households in each village)	Numbers to be defined in baseline survey:  % average increase in household income levels  % increase in the proportion of village households that benefit from biodiversity-friendly IGAs by project end	Surveys conducted with local communities concerned by PAs/MPAs	
	19. Contribution of revenues generated through tourism to local communities income and financing of the PA system	Tourism activities provide little income to local communities and do not contribute to financing the PA system	T.b.d. in the 1 <sup>st</sup> year of the project once key studies under output have been completed 2.4	Surveys conducted with local communities concerned by PAs/MPAs	

## PART II: Incremental Reasoning and Cost Analysis

### EXPECTED GLOBAL, NATIONAL AND LOCAL BENEFITS

183. **Global benefits.** GEF funding will contribute in an incremental manner to removing the barriers to establishing a PA/MPA system that is effectively managed and representative of Comoros' biodiversity. This system will count on terrestrial PAs that protect unique closed and open rainforest ecosystems, montane and low-lying dry vegetation, as well as mangrove patches in all of islands that compose the Union of Comoros. At least 50,525 ha of terrestrial habitats, most of it with high conservation value, will be protected. The project will also help create MPAs that protect the critically endangered coelacanth (*Latimeria chalumnae*), but also beaches which are nesting grounds to threatened marine turtles, mudflats and coral reefs that harbour important marine biodiversity typical of the Indian Ocean biodiversity hotspot. The entire expanded PA/MPA estate will extend over at some 98,000 ha of land/seascapes in Comoros. Within these areas, a number of globally important species will enjoy increased protection as a result of the project: e.g. the dugong, the Mongoose lemur *Eulemur mongoz*, the Comoro black flying fox (*Pteropus livingstonii*) and the Comoro Rousette (*Rousettus obliviosus*). The designation of these areas will also include 3 Important Bird Areas and 3 Ramsar sites. The improved land/seascape management in PAs will contribute to maintain soil and water resources on the islands, increase carbon stocks, reduce GHG emissions, and protect biodiversity. Many of the coral reef and mangrove fisheries are overexploited or heavily degraded and are not as productive as they could be.

184. The project will create two key institutions that will support the long-term effectiveness of the expanded PA estate – thus assuring the conservation of Comoros' biodiversity and ecosystems. These institutions are the Protected Areas authority and the Conservation Trust Fund. Both will be critical to support and solidify the range of initiatives moving forward on community protected areas, ecotourism development, and sustainable use of natural resources by clarifying methodological approaches and providing long-term financing.

185. **Socio-economic benefits.** This project will bring significant benefits at the national and local levels. The benefits to local communities brought by improved conservation of ecosystems and biodiversity in their environment include food and water provision security, the retention of arable land, secure access to safe, clean and sanitary public recreation areas, opportunities for livelihood diversification through increased tourism, and maintenance of coastal ecosystems, i.e. reefs and mangroves, which contribute to protecting the shoreline in the event of a natural disaster. The management rules for protected areas will allow the local communities, who bear the opportunity costs related to the adoption of sustainable practices and who share management responsibilities, to benefit from some exclusive resource use rights (besides benefiting from ecosystem services which may be less tangible in the short term). This should give them adequate incentives to participate in the conservation / sustainable use of the natural resources and in their surveillance. Fishermen will benefit from the protection of fish critical habitats, from a better management of the fish populations that sustain the fisheries, and from an identification of fishing areas for their exclusive use, thus reducing potential social tensions. The project will produce significant gains on co-management of near shore fisheries resulting in an increase of revenues for the many local communities who depend at least partially on them. Although there are some baseline projects focused on the fisheries sector, this project provides the opportunity to combine MPA approaches (core no take zones) with strong community collaboration on multiple use zones to provide concrete examples of successful fisheries management as a model for other areas of the country.

186. Tourism entrepreneurs will benefit from the protection of assets, i.e. landscapes and resources, which they operate. Although tourism continues to be very limited in the Comoros, there is a wealth of attractive destinations and several projects in the baseline and co-financing of the project seek to significantly increase the quality of services and approaches to tourism (especially ecotourism) in the

country. The project will significantly increase the options for the tourism sector as a key partner and contributor to the emergent PA system. The tourism sector's growth will depend on an effective and well maintained PA estate. The electric companies in both Moheli and Anjouan benefit from improved management of the watersheds feeding into several hydroelectric dams. The project will partner with these companies to ensure effective collaboration and develop PES models.

187. At the national level, indirect use benefits brought by an improved conservation of ecosystems and species will include stabilisation of ecosystem services and climate, mitigation of natural disasters including floods, carbon sequestration (though not necessarily marketable carbon) and soil nutrient retention. Beyond biodiversity values, the non-use benefits of a well-developed PA system will contribute to the preservation of the Comorian community values, of Comorian unique landscapes and of associated cultural heritage.

188. **Gender dimension.** In the Comorian society, of Islamic religion, women have an unusually privileged place since they inherit of all the family land on Grand Comoro and part of the land in the other two islands, and they own the houses. In addition, women are more likely to obtain a micro-credit than men, thanks to their tradition of savings and better reimbursement rates. However, women face many difficulties in employment: only 43% of women work, often in more precarious jobs, their share of the wage is much lower and most of their jobs are in agriculture, on family plots. The project will ensure that its objectives and activities are specifically promoted to women and that they perceive clearly their own benefits to participate. The project will involve women in all capacity building activities and strengthen their role in the community's development. Project activities will take into account women's specific capacities and tasks and aim to alleviate the burden of their chores. The project will adopt gender specific indicators to monitor women's participation in all activities as well as their perception of the project's impact on their daily lives.

**Table 9. Incremental Cost Matrix**

Cost/Benefit	Baseline (B)	Alternative (A)	Increment (A-B)
<b>BENEFITS</b>			
<b>Global benefits</b>	Under the 'business-as-usual' scenario, only one actively managed protected area (Moheli Marine Park) will be functioning in the entire area of the Union of the Comoros. Other areas that have been recommended for conservation or have been part of community conservation initiatives will not receive a coordinated and effective support for their establishment and operation. As a result, natural resources in the Comoros will continue to be degraded and risk the extinction of endemic and rare species and critical ecosystem services.	The project which aims to establish an expanded and functional system of protected areas (PAs) in the Union of Comoros, representative of the country's biodiversity endowment and with good prospects for a sustainable future and increase management effectiveness for Comoros' PAs and MPAs providing an increased protection to habitats in approx. 98,000 ha of protected land/seascape and to the species that they harbour. The direct and indirect benefits to local community will create tangible incentives for them to support efforts to preserve the biodiversity of the Comoros.	The GEF increment will contribute in an incremental manner to removing the barriers to establishing a PA/MPA system that is effectively managed and representative of Comoros' biodiversity. This system will count on terrestrial PAs that protect unique closed and open rainforest ecosystems, montane and low-lying dry vegetation, as well as mangroves patches in all of islands that compose the Union of Comoros. At least 50,525 ha of terrestrial habitats, most of it with high conservation value, will be protected. The project will also help create MPAs that protect the critically endangered coelacanth ( <i>Latimeria chalumnae</i> ), but also beaches, which are nesting grounds to threatened marine turtles, mudflats and coral reefs that harbour important marine biodiversity typical of the Indian Ocean biodiversity hotspot. The entire expanded PA/MPA estate will extend over at some 98,000 ha of land/seascapes in Comoros. Within these areas, a number of globally important species will enjoy increased protection as a result of the project: e.g. the dugong, the Mongoose lemur ( <i>Eulemur mongoz</i> ), the Comoro black flying fox ( <i>Pteropus livingstonii</i> ) and the Comoro Rousette

Cost/Benefit	Baseline (B)	Alternative (A)	Increment (A-B)
			<i>(Rousettus obliviosus)</i> . The designation of these areas will also include 3 Important Bird Areas and 3 Ramsar sites. The improved land/seascape management in PAs will contribute to maintain soil and water resources on the islands, increase carbon stocks, reduce GHG emissions, and protect biodiversity.
<b>National and local benefits</b>	Under the ‘business-as-usual’ scenario, framework for protected areas in the Comoros will remain inadequate as regards policy, and institutional and legislative aspects. The national network of protected areas will not be able to ensure the preservation of a representative sample of the value elements of the biodiversity of the Comoros while preserve ecosystem functions for the benefit of neighboring communities. The several initiatives to create protected areas that have been undertaken in recent years will function poorly due to a lack of a consistent legislative framework nor rational plan designed to preserve all natural heritage of the Comoros. The question of leadership, roles and responsibilities for the establishment and management of protected areas is not clear within the Government of the Union and between the Union and the Islands Governorates. The Comoros is in urgent need of a nation wide system to support the Government’s efforts in protecting its natural resources.	The project has been designed to consolidate and harmonize biodiversity conservation efforts on every level by developing systemic, institutional and individual capacities, by providing political, institutional and legal frameworks to develop, manage and ensure the sustainability of the protected areas system. This project will focus on investments in institutional creation and development – effectively establishing a Union-wide PA management authority that is able to provide a systematic technical and administrative support to the range of initiatives currently moving forward without structure or adequate technological or financial capacity. As well, the lack of examples of effective management and co-management of protected areas in Comoros limits the ability of stakeholders to develop the skills and the experience necessary to effectively manage protected areas.	The goal of the project is to establish in Comoros an effectively managed PA system, composed of both PAs and MPAs, a system that is representative of the country’s biodiversity and that provides a much more significant coverage to unprotected ecosystems and safehaven to threatened species. The sustainability of this system also needs to be secured. The Baseline project, contributing towards this long-term solution and underpinning the GEF investment, comprises both national investments and commitments and donor financed interventions.

## SECTION III: Total Budget and Workplan

<b>Atlas Award ID and Project ID</b>	00080808 / 00090377
<b>Award Title:</b>	PIMS 4529: FSP Seychelles Outer Islands
<b>Business Unit:</b>	B0371

<b>Project Title:</b>	Development of a national network of terrestrial and marine protected areas representative of the Comoros' unique natural heritage and co-managed with local village communities
<b>Implementing Partner (NIM agency)</b>	Ministry of Production, Energy, Environment, Industry and Handicraft (MPEEIH)

4960Project Components	Impl. Partner	Fund ID	Donor Name	ATLAS Budget Code and Description	Amount Year 1 (USD)	Amount Year 2 (USD)	Amount Year 3 (USD)	Amount Year 4 (USD)	Amount Year 5 (USD)	Amount Year 6 (USD)	Total (USD)	Notes
1) PA System Support	NIM	62000	10003-GEF	71400 Contractual Services - Individ	9,000	18,000	18,000	18,000	18,000	18,000	99,000	1
	NIM	62000	10003-GEF	71400 Contractual Services - Individ	9,000	18,000	18,000	18,000	18,000	18,000	99,000	2
	NIM	62000	10003-GEF	71400 Contractual Services - Individ		20,000	20,000	20,000	10,000	10,000	80,000	3
	NIM	62000	10003-GEF	71400 Contractual Services - Individ	11,500	23,000	23,000	11,500			69,000	4
	NIM	62000	10003-GEF	71400 Contractual Services - Individ	7,500	15,000	15,000	15,000	15,000	15,000	82,500	5
	NIM	62000	10003-GEF	71600 Travel	10,000	15,000	15,000	15,000	15,000	10,000	80,000	6
	NIM	62000	10003-GEF	72100 Contractual Services-Companies		20,000	20,000	20,000	15,000	5,000	80,000	7
	NIM	62000	10003-GEF	72100 Contractual Services-Companies	5,000	9,000	9,000	9,000	9,000	9,000	50,000	8
	NIM	62000	10003-GEF	72100 Contractual Services-Companies		40,000					40,000	9
	NIM	62000	10003-GEF	72100 Contractual Services-Companies	20,000						20,000	10
	NIM	62000	10003-GEF	72200 Equipment and Furniture		10,000					10,000	11
	NIM	62000	10003-GEF	72800 Information Technology Equipmt	27,500				27,500		55,000	12
	NIM	62000	10003-GEF	72800 Information Technology Equipmt		20,000					20,000	13
	NIM	62000	10003-GEF	73100 Rental & Maintenance-Premises	3,000	8,000	8,000	8,000	8,000	3,000	38,000	14
	NIM	62000	10003-GEF	73200 Premises Alternations		24,000					24,000	15
	NIM	62000	10003-GEF	74100 Professional Services	3,200	3,200	3,200	3,000	2,200	3,200	18,000	16
	NIM	62000	10003-GEF	74500 Miscellaneous Expenses	500	800	700	700	700	600	4,000	17
				<b>Sub-Total Comp 1 GEF</b>	<b>106,200</b>	<b>244,000</b>	<b>149,900</b>	<b>138,200</b>	<b>138,400</b>	<b>91,800</b>	<b>868,500</b>	
				<b>TOTAL Comp 1</b>	<b>106,200</b>	<b>244,000</b>	<b>149,900</b>	<b>138,200</b>	<b>138,400</b>	<b>91,800</b>	<b>868,500</b>	
2) Site level operationalisation	NIM	62000	10003-GEF	71200 International Consultants		30,000	30,000	30,000	30,000		120,000	18
	NIM	62000	10003-GEF	71200 International Consultants			42,000			42,000	84,000	19
	NIM	62000	10003-GEF	71200 International Consultants		30,000					30,000	20
	NIM	62000	10003-GEF	71300 Local Consultants		10,000	10,000	10,000	10,000		40,000	21
	NIM	62000	10003-GEF	71400 Contractual Services - Individ	10,000	20,000	20,000	20,000	20,000	20,000	110,000	22
	NIM	62000	10003-GEF	71400 Contractual Services - Individ		100,000					100,000	23
	NIM	62000	10003-GEF	71400 Contractual Services - Individ	6,000	12,000	12,000	12,000	12,000	12,000	66,000	5
	NIM	62000	10003-GEF	71600 Travel	25,000	35,000	38,000	40,000	37,000	25,000	200,000	6
	NIM	62000	10003-GEF	72100 Contractual Services-Companies		34,000		33,000		33,000	100,000	24
	NIM	62000	10003-GEF	72100 Contractual Services-Companies		25,000	25,000	25,000	15,000	10,000	100,000	25

4960Project Components	Impl. Partner	Fund ID	Donor Name	ATLAS Budget Code and Description	Amount Year 1 (USD)	Amount Year 2 (USD)	Amount Year 3 (USD)	Amount Year 4 (USD)	Amount Year 5 (USD)	Amount Year 6 (USD)	Total (USD)	Notes
	NIM	62000	10003-GEF	72100 Contractual Services-Companies	15,000	20,000	20,000	20,000	15,000	5,000	95,000	7
	NIM	62000	10003-GEF	72100 Contractual Services-Companies	5,000	9,000	9,000	9,000	9,000	9,000	50,000	26
	NIM	62000	10003-GEF	72200 Equipment and Furniture	112,500	337,500					450,000	27
	NIM	62000	10003-GEF	72300 Materials & Goods	25,000	60,000	60,000	60,000	50,000	45,000	300,000	28
	NIM	62000	10003-GEF	72400 Communic & Audio Visual Equip	60,000	180,000					240,000	29
	NIM	62000	10003-GEF	72500 Supplies		45,000			45,000		90,000	30
	NIM	62000	10003-GEF	72500 Supplies		25,000			5,000		30,000	31
	NIM	62000	10003-GEF	72600 Grants		87,500	87,500	87,500	87,500		350,000	32
	NIM	62000	10003-GEF	72600 Grants	14,500	28,000	28,000	28,000	28,000	23,500	150,000	33
	NIM	62000	10003-GEF	72800 Information Technology Equipmt	46,250				46,250		92,500	12
	NIM	62000	10003-GEF	73200 Premises Alternations		150,000	150,000				300,000	34
	NIM	62000	10003-GEF	73400 Rental & Maint of Other Equip	10,000	10,000	10,000	10,000	10,000	10,000	60,000	35
	NIM	62000	10003-GEF	74100 Professional Services	4,000	3,000	3,000	3,000	3,000	2,000	18,000	16
	NIM	62000	10003-GEF	74500 Miscellaneous Expenses	1,200	1,200	1,500	1,200	1,200	1,227	7,527	17
				<b>Sub-Total Comp 2 GEF</b>	<b>334,450</b>	<b>1,252,200</b>	<b>546,000</b>	<b>388,700</b>	<b>423,950</b>	<b>237,727</b>	<b>3,183,027</b>	
	NIM	4000	UNDP	71400 Contractual Services - Individ			200,000	200,000			400,000	36
	NIM	4000	UNDP	71600 Travel			25,000	25,000			50,000	6
				<b>Sub-Total Comp 2 UNDP</b>	<b>0</b>	<b>0</b>	<b>225,000</b>	<b>225,000</b>	<b>0</b>	<b>0</b>	<b>450,000</b>	
				<b>TOTAL Comp 2</b>	<b>334,450</b>	<b>1,252,200</b>	<b>771,000</b>	<b>613,700</b>	<b>423,950</b>	<b>237,727</b>	<b>3,633,027</b>	
3) Project Mgt	NIM	62000	10003-GEF	71400 Contractual Services - Individ	6,000	12,000	12,000	12,000	12,000	12,000	66,000	37
	NIM	62000	10003-GEF	71400 Contractual Services - Individ	4,550	9,100	9,100	9,100	9,100	9,100	50,050	38
	NIM	62000	10003-GEF	71400 Contractual Services - Individ	1,500	3,000	3,000	3,000	3,000	3,000	16,500	5
	NIM	62000	10003-GEF	72400 Communic & Audio Visual Equip	1,500	3,000	3,000	3,000	3,000	1,500	15,000	39
	NIM	62000	10003-GEF	72500 Supplies	1,000	2,000	2,000	2,000	2,000	1,000	10,000	40
	NIM	62000	10003-GEF	74100 Professional Services	3,000	3,000	3,000	3,000	3,000	3,000	18,000	41
	NIM	62000	10003-GEF	74500 Miscellaneous Expenses	1,900	3,800	3,800	3,800	3,000	2,623	18,923	17
				<b>Sub-Total Proj Mgt GEF</b>	<b>19,450</b>	<b>35,900</b>	<b>35,900</b>	<b>35,900</b>	<b>35,100</b>	<b>32,223</b>	<b>194,473</b>	
	NIM	4000	UNDP	74300 Contributions	9,000	9,000	9,000	9,000	9,000	5,000	50,000	42
			<b>Sub-Total Proj Mgt UNDP</b>	<b>9,000</b>	<b>9,000</b>	<b>9,000</b>	<b>9,000</b>	<b>9,000</b>	<b>5,000</b>	<b>50,000</b>		
			<b>TOTAL Proj Mgt</b>	<b>28,450</b>	<b>44,900</b>	<b>44,900</b>	<b>44,900</b>	<b>44,100</b>	<b>37,223</b>	<b>244,473</b>		

<b>TOTAL GEF</b>	<b>460,100</b>	<b>1,532,100</b>	<b>731,800</b>	<b>562,800</b>	<b>597,450</b>	<b>361,750</b>	<b>4,246,000</b>	
<b>TOTAL UNDP</b>	<b>9,000</b>	<b>9,000</b>	<b>234,000</b>	<b>234,000</b>	<b>9,000</b>	<b>5,000</b>	<b>500,000</b>	
<b>GRAND TOTAL</b>	<b>469,100</b>	<b>1,541,100</b>	<b>965,800</b>	<b>796,800</b>	<b>606,450</b>	<b>366,750</b>	<b>4,746,000</b>	

Budget Notes	
1	Budget reserve for Accounting Manager(local contract) for 5.5 year(s), at appox. \$18K per year. Refer to TOR.
2	Budget reserve for Communication and community engagement expert (local contract) for 5.5 year(s), at appox. \$18K per year. Refer to TOR.
3	Budget reserve for DB / GIS expert (local contract) for 4 year(s), at appox. \$20K per year. Refer to TOR.
4	Budget reserve for Legal Expert (local contract) for 3 year(s), at appox. \$23K per year. Refer to TOR.

<b>Budget Notes</b>	
5	National Project Manager: 5.5-year assignment budgeted for. Tasks are roughly 10% managerial (amount allocated to the project's management budget) and 90% technical (allocated equally across the the components). Refer to TOR.
6	Travel costs in connection with project activities under this Component
7	Workshop and meeting costs (bulk) under this component for supporting various activities
8	PA Board and Advisory Group Meetings, plus other meetings
9	Engagement of a qualified service provider (global procurement) for delivering training of project in GIS, PA mgt and PA finance
10	Inception Workshop and other project initiation costs
11	Office furniture and IT equipment to the project team at large.
12	IT equipment to the project team (Comp. 1, at the central level will count on min. 10 computers; and Comp. 2, at site level, will count on min. 25 computers) plus periepherals and supplies.
13	High capacity server for hosting the PA database and expanding MEEIA's data management capacity
14	Rental of external rooms as needed to accommodate service providers in the field or other needs. Utility bills in offices provided by the State.
15	Renovation of office space in the project's head office in the capital.
16	Translations, interpretation services, editorial, webdesign etc. through professional services
17	Miscellaneous costs: insurance, bank charges, security and other blended costs.
18	Short-term consultancy budget reserve for Senior int. economist, Francophone, for supporting the advancement of the livelihoods, tourism and PES components processes respectively foreseen under Outputs 1.4, 2.3 and 2.4. Several support missions may be foreseen during project implementation. for 20 week(s), at approx. \$3 per week. Sdt TOR to be completed at inception.
19	Mid-term Review and Terminal Evaluation Consultancies (as per UNDP and GEF policies). Costed in bulk at \$44K each. May be later broken down to include (71200 Int Cons and 71300 Local Cons), or may be carried out as a service provider package contract (72100 Contr Serv-Co). Std TOR as per policy in effect.
20	Short-term consultancy budget reserve for Inception Phase Training and Strategising for 10 week(s), at approx. \$3 per week. Sdt TOR to be completed at inception.
21	Short-term consultancy budget reserve for Nat. economist for supporting the advancement of the livelihoods, tourism and PES components processes respectively foreseen under Outputs 1.4, 2.3 and 2.4. Retainer contract. The consultant is active prior to the mission of the international consultant, during and after. for 40 week(s), at approx. \$0.5 per week. Sdt TOR to be completed at inception.
22	Budget reserve for Scientific experts in marine and terrestrial biodiversity to support site level management (part time at 50%) (local contract) for 5.5 year(s), at approx. \$20K per year. Refer to TOR.
23	Budget reserve for Deputy PM / Chief Technical Advisor - expert in biodiversty conservation, planning, monitoring and evaluation (IC for year 1 to ensure quick recruitment) for 1 year(s), at approx. \$100K per year. Refer to TOR.
24	Engagement of a qualified service provider (global procurement) with respect to ecosystem and species management works under Activity 2.1.4 (Implementation of ecosystem management in sites: e.g. strict conservation of critical habitats and cost-effective restoration of others where needed)
25	Engagement of a qualified service provider (global procurement) with respect to IAS clearing under Activity 2.1.4 (Implementation of ecosystem management in sites: e.g. strict conservation of critical habitats and cost-effective restoration of others where needed - focus on clearing of Invasive Alien Species)
26	Site level meetings with communities, not covered under grants

<b>Budget Notes</b>	
27	Heavy-duty and light vehicles (motorcycles and bikes), boats and other necessary equipment. Allocation for essential equipment and supplies in connection with (Activity 2.1.2 PA sites are equipped): The most essential vehicles and equipment will be financed from GEF. Other from co-financing. (1) Procurement of essential heavy duty & light vehicles for the each of the islands, 4x4 vehicles, equipped with lockable tonneau covers, bullbar, winch, tow bar and spotlights; motor/quadbikes; and bicycles. (allocation in bulk \$100/island). (2) Procuring boats of suitable size and speed for patrolling MPAs (\$20K/island, at least 3 in total) (3) Other necessary equipment for fuel storage (if needed), water and sanitation, solar lightning and diving (approx. allocation \$30K/island). Allocations including transport / import of the equipment, plus some maintenance and operations costs.
28	Forestry supplies, fuel, vehicle spare parts, light field equipment, including protection, and other materials
29	Comms equipment. Allocation for essential equipment and supplies in connection with Activity 2.1.2 (PA sites are equipped). Costs for procuring, installing and maintaining a 'turnkey' voice and data radio and satellite (\$80K/island, including some maintenance and operations costs). The most essential comms equipment will be financed from GEF. Other from co-financing.
30	Staff uniforms and safety equipment: Allocation various supplies in connection with Activity 2.1.2 (PA sites are equipped / approx. \$30K / island).
31	Various supplies, stationary, camping materials and water purification etc. under this component
32	Budgetary reserve of r NGOs and CBOs to get involved in supporting site level operationalisaiton through the competitive grant modality. This applies inparticular to Outputs 3.1 (consultations and site demarcation), 2.1 (PA management), 2.2 (resource use governance), and 2.4 (livelihoods). For each of the activity sets, NGOs/CBOs will be under professional guidance from project specialists.
33	Travel and mobility indemnity costs for PA manager (conservateur) and a Local Communication & community engagement officer in non-community managed sites. Each of the following sites (or group of sites) in brackets will each have a PA manager and a Communication & community engagement officer appointed by the government to lead and co-lead site operationalization. They will engage park rangers recruited from the local communities under arrangements that will be defined upon inception. The sites are: [site 3] Mwali Rainforest National PA; [site 2] Karthala Forest (also co-supporting Hantsogoma and Ngubadju Community Reserves); [sites 4 and 10] Massif of Mt Ntringui / Bimbini Peninsula (also co-supporting Moya Community Reserve).
34	Establishment of new office space in the field
35	Vehicle maintenance and rental of heavy duty equipment for water and forestry works
36	Budget reserve for Deputy PM / Chief Technical Advisor - expert in biodiversty conservation, planning, monitoring and evaluation (FTA-P4 level as from year 2 or 3, proforma costs) for 2 year(s), at appox. \$200K per year. Refer to TOR.
37	Budget reserve for Secretary / Administrative assistant (local contract) for 5.5 year(s), at appox. \$12K per year. Sdt TOR.
38	Budget reserve for Driver / Logistician (local contract) for 5.5 year(s), at appox. \$9.1K per year. Sdt TOR.
39	Communication, including cell phone contracts or airtime and internet connectivity
40	Office supplies
41	Project annual audit
42	Security: common services contribution

## SECTION IV: Additional Information

### PART I: Letters of co-financing commitment

Name of Co-financier	Date of letter	Amount (\$)	Note
Ngazidja (Grand Comores) Autonomous Island: Commissariat for the Environment, Sustainable Development, Energy, Employment, Entrepreneurship and Solidarity, Regional Directorate General of Environment & Forests	no date	500,000	[1]
Moheli Ecotourism House	no date	500,000	[2]
Ministry of the Interior and Information, Decentralization and Institutional Relations, Directorate General of Civil Security	02 March 2014	400,000	
Ngazidja (Grand Comores) Autonomous Island: Djoumoichongo Steering Committee	12 March 2014	400,000	
Ndredou Association for Cultural Exchange and Protection of Environment, Grand Comores	13 March 2014	300,000	
Association for Protection of Gombessa-APG	15 March 2014	500,000	
UMAMA Association, Bimbini Ndzuan, Anjouan	21 March 2014	300,000	
Vice Presidency, Directorate of Planning, Development & Habitat	24 March 2014	1,000,000	
Anjouan: Action Comoros	25 March 2014	300,000	
Anjouan Autonomous Island: Commissariat for Production and Environment, General Directorate of Environment & Forest	26 March 2014	400,000	
Moheli Autonomous Island: Commissariat for Rural Production, Environment, Fisheries, Handicrafts and the Diaspora, General Directorate of Environment & Forests	27 March 2014	300,000	
MPEEIA, National Directorate of Fishery Resources	27 March 2014	820,000	
Anjouan Autonomous Island: EDA – Anjouan’s Directorate for Electricity	27 March 2014	500,000	
Moheli Autonomous Island: Commissariat for Transport, Postal Services, Telecommunications and Insularly Companies, Directorate of Tourism	28 March 2014	250,000	
MPEEIA, National Center for Fisheries Oversight	31 March 2014	408,000	
Ministry of Postal Services, Telecommunications, New Technologies, Information, Transport and Tourism, Directorate of Tourism & Hospitality Industry	31 March 2014	500,000	
University of Comoros	31 March 2014	2,000,000	
MPEEIA, National Directorate of Agriculture Strategies & Livestock	04 April 2014	2,200,000	
Anjouan Autonomous Island: Commissariat for Local Communities and Tourism, Directorate of Tourism and Hospitality Industry	04 April 2014	400,000	
NGO Ulanga Ngazidja	04 April 2014	328,800	[3]
Ngazidja (Grand Comores) Autonomous Island: Intervention Group for Sustainable Development (public utility body)	05 April 2014	200,000	
AIDE: Association in support of Development & Environment	07 April 2014	315,000	
Comoros National Museum, National Library & Scientific Research Center	07 April 2014	400,000	
MPEEIA, General Directorate of Environment and Forests	07 April 2014	2,000,060	
Ngazidja (Grand Comores) Autonomous Island: Commissariat for Production, Transport, Tourism, Infrastructural Development, and Spokesman for the Executive General Directorate for Tourism	07 April 2014	250,000	
MPEEIA - Ministry of Production, Environment, Energy, Industry & Craftwork, General Secretariat	07 April 2014	300,000	
United Nations Comoros / UNDP	02 April 2014	500,000	
NGO Dahari	09 May 2014	498,454	
French Development Agency (AFD)	12 May 2014	4,110,000	
UNESCO - United Nations Educational, Scientific and Cultural Organization	13 May 2014	750,000	
<b>TOTAL Amount mobilized</b>		<b>21,630,314</b>	

Notes:

[General] Letters in French are accompanied by translations.

[1] Received by the UNDP Country Office Moroni on 26 February 2014.

[2] Received by the UNDP Country Office Moroni on 27 February 2014.

[3] Amounts in Euro were converted to USD where no USD is indicated. The letter from NGO Ulanga Ngazidja mentions the amount of 240,000 EUR written out in full.

See separate file for letters [\[Link\]](#)

## **PART II: Project Maps**

*Not included at this stage. :*

## **PART III: Stakeholder Involvement Plan and Coordination with other Related Initiatives**

### ***Information dissemination, consultation, and similar activities that took place during the PPG***

189. Project design was a highly participatory process, in line with UNDP's and GEF's requirements. During the project preparation stage, numerous meetings were held with stakeholders in order to assess their interests in the project and define their roles and responsibilities in project implementation (see the Stakeholder Analysis in Section I, Part I for a description of the primary stakeholders and their expected participation in / collaboration with the project). Field trips were carried out to each island, and numerous stakeholders participated in the development of the project proposal. Two workshops at the national level were held to discuss major issues of the project and to solicit stakeholder inputs and validation.

190. During the first mission to prepare the project, authorities and stakeholders concerned with the environment and biodiversity conservation were met on each island to introduce the project and gather their priorities and comments. Staff from each Directorate of Environment has been assigned to accompany the project preparation team. All sites where the creation of a protected area is planned have been visited to better understand the challenges of implementing PAs in each specific context. Stakeholders in each of the sites were identified, including representatives of each of the riparian villages, local and religious leaders, resource users, associations, administration in charge of the Environment and law enforcement officers to invite them to a meeting to present the project and conduct a participatory assessment of threats and site management. Based on the approximate boundaries of the protected area to establish (using a map) and threats listed in the GEF tool, participants identified the threats that affect the protected area and its resources and gave their perception of the severity of the threats, leading to discussions that have allowed them to enrich their understanding of the issues in the light of interventions and knowledge of stakeholder groups involved.

191. At the request of several participants, it was decided to build on the momentum created during these meetings and to hold a workshop to identify possible solutions, some of which could be incorporated into the project. A two-day workshop gathered representatives of each of the islands, national experts in the fields of environment and natural resources management (including forestry experts, marine biology, customs, transport and legal experts) and UNDP representatives, to examine most important threats and identify possible solutions to lift barriers to effective management of biodiversity and PAs. Such solutions may be implemented in the project or guide the design of management measures for the system and for individual PAs.

192. A workshop gathering key national stakeholders in the development of the national system of protected areas, including administration officials at the Union and the Islands levels, experts in various disciplines, including legal experts, and UNDP representatives, was held to review and validate proposals for the distribution of roles and responsibilities in the supervision and management of the national system of PAs. Results are presented in Annex 3 and shall serve as a reference to guide the clarification of institutional mechanisms, the creation of the structure in charge of the PA system, as well as the development of the policy and legislative frameworks.

### ***Stakeholder involvement plan***

193. The project's design incorporates activities and mechanisms to ensure on-going and effective stakeholder participation in project implementation:

- Project inception workshop to enable stakeholder awareness of the start of project implementation: The project will be launched by a multi-stakeholder workshop. This workshop will provide an opportunity to provide all stakeholders with the most updated information on the project and the project work plan. It will also establish a basis for further consultation as the project's implementation commences.
- Project Steering Committee to ensure representation of stakeholders interests in project: A Project Steering Committee (PSC) will be constituted to ensure broad representation of all key interests throughout the project's implementation. The representation, and broad terms of reference, of the PSC are further described in Section I, Part III (Management Arrangements) of the Project Document.
- Project communications to facilitate on-going awareness of project: The project will develop, implement and maintain a communications strategy to ensure that all stakeholders are informed on an on-going basis about the project's objectives and activities; overall project progress; and the opportunities for involvement in various aspects of the project's implementation.
- Establishing collaborative governance structures to formalise stakeholder involvement in PA management: The project will actively seek to formalise collaborative governance structures, i.e. collaborative management committees, at the seven protected areas supported by the project in order to ensure the continuous participation of government at the Union, Island and commune levels, local authorities, scientific institutions, and private stakeholders in the project and in the management of the PA system.
- Capacity building: Project activities are focused on building the capacity – at the systemic, institutional and individual levels – of the institutions, local community organisations and other stakeholders to ensure the sustainability of initial project investments. Significant GEF resources are directed at building the capacities of MPEEIH at the institutional level to lead ecosystem-level information management and planning for conservation and development, and of the new institution dedicated to the PA system to enable more effective PA management at the Union and site levels.

### ***Coordination with other related initiatives***

194. The project will closely coordinate with on-going UNDP financed interventions which are part of the Country Programme, namely the program focusing on tourism "Development and promotion of responsible ecotourism in the Union of Comoros" of the Enhanced Integrated Framework (EIF) which aims to integrate Comoros in regional and international trade. This program's objectives converge with those of outputs 2.3 and 2.4 of the current project: 1) Increase the number of visitors in protected areas and duration of their stay, and the number of jobs in tourism businesses and related sectors (accommodation, catering, tourism, agriculture and handicrafts), 2) Increase tourism revenues of village communities in and around protected areas (terrestrial and marine Mwali PA, Karthala forest, Massif du Mont Ntringui), and 3) Promote the cultural, artistic, culinary, and religious heritage. The project will also coordinate its action with GEF projects, in particular those implemented by UNDP and the relevant SGP ones – e.g. on NRM related themes, e.g. APG's work on the establishment of the Coelacanth zone, and surveys conducted around the Turtle Island. Close coordination and collaboration will be sought with the UNDP-GEF/LDCF projects "*Adapting water resource management in the Comoros to expected climate*

*change*” (on-going) and “*Enhancing adaptive capacity and resilience to climate change in the agriculture sector in Comoros*”. These are particularly important to the extent that they relate to land-uses (agriculture) and ecosystem services (water yields). Where sites coincide, synergies will be further developed.

195. Close coordination and collaboration will be sought with initiatives financed by AFD that are co-financiers to this project. The development of the project’s activities during the PPG were done in full consultation with these partners. AFD has an office in Comoros and is financing: (i) the Djando project on reforestation and protection of waterways on Mwali Island; and (ii) a project for operationalising the Moheli Marine Park, where work is just initiating on strengthening the governance system for collaborative management of the PA and reconciling conservation of natural resources with the development of economic and income generation activities. This will be particularly relevant for Component 2 activities of this project. This project is also developing a Conservation Trust Fund (CTF) for long term financing of the PMM which will be integrated in the financing mechanism developed in Component 1 of this project to coordinate and implement long-term financing solutions for the PAs of Comoros. AFD and UNDP have agreed to harmonize interventions in Mwali Island, merge project teams and work plans and set up one common PSC for both projects.

196. The project will coordinate with the EU-funded SmartFish Programme implemented jointly by IOC and FAO which aims to support the promotion of ecotourism in order to generate alternative and sustainable livelihoods for fishing communities living in coastal areas, including on marine protected areas and conservation areas. Six fishing communities identified within PAs covered by this project will receive training to be able to offer quality services and market them with hotels and agencies which will be particularly relevant to outputs 2.3 and 2.4.

197. Discussions with IFAD seeked to harmonize their interventions as part of the National Program for Sustainable Human Development and the on-going GEF-IFAD BD LD MSP (*Integrated Ecological Planning and SLM in Coastal Ecosystems in the Comoros*). Although the MSP design had foreseen the legal declaration of new PAs, including in Bimbini, it was agreed to support the development of locally-managed marine areas for the collective management of marine and coastal resources of the lagoon surrounding the peninsula. These interventions will not in any way duplicate what is being proposed under this project, but rather complement it by developing a sustainable management system of fish resources consistent with the collaborative management approach and support diversification of livelihoods for coastal communities. This present project will build on the achievements of the IFAD project with respect to protected areas and community-based sustainable management of marine resources.

198. Another key co-financier is the Indian Ocean Commission, which is investing in sustainable management of coastal areas with EC funding and though a regional initiative. This project also will draw on scientific production that has a direct application to conservation, which includes some of the work being financed by the EC and the University of Turin as briefly described in the ‘baseline investment analysis’ for this project. Finally, coordination and collaboration between this project and other interventions will include related initiatives by e.g. FAO (on forests and fisheries), but equally on the fight against IAS and climate change, to the extent that they relate to project activities.

## PART IV. Terms of References for key project staff

### OVERVIEW OF PROJECT CONSULTANTS

All TORs will be fully developed and validated prior to the launching of recruitment processes. The amounts do not reflect remuneration, but budgetary reserves. The exact remuneration will be subject to procurement processes.

*Table 10: Overview of Inputs from Technical Assistance Consultants per financier*

Contract: UNDP nat. or Int.	Purpose	GEF	UNDP	quant	at \$	rate	duration
<b>Project Core</b>							<b>in years</b>
N	National Project Manager (PM - 90% technical , 10% managerial)	x		5.5	30,000	per year for	5.5
I	(IC for year 1) Deputy PM / Chief Technical Advisor - expert in biodiversity conservation, planning, monitoring and evaluation	x		1	100,000	per year for	1
I	(FTA-P4 level as from year 2 or 3, proforma costs) Deputy PM / Chief Technical Advisor - expert in biodiversity conservation, planning, monitoring and evaluation		x	1	200,000	per year for	2
N	Accounting Manager	x		1	18,000	per year for	5.5
N	Scientific experts in marine and terrestrial biodiversity to support site level management (part-time at 50%)	x		2	20,000	per year part-time at 50% for	5.5
N	DB / GIS expert	x		1	20,000	per year for	4
N	Communication and community engagement expert	x		1	18,000	per year for	5.5
N	Legal Expert	x		1	23,000	per year for	3
N	Secretary / Administrative assistant	x		1	12,000	per year for	5.5
N	Driver / Logistician	x		1	9,100	per year for	5.5
<b>Short and medium term consultants</b>							<b>in years</b>
I	Inception Phase Training and Strategising	x		1	3,000	per week for	10
I	Mid-Term review and terminal evaluation	x		2	3,000	per week for	14
I	Senior int. economist, Francophone (livelihoods, tourism, PES)	x		2	3,000	per week for	20
N	Nat. economist (livelihoods, tourism, PES)	x		2	500	per week for	40

**Table 11: Overview of proposed government appointments to co-support the project**

Level	Government appointments	quant
Gov (Union)	Project Director: Senior government official to assist with project oversight	1
Gov (Union)	Mwali Island Conservation Area (PMM and Moheli Rainforest) - PA manager / Site Director	1
Gov (Island)	Mwali Island Conservation Area (PMM and Moheli Rainforest) - Local Communication & community engagement officer	1
Gov (Union)	Karthala (co-supports Hantsogoma and Ngubadju Community Reserves) - PA manager	1
Gov (Island)	Karthala - Local Communication & community engagement officer (co-supports Hantsogoma and Ngubadju Community Reserves)	1
Gov (Union)	Mt Ntringui - PA Manager (co-supporting Moya Community Reserve)	1
Gov (Island)	Mt Ntringui - Local Communication & community engagement officer (co-supporting Moya, Hantsogoma and Ngubadju Community Reserves)	1
Gov (Union)	Bimbini Peninsula - PA Manager (co-supporting Moya Community Reserve)	1
Gov (Island)	Bimbini Peninsula - Local Communication & community engagement officer (co-supporting Moya Community Reserves)	1
Gov (local)	Eco-guards co-supported recruited from local communities (Refert to Annex 5, under ' <a href="#">PA institutional framework</a> ' for more details and proposals)	According to needs at site level

**Note:** For PMM and Moheli Rainforest, AFD is providing PA management support at various levels. The project will collaborate closely with AFD financed initiatives on Mwali. For Moya Forest, the NGO Dahari has been engaged for some time providing ecosystem management services and will collaborate with the project team with respect to PA gazettal and other aspects of operationalising the Community Forest as a PA.

## NATIONAL PROJECT COORDINATOR

### Duties and Responsibilities

- Ensure the timely and effective implementation of all components of the project and supervise and coordinate the production of project outputs, as per the project document;
- Mobilize all project inputs in accordance with procedures for nationally implemented projects;
- Supervise and coordinate the work of all project staff, consultants and sub-contractors;
- Coordinate the selection and recruitment of project personnel;
- Working closely with MPEEIH, UNDP and the CTA, coordinate the establishment of the Project Steering Committee and of the Advisory Committee;
- Working closely with the CTA, and within first two months of project start up, ensure the preparation of the Inception Workshop, official launching of the project and report, of the 1<sup>st</sup> PSC meeting and of official local launchings;
- Prepare and revise project work and financial plans as required by MPEEIH and UNDP;
- Liaise with UNDP, relevant government agencies, and all implementing partners, including donor organizations –namely AFD– for effective coordination of all project activities;
- Oversee the effective realisation of all partners’ co-financing to the project;
- Ensure timely submission of the Inception Report, Combined UNDP-GEF Project Implementation Review/Annual Project Report (PIR/APR), technical reports, quarterly financial reports, and other reports as may be required by UNDP, GEF, MPEEIH and other oversight agencies;
- Disseminate project reports and respond to queries from concerned stakeholders;
- Coordinate strategic and operational planning and evaluation of the progress and performance of the project with the support of the project specialist staff and official submission of documents;
- Carry out regular, announced and unannounced inspections of all sites and activities of the project site management units;
- Report progress of project to the steering committee, and ensure the fulfilment of steering committee directives;
- Coordinate, with the support of the CTA, all steps leading to the participatory development of the legislative framework for the management of the PA system and establishment of the institutional entity dedicated to the management of the PA system (Output 1.1);
- Assist relevant government agencies and implementing partners with development of essential skills through assessing priority capacity development needs for major actors involved in the management of the PA system and biodiversity conservation, identifying training opportunities, and coordinating the implementation of a capacity development plan through partnerships with academic institutions (Output 1.2);
- Work closely with the CTA in ensuring exchange and sharing of experiences and lessons learned among site management units, with relevant institutions and initiatives, and through the PA newsletter and website, at the national and international levels (Output 1.2);
- Work closely with the CTA to develop a PA system strategy (Output 1.3) and submit recommendations and associated documentation to the MPEEIH for the creation or modification of PAs;
- Work in close collaboration with the project implementation team and the CTA to provide all new PAs with essential infrastructure and equipment, develop and implement management plans including surveillance and monitoring, and support the negotiation of agreements with village associations for PA collaborative management (Output 2.1);
- Work in close collaboration with the national consultant – land tenure expert to coordinate investigations and negotiations in view of securing long-term use rights (Output 2.2);

- Ensure close collaboration between the project implementation team, the international consultant on sustainable ecotourism and other projects involved in the implementation of ecotourism initiatives in Comoros to develop a strategic plan for the development of sustainable tourism across the PA network (Output 2.3);
- Contribute to the development and implementation of a livelihood programme through the establishment of partnerships

#### Qualifications

- A post-graduate university degree (MS or PhD) in natural resource management or environmental sciences or a related field;
- At least 10 years of experience in natural resource planning and management (preferably in the context of protected area planning and management);
- At least 5 years of project management experience;
- Working experience involving collaboration among ministries/directorates, donor-funded projects, national institutions, and project stakeholders is desired;
- Ability to effectively coordinate a multi-stakeholder project;
- Ability to administer budgets and work effectively with counterpart staff at all levels and with all groups involved in the project;
- Strong writing, presentation and reporting skills;
- Strong computer skills, in particular mastery of all applications of MS Office and Internet search;
- Excellent written and oral communication skills in French;
- A good working knowledge of English is a requirement.

### **CHIEF TECHNICAL ADVISOR**

#### Duties and Responsibilities

- Provide technical and strategic assistance for project activities, including planning, monitoring, and site operations, and assuming quality control of interventions;
- Provide hands-on support to the National Project Coordinator, project staff and other government counterparts in the areas of project management and planning, strategic planning, management of site activities, information management, monitoring, and impact assessment;
- Assist the NPC to realize the project outputs at national level;
- Finalize Terms of Reference for consultants and sub-contractors, and assist in the selection and recruitment process;
- Assist the NPC with the establishment of PSC and of project advisory committee;
- Assist the NPC with the preparation of the Inception Workshop, launching of the project at central and site levels and 1<sup>st</sup> PSC meeting
- Assist the NPC in the coordination of the work of all consultants and sub-contractors, ensuring the timely delivery of expected outputs, and effective synergy among sub-contracted activities;
- Assist the NPC in the preparation and revision of the Project Management Plan as well as Annual Work Plans and with the Procurement plan for the central unit and site units;
- Assist the NPC in the coordination of the preparation of the first periodic status report;
- Assist the National Project Coordinator in the preparation of the two first Combined Project Implementation Review/Annual Project Report (PIR/APR), inception report, technical reports, quarterly financial reports for submission to UNDP, the GEF, and other donors, as required;
- Assist in mobilizing staff and consultants in the conduct of a mid-term project evaluation, and in undertaking revisions in the implementation program and strategy based on evaluation results;
- Assist the NPC in liaison work with project partners, donor organizations, NGOs and other groups to ensure effective coordination of project activities, training them where needed;

- Assist the NPC to carry out an annual review of project's work experience and assessment of best practices, document lessons from project implementation and make recommendations to the Steering Committee for more effective implementation and coordination of project activities;
- Assist relevant government agencies and project partners with development of essential skills through training workshops and on-the-job training thereby upgrading their institutional capabilities;
- Assist the project Coordinator in liaising with scientific institutions that can contribute with field studies and monitoring components of the project.
- Perform other tasks as may be requested by the NPC, Steering Committee and other project partners.

#### Qualifications

- University education (MS or PhD) with expertise in the area of natural resource management, biodiversity conservation strategies, PA collaborative management approaches and community organization;
- At least 10 years of professional experience;
- Strong skills in monitoring and evaluation and experience in implementing environmental projects;
- Previous experience with GEF projects is an added plus;
- Ability to effectively coordinate a large, multidisciplinary team of experts, consultants and co-financing partners;
- Be an effective negotiator with excellent oral and presentation skills;
- Excellent writing skills in English and French,

### OVERVIEW OF INPUTS FROM TECHNICAL ASSISTANCE CONSULTANTS

Consultant	Assignments	Tasks and inputs
<b>Local / National Recruitment</b>		
PCU support	3 persons full-time over 5 years	The support team to the NPC and CTA will include an Administrative assistant/secretary and Driver/Logistic support
Project Coordination Unit	Refer to Table 9 for more details	The PCU technical team will work in close cooperation with the NPC and CTA and with Union and decentralized government representatives in charge of environment and other project partners to implement project outputs. The team will include the following national skills: A: Institutional and legal expert B: Financial expert C: Community engagement and communication expert D: GIS/Database expert E: Marine and Terrestrial scientist experts (2 persons) F: Administrative and financial manager
		A <b>Output 1.1 - A new legal framework for the management of the PA system is approved and its institutional structure is formalized:</b> 1.1.1 Legislative and regulatory tools to plan, create, manage and supervise protected areas of the Comoros are updated, consolidated and harmonized with those that are affecting PAs, including establishment of committee, consultative meetings, drafting and submission of new legislation and regulatory texts 1.1.2 The institutional entity in charge of the PA system is established, i.e. central unit dedicated to the PA system, PA management units, PA system Board of Directors and Advisory Board <b>Output 2.2 - Resource use governance:</b> 2.2.1 Land / sea and resource use rights investigations 2.2.2 Negotiations in view of securing long-term use rights
		D <b>Output 1.2 – Increased capacity of PA agency staff at various levels and key members of communities and associations involved in PA collaborative management:</b> 1.2.1 An accessible information system for monitoring, analysing, mapping and disseminating various information/data across the PA system is

Consultant	Assignments	Tasks and inputs
		implemented, including setting up the GIS office, setting up a database specific to the PA system and a website
		<p>E</p> <p><b>Output 1.2 - Increased capacity of PA agency staff at various levels and key members of communities and associations involved in PA collaborative management:</b>  1.2.2 Adequate training on various aspects of PA management is provided to key stakeholders and actors involved including the development and implementation of a capacity development plan</p> <p><b>Output 1.3 - PA system expansion</b>  1.3.1 Formulation of a PA system strategy including gap analysis, and integration of cultural, touristic and feasibility aspects</p> <p><b>Output 2.1 - PA management is strengthened at the site level</b>  2.1.4 Implementation of ecosystem management in sites: e.g. strict conservation of critical habitats and cost-effective restoration of others where needed (including clearing of IAS)</p>
		<p>C</p> <p><b>Output 1.2 - Increased capacity of PA agency staff at various levels and key members of communities and associations involved in PA collaborative management:</b>  1.2.3 Development and implementation of a strategic communication plan: development and implementation through partnerships with media and associations</p> <p><b>Output 2.1 - PA management is strengthened at the site level</b>  2.1.5 PA surveillance is ensured with the participation of environmental associations and riparian communities</p> <p><b>Output 2.3 - Plan/strategy for developing sustainable eco-tourism activities in PAs/MPAs</b>  2.3.1 Environmental and social guidelines are elaborated for the development of tourism linked to PAs.  2.3.2 A strategic plan for the development of sustainable tourism across the PA network is elaborated and implemented</p> <p><b>Output 2.4 - Livelihoods programme for the benefit of PA/MPA adjacent communities</b>  2.4.1 A sustainable livelihoods programme is developed including the identification of target beneficiaries, assessment of previous efforts, and identification of profitable livelihood activities  2.4.2 A sustainable livelihoods programme is implemented</p>
		<p>E D C A</p> <p><b>Output 1.3 - PA system expansion</b>  1.3.2 Legal gazettal of the new or expanded terrestrial and marine PAs, including additional surveys, validation of PAs specific objectives, zonation and delimitation, consultations and drafting of legal texts, management plans, submission of decrees and delimitation</p>
		<p>B</p> <p><b>Output 1.4 - PA system finance</b></p>
		<p>F</p> <p>The administrative and financial manager will develop a procurement plan for the central and sites units and contribute to the development of annual budgets and financial reports</p> <p><b>Output 2.1 - PA management is strengthened at the site level</b>  2.1.1 Infrastructure essential for PA operation is built / renovated  2.1.2 PA sites are equipped</p>
		<p>E C</p> <p><b>Output 2.1 - PA management is strengthened at the site level</b>  2.1.3 PA management plans are developed  2.1.7 Long-term ecological monitoring program to assess the management effectiveness of the PA system : development and implementation</p>
		<p>C A</p> <p><b>Output 2.1 - PA management is strengthened at the site level</b>  2.1.6 Cooperative agreements with local CSOs for PA collaborative management are effective and joint PA management committees are supported</p>

## Project Annexes

### Annex 1: Conservation Values of Existing and Proposed Protected Areas

**Moheli's Marine Park.** The Moheli Marine Park, the first protected area in the Comoros, was established in April 2001 under the UNDP-GEF project "Biodiversity Conservation and Sustainable Development in the Comoros" (Decree No. 01-053/CE). The PMM is in southern area of Mwali, including Nioumachoua islets covering a surface area of 40,400 ha and is classified as a national park and follows a co-management approach with local village communities.

The beautiful landscapes of the park include different types of habitats: coral and volcanic sand and pebble beaches, mangroves, large islets, and fringing coral reefs, all of which are great assets for recreation and tourism. The site is important for the reproduction of endangered migratory species such as marine turtles. The park includes adjacent land areas such as the crater lake Dziani-Boundouni which is classified Ramsar site which hosts a high diversity of waterfowl, including a large population of grebes *Tachybaptus ruficollis*, and the forest on the lake's watershed is the habitat of endangered species, including the mongoz lemur (*Eulemur mongoz*) endemic to Madagascar-Comoros.

In ten years, progress has been made in improving management with the participation of communities, which is reflected by improved health of coral reefs, the stability of 91 ha of mangrove preserved over the 108 ha of mangrove in the Comoros, the confirmed presence of four dugongs, the increase in annual sea turtle ascents onto beaches from 15,000 in 1998 to 25,000 today, which makes it the most important sea turtle nesting area near a human population. The fisheries management measures adopted at the creation of the park have significantly reduced the pressures on coral reefs. Fishermen then observed an increase in catch and size and the return of some species that had disappeared from the area. However, soil and beach erosion poses a serious and continuing threat to marine resources and may continue to worsen due to the heavy pressure exerted by the population on terrestrial environments.

**Mwali Rainforest** (to be annexed to Moheli's Marine Park). The surface area of the ridge forest is 6142 ha, and the total terrestrial area including the marine park watershed is approximately 16,170 ha. A zoning for the forest area was proposed and includes a 2325 ha multiple-use eco-development zone and a 3817 ha conservation area divided into a core zone (1907 ha) and a buffer zone (1910 ha). A total of 14 villages are concerned by the expanded PA, ie the PMM and the land area including Mwali rainforest and the marine park watershed.

The evergreen tropical rainforest occupies the upper part of the island between 500 and 700 meters on the central ridge of the Mlédjélé to the west and on its south-facing slopes and on the crest of the Mze Kukule. This area is the most rugged part (very steep slopes above 60%), with the highest rainfall, the highest tree cover, and is the most vulnerable to erosion following deforestation. The forested area comprises a low forest dominated by large trees low forest dominated by large trees up to 25-30 meters high on the ridges and a multi-stratum forest dominated by large trees of 30 to 40 meters on the slopes, in which are rare precious wood species such as *Weinmania comorensis* and *Khaya comorensis* and other endemic forest essences such as *Tambourissa comorensis* and *Ocotea comorensis*. Although of medium altitude in comparison to other islands, Mwali forest contains high altitude species such as *Khaya comorensis* and *Chrysophyllum boivinianum*. Non-woody dominant flora is dominated by pteridophytes and orchids.

Mwali supports a unique forest bird community, including two island-endemic species: the critically endangered Moheli Scops-owl (*Otus moheliensis*), and the Moheli Warbler (*Nesillas mariae*). Six other restricted-range species and one seabird also breed, of which one, the Comoro Olive-Pigeon (*Columba pollenii*), is near-threatened. Twelve island-endemic and seven Comoro-endemic subspecies are also present, along with the endangered, but non-endemic, Reunion Harrier (*Circus maillardi*). An endemic subspecies of sea bird, *Puffinus lherminieri temptator* seems to nest only in the Mwali forest. Most of the threatened and restricted-range species are associated with the

intact forest, although all have been seen outside it. This forest is classified as globally important for bird conservation (IBA) and is identified as an AZE site due to it containing critically endangered or endangered species with a limited range. The forest is also home to endemic and threatened mammal species like the endangered Comoro Black Flying Fox (*Pteropus livingstonii*), the vulnerable Comoro Rousette (*Rousettus obliviosus*), and the vulnerable lemur *Eulemur mongoz* (introduced but important population on Mwali). Reptiles include at least six Comoro-endemic species: *Lycodryas sanctijohannis*, *Paroedura sanctijohannis*, *Phelsuma v-nigra*, *Amphiglossus johanna*, *Mabuya comorensis*, *Typhlops comorensis*. Butterflies include one Mwali-endemic and four Comoro-endemic species (three shared only with Ndzuani).

Pressures affecting Mwali's forest and its resources result from the interaction of land, economic, social, demographic and environmental factors. The surface of natural forest in 1949 was estimated at over 5,000 ha, at 3,325 ha in 1977 and 3,400 ha in 1983, indicating that the natural forest had declined at an average rate of more than 50 ha per year during this period. The total forest area measured in 2011 as part of the National Forest Inventory was 5679 ha -which represents 20% of the total area of the island- consisting of 91% of moist evergreen forest and 8% of semi-deciduous rainforest. The main threat to native wildlife is continuing conversion of the forest to agriculture, exacerbated by the increasing population, with immigrants arriving from the neighbouring island of Ndzuani. Forest exploitation is concentrated at the eastern and western extremities of the forested area, and also above Fomboni. Introduced rats are abundant.

It has been proposed to classify Mwali Island, including its islets, as a UNESCO biosphere reserve merging the terrestrial and marine protected areas to cover an area of 66,560 ha including a core zone of 4,406 ha, a buffer zone of 47,770 ha and a peripheral area of 14,383 ha.

**Karthala forest.** Located in the south center of Ngazidja, Karthala is an active volcano renowned for its "caldera" of three kilometers in diameter. The proposed protected area is situated at an altitude between 800 and 2,361 m and will cover an area of 26,790 ha. The zoning is divided into a multiple-use eco-development zone (8,040 ha) and a conservation area (18,750) ha integrating the rainforest and arborescent heather (*Philippia* spp.) savanna. The latter is divided into a core zone (8864 ha), a buffer zone (6,790 ha) and a controlled-use area (3,096 ha) which includes the caldera of the volcano. A total of 18 villages are concerned by the establishment of the PA.

On the western and southern slopes above 1200 m altitude, the Karthala forest type includes rainforest, shrubby mountain and cloud forest. An inventory<sup>68</sup> carried out in the southern part of the Massif du Karthala has identified 195 species distributed in 133 genera and 65 families. A recent inventory<sup>69</sup> of the woody flora of the Karthala has identified 95 species belonging to 82 genera and 45 families. Among these species, 19 are endemic to the Comoros archipelago or 20% of the woody flora inventoried, and 5 are endemic to the island of Ngazidja (*Ravenea hildebrandtii*, *Senecio humblotii*, *Philippia comoriensis*, *Scolopia coriacea*, and *Allophylus gardineri*). The most frequent species are *Weinmannia comorensis*, *Ocotea comoriensis*, *Nuxia pseudodontata*, *Tambourissa comorensis* and *Aphloia theaeiformis*, the first 4 being Comoro-endemic. Comoro-endemic species are more abundant on the western side (14 species) as compared to 12 on the south side and 9 on the eastern side. The western side is also the richest in Ngazidja-endemic species since 4 are found there: (*Ravenea hildebrandtii*, *Philippia comoriensis*, *Allophylus gardineri*, *Scolopia coriacea*); 2 species (*Philippia comoriensis*, *Senecio humblotii*) occur on the eastern slope and none has been inventoried on the south side.

The Karthala forest is home to several endemic and/or endangered flora and fauna species, some of which have a distribution limited to a small area of the Karthala. This site has been identified as an Alliance for Zero Extinction (AZE) site due to the presence of Critically Endangered or Endangered species with a limited range, as a Ramsar site and as an Important Bird Area. It includes five endemic endangered and vulnerable bird species, Mount Karthala White-eye (*Zosterops mouroiensis*), Grand Comoro Scops-Owl (*Otus pauliani*), Grand Comoro Flycatcher (*Humblotia flavirostris*), Grand Comoro Drongo (*Dicrurus fuscipennis*) and Mayotte Drongo (*Dicrurus waldenii*), endemic subspecies as the Comoro Blue-Pigeon (*Alectroenas ganzi*) very rare and threatened by hunting, and two endangered species: the Black Parrot (*Coracopsis nigra*) living between 800 m and 900 m altitude and the Comoro

<sup>68</sup> Abderemane, A.M. 2007.

<sup>69</sup> CHARAHABIL, M.M., I. YAHAYA, J-N. LABAT et L.E. AKPO. 2013. Variabilité spatiale de la structure spécifique d'un peuplement ligneux et de l'endémicité en zone de montagne aux Comores. Int. J. Biol. Chem. Sci. 7(3): 902-923, Disponible en ligne à <http://ajol.info/index.php/ijbes>

Olive-Pigeon (*Columba pollenii*) to 1400 m altitude. All bird species restricted to Mount Karthala are considered threatened, and, consequently, the forest ranks highly amongst the key forests for threatened birds in Africa. Mammals include the island-endemic species<sup>70</sup> Griveaud's long-fingered bat (*Miniopterus griveaudi*) and the vulnerable Comoro Rousette (*Rousettus obliviosus*). Reptiles include 2 island-endemic species (*Phelsuma comorensis*, *Furcifer cephalolepis*) and 4 Comoro-endemic species (*Phelsuma v-nigra*, *Mabuya comorensis*, *Lycodryas sanctijohannis*, *Typhlops comorensis*). Lepidoptera include 9 island-endemic species, 2 Comoro-endemic species, and three endangered: *Papilio aristophontes*, *Graphium levassori*, *Amauris comorana*. There are also several orchid species, endemic tree ferns and endemic dwarf palms on the western slope. *Khaya comorensis*, a threatened endemic tree species that provides precious wood is still present in the high altitude forest of the Karthala, although it has become very rare.

The major threat is underplanting followed by complete clearance for agriculture. The lower limit of intact forest is retreating upwards as clearance proceeds for agricultural expansion. In the north-east, cultivation reaches at least 1,400 m and the forests have been entirely cleared. Large trees are selectively removed for making pirogues. Secondary forests are dominated by the invasive strawberry guava *Psidium cattleianum*, and other exotic plant species are increasing. The surroundings are mostly cultivated, except to the north, along the island's axis, where grassland dominates. In addition to agriculture in the lower areas the site is used for logging, cattle-grazing and limited collection of non-timber forest products. Commercial logging is very active on a 5,000 ha concession on the south-western slopes. Previous logging activity elsewhere has been abandoned, but logged areas have been taken over by agriculture. Management recommendations include the control of exotic invasive species and the reforestation of the grasslands of the central ridge of the island.

The site proposed to establish the **Hantsogoma community forest reserve** (Ngazidja) covers a surface area of 946.4 ha within the Karthala protected area and includes a mosaic of dry forest and wet evergreen forest around the lake Hantsogoma which is a small permanent crater lake located at 950 m altitude, at the northern foot of the Karthala. This site stands out in terms of biodiversity by its richness in orchids: 37 orchid species were recorded in this site. The critically endangered Grand Comoro Scops-Owl (*Otus pauliani*) was observed in this area in 2009.

The site proposed to establish the **Ngnubadju community forest reserve** (Ngazidja) within the Karthala protected area covers 240.6 ha between 545 and 1000 m in central western of the Massif du Karthala located in the southern part of the island of Ngazidja. The Ngnubadju forest made of a mosaic of gallery and wet evergreen forest is one of the last vestiges of the lowland forest now disappeared from other slopes of the Karthala. Between 500 and 700 m altitude, the vegetation is dominated by dense stands of invasive alien species, *Psidium cattleianum* gradually replaced by *Syzygium jambos*. From 800 to 1200 m above sea level lies a moist evergreen forest 20-30 m tall dominated by tree ferns. This plant community has a rich flora including 84 species belonging to 70 genera and 46 families. Due to their high abundance and good regeneration capacity in this forest, 4 species are characteristic of Ngnubadju: *Khaya comorensis* (which represents 15% of the floristic composition of this site), *Filicium decipiens*, *Dombeya condensata* and *Olea lanceolata*. This site is therefore distinguished by the best-preserved stock of the rare and endemic *Khaya comorensis* and of *F. decipiens*, two endemic species characteristic of moist forests of the Comoros, which have become rare in the rest of the Karthala forest and in other forests of the Comoros. Ngnubadju forest as well as the entire Karthala forest is home to unique bird and butterflies species such as *Mylothris humbloti*. The old Humblot sawmill and administrative buildings of the colonial times found on this site at an altitude of 500 m, bear witness to the French occupation in the Comoros archipelago. The local population, aware of the degradation of the site, but also of its undeniable interest, took the initiative to convert it into a Botanical Garden and seek support to renovate the buildings.

**Coelacanth zone** (Ngazidja). The site proposed to establish this MPA covers 7,572 ha of seascape along the southwest coast of Ngazidja. This site has long been identified as a priority area for the establishment of a protected area to protect the coelacanth population, its habitat, and the adjacent *Baie des Dauphins* which is highly frequented by whales and dolphins. The global importance of this site is first related to the volcanic caves located near the coast that are home to the famous coelacanth (*Latimeria chalumnae*), an endangered living fossil of worldwide scientific interest. The value of this site is also linked to the presence of an important and well-preserved coral reef in the southern part (Chindini). In the *Baie des Dauphins*, the species most commonly seen are the Spinner Dolphin

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<sup>70</sup> Juste, J. 2008. *Miniopterus griveaudi*. In: IUCN 2011. IUCN Red List of Threatened Species. Version 2011.2. <www.iucnredlist.org>.

(*Stenella longirostris*), the Common Bottlenose Dolphin (*Tursiops truncatus*) and the Spotted Pantropical Dolphin (*Stenella attenuata*). Available data indicate the presence of at least 12 whale species in comoran waters, including the Humpback Whale (*Megaptera novaeangliae*), a Beaked whale (*Mesoplodon* sp.), the Killer Whale (*Orcinus orca*), the Southern Right Whale (*Eubalaena australis*) and the Bryde's Whale (*Balaenoptera edeni*). The Pygmy Killer Whale (*Feresa attenuata*) was observed in large groups of up to 500 individuals. Four couples of sperm whales (*Physeter macrocephalus*) were observed off Itsamia in March 2009.

The coastal area and resources are protected by the initiatives of an association that brings together representatives of the 12 villages in the Coelacanth zone, the Association for the Protection of the *Gombessa* (APG), which was created in 1995 and whose activities have been continuing to date, mostly through the voluntary involvement of the association's members. The APG aims at protecting the coelacanth whose main threat is fishing with bottom line, through educating fishers, promoting alternative economic activities and improving fishing and processing facilities. A Center for Information, Education, Valorisation and Conservation of the Coelacanth and its Marine Environment in the Comoros was recently inaugurated with the mission to collect, process and disseminate information about the coelacanth and its environment, educate, promote ecotourism focused on the coelacanth, promote environmentally friendly fishing practices, and participatory natural resource conservation.

**Île aux Tortues community reserve** (Ngazidja). A small project supported by the GEF Small Grant Programme (SGP) and led by the Association for Ndroudé's cultural and economic development plans to establish a community reserve including the *Île aux Tortues*, Ndroudé and 2 adjacent villages (northeast of Ngazidja) for the protection of sea turtles and development of ecotourism. The *Île aux Tortues*, located approx. 300 m from Ndroudé's shore has a surface area of two ha and is surrounded by coral reefs and seagrasses which are reportedly used by the vulnerable Dugong (*Dugong dugon*) and the endangered Green Turtle (*Chelonia mydas*) as a feeding site. Green turtles used to nest on the beaches of the island. The total area of the proposed community reserve is 450 ha. 3 villages<sup>71</sup> are concerned by the establishment of this reserve.

The Association Ndroudéenne d'Échanges Culturels et de Protection de l'Environnement has received funding from GEF SGP (26,111 US\$ - Dec. 2011 to Dec. 2012) to build 3 bungalows and a multipurpose room to develop ecotourism to support conservation efforts. The interest around this site has attracted the intervention of a Swiss NGO, the Swiss Cetacean Society, which has recruited and trained 4 ecoguards, including a former poacher, to carry out regular night patrols on the beach to prevent attempts to poaching of sea turtles or illegal sand extraction. It is reported that turtles' ascents on beaches are more frequent since the implementation of beach monitoring.

**Massif of Mount Ntringui** (Ndzواني). The total surface area of the planned protected area is 3813 ha, representing 8.9% of the island area. This area includes a 2540 ha conservation area and a 1273 ha controlled-use area. A total of 6 villages are concerned by the establishment of the PA. This site has been identified as an Alliance for Zero Extinction (AZE) site due to it containing a Critically Endangered or Endangered species with a limited range, as a Ramsar site and as an Important Bird Area.

The remaining forests of Ndzواني located on steep and inaccessible slopes and including those of Mount Ntringui present a high interest in terms of biodiversity because they hold endemic and threatened species such as the critically endangered Anjouan Scops-owl (*Otus capnodes*), a great diversity in orchids and spike moss, arborescent ferns and heath (*Philippia spp.*), two giant bat species endemic to the Comoros: the Comoro Black Flying Fox (*Pteropus livingstonii*) and the Seychelles Flying Fox (*Pteropus seychellensis* var. *comorensis*), and several other bird, fish and reptile species. The Mongoz lemur (*Eulemur mongoz*) although rare in Madagascar, is widespread in Ndzواني. The Dzialandzé Lake, on top of mountain ridges in the center of Ndzواني, is the largest lake of the island. The lake and its surroundings provide habitat for grebes, freshwater fish and several other forest species. Until now, these sites have been preserved because of their limited accessibility.

A study<sup>72</sup> compared seven forest sites in the islands of Ndzواني and Mwali that contain the largest colonies of Livingstone fruit bat and collectively harbor more than half of the population of the species. Taking into account the

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<sup>71</sup> A proposal to create a large MPA to encompass all of the northern area of Ngazidja, including the *Île aux Tortues*, would imply the involvement of a total of 11 villages.

<sup>72</sup> Sewall B.J., A.L. Freestone, M.F.E. Moutui, N. Toilibou, I. Saïd, S.M. Toumani, D. Attoumane, et C.M. Iboua. 2010. *Comoros Community Forest Reserves Plan for Livingstone's Flying Fox, Rainforest Biodiversity, and the Comorian People*. Comoros Forest Reserves Project &

conservation value, level of threat and feasibility of each site, the analysis concludes that Yiméré in Ndzuanu and Hassera-Ndrenge in Mwali are priority sites for the creation of reserves. The forest of Yiméré is located halfway up a steep slope in the south-east at the limit of land clearing in the surroundings of the Lingoni village. Its high conservation value lies in the fact that it is home to the oldest and one of the largest colonies of Livingstone fruit bat which was regularly monitored by Action Comores since 1992. The central area consists of primary forest, mainly multi-stratum rainforest with an intact canopy, also including tree ferns, few non-native tree species and relatively undisturbed undergrowth. It contains the highest total tree diversity of the visited sites and the highest number of rare and endangered tree species. This site features a wide variety of native birds, including the Anjouan Scops Owl endemic to the island and other threatened or rare species such as the mongoz lemur endemic to Madagascar and Comoros. The nearby cascade of Sept Rivières is an asset for conservation since the conservation of forest adjacent to streams will maintain water supply and fight against erosion.

The forests and native wildlife are currently under pressure from deforestation and expansion of agricultural and grazing land, lack of management, precious wood exploitation and the introduction of exotic species. The most important threat is deforestation which follows the same progression with the same causes as elsewhere in the country: underplanting (removing undergrowth and preventing regeneration) followed by clearance for open field cultivation. Charcoal requirements are high in Ndzuanu, particularly for distillation of ylang-ylang. New roads and tracks have facilitated forest exploitation by easing accessibility to the forest. The severe depletion of natural resources on Ndzuanu has resulted in emigration to Mwali, thus contributing to accelerate degradation there. Hunting threatens pigeons, France's Hawk (*Accipiter francesiae*) and Anjouan Scops Owl (*Otus capnodes*). Exotic plant species and rats are abundant in the forest.

**Moya community forest reserve** (Ndzuanu). Ongoing interventions aiming at intensifying agriculture within village land to reduce pressures on biodiversity, including deforestation, could include the implementation of a community reserve (size to be defined) in the Moya forest zone, on the southwestern coast of Ndzuanu. A total of 3 villages would be concerned by the establishment of the reserve. The Moya forest area is an important zone for all the key endangered species on Ndzuanu including Anjouan Scops Owl (*Otus capnodes*), Comoro Black Flying Fox (*Pteropus livingstonii*), Mongoz lemur (*Eulemur mongoz*) which distribution is mostly associated with remnant natural forests. Recent biodiversity studies have shown the presence of 4950 individuals of Anjouan Scops-owl, mostly in natural forests but also in degraded ones. Forests are threatened by agricultural expansion and timber removal for construction/ planks.

**Bimbini peninsula** (Ndzuanu). The total surface of the proposed protected area is approximately 3,025 ha, mostly marine. The marine and coastal area of the Bimbini Peninsula in Ndzuanu is home to a rich biodiversity, both at the specific and ecosystem levels. A total of 12 villages are concerned by the establishment of the MPA. Ecosystems include mangroves, a coastal barrier-reef complex<sup>73</sup>, beaches once used by turtles as nesting sites, seagrass beds and Pomoni coastal marsh. Bimbini mangrove is a strip of fragmented mangroves that stretches over 7 km of the southwest coast and covering a 25 ha area. The coastal barrier-reef complex that runs along the entire coast on the southern side of the peninsula includes an enclosed lagoon and covers a 1,575 ha area. Coral colonies are dominated by *Favia* and *Favites* (massive), *Acropora* (branching), *Turbinaria* and *Montipora* (foliated), and *Platygyra* and *Leptoria* (meandering) types. Seagrass beds are developed and provide habitat and feeding sites for many fish species. The site has already been used by the endangered Green Turtle (*Chelonia mydas*), the critically endangered Leatherback Turtle (*Dermochelys coriacea*) and the vulnerable Dugong (*Dugong dugon*) but studies are needed to verify the actual presence of these species at this site.

Although relatively protected by environmental awareness and conservation efforts of local people, this site is still exposed to many threats to biodiversity and the environment in general: i) a coastal and marine pollution by the dumping of waste and soil deposits produced by land erosion aggravated by deforestation, causing degradation of the coral reef and seagrass and loss of associated biodiversity, ii) artisanal fishing by destructive methods, such as using *Tephrosia*, small mesh nets, fishing on foot on the reef flat, and the use of dynamite, iii) depletion of turtle populations that nested in Bimbini due to poaching and the disappearance of nesting beaches, iv) the regression of beaches caused by the extraction of beach sand and pebble and accelerated coastal erosion, and v) cutting mangrove wood for building or as fuelwood.

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Action Comores Anjouan. 93 p. & Sewall B.J., A.L. Freestone, M.F.E. Moutui, N. Toilibou, I. Saïd, S.M. Toumani, D. Attoumane, et C.M. Iboua. 2011. *Reorienting Systematic Conservation Assessment for Effective Conservation Planning*. Conservation Biology, Volume 25, No. 4, 688–696.

<sup>73</sup> Atlas of Western Indian Ocean Coral Reefs, 2009, IRD, pp.5

Selection of these sites was based on a number of factors. A national workshop held in Moroni in 1996 had identified priority marine and terrestrial sites to form the network of protected areas of the Comoros. The results of this workshop were the basis for the Biodiversity Conservation project which has established the PMM in 2001 and until now have defined the priorities for the creation of protected areas, i.e. Karthala and the Coelacanth zone in Ngazidja, Ntringui Mountain and the Bimbini peninsula/Ile de la Selle in Ndzواني, and Mwali's rainforest. Since then, voluntary community initiatives have made some progress in implementing conservation measures to protect the coelacanth, for the creation of two forest community reserves on the Karthala and marine community reserves around the Turtle Island and the Bimbini peninsula. Therefore these sites were selected as part of this project because of this on-going process and because of the village communities' strong commitment to conservation and managing the site as a protected area, as well as the globally significant biodiversity found at these sites.

## Annex 2: METT, Financial Scorecard and Capacity Scorecard for PA Management

<i>Scorecards applied in the project*</i>
<p><b>Management Effectiveness Tracking Tool (METT)**</b> <a href="#">[Link]</a></p> <p>Sites assessed in 2013:</p> <ul style="list-style-type: none"><li>[1] Parc Marin de Mohéli (Moheli Marine Park)</li><li>[2] Forêt du Karthala (Karthala Forest)*</li><li>[3] Forêt humide de Mohéli (Moheli Rainforest)</li><li>[4] Montagnes d'Anjouan - Mont Ntringui (Massif of Mt Ntringui)</li><li>[5] Réserve communautaire de la forêt de Moya (Moya Community Forest)</li><li>[8] Réserve communautaire de l'Îlot aux Tortues (Turtle Island Community Reserve)</li><li>[9] Zone du Coelacanth - Baie des Dauphins (Coelacanth Zone - Dolphin Bay)</li><li>[10] Presqu'île de Bimbini - Îlot de la Selle (Bimbini Peninsula - Selle Islet)</li></ul> <p>* Note: Includes also the following sites</p> <ul style="list-style-type: none"><li>[6] Réserve communautaire de Hantsogoma (Hantsogoma Community Reserve)</li><li>[7] Réserve communautaire de Ngubadju (Ngubadju Community Reserve)</li></ul>
<p><b>Financial Sustainability Scorecard for Protected Area Systems**</b> <a href="#">[Link]</a></p>
<p><b>Capacity Development Assessment Scorecard for Protected Area Systems</b> <a href="#">[Link]</a></p>

Notes:\* Summary scores are reproduced below.

## SUMMARY OF PA SITES MANAGEMENT EFFECTIVENESS TRACKING TOOL (METT)

See Separate File for detailed METT information [[Link](#)]

See also the extended list of METT respondents at site level / local communities [[Link](#)]

	[1] Parc Marin de Mohéli (Moheli Marine Park)	[2] Forêt du Karthala (Karthala Forest)	[3] Forêt humide de Mohéli (Moheli Rainforest)	[4] Montagnes d'Anjouan - Mont Ntringui (Massif of Mt Ntringui)	[5] Réserve communautaire de la forêt de Moya (Moya Community Forest)	[8] Réserve communautaire de l'Îlot aux Tortues (Turtle Island Community Reserve)	[9] Zone du Coelacanth - Baie des Dauphins (Coelacanth Zone - Dolphin Bay)	[10] Presqu'île de Bimbini - Îlot de la Selle (Bimbini Peninsula - Selle Islet)
<b>Is this a new protected area?</b>	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes
<b>Area in Hectares</b>	40,400	26,790	16,170	3,813	0	450	7,572	3,025
<b>Global designation or priority lists</b>	Ramsar site within PA, Alliance for Zero Extinction (AZE), WWF Global 200, CI Hotspot	Ramsar site, IBA, Alliance for Zero Extinction (AZE), WWF Global 200, CI Hotspot	IBA, Alliance for Zero Extinction (AZE), WWF Global 200, CI Hotspot	Ramsar site, IBA, Alliance for Zero Extinction (AZE), WWF Global 200, CI Hotspot	WWF Global 200, CI Hotspot	WWF Global 200, CI Hotspot	WWF Global 200, CI Hotspot	WWF Global 200, CI Hotspot
<b>Local Designation of PA</b>	National implementation, in light of new legislation Park	National Procted Area (this designation and the IUCN category may change during project slated to be enacted with project support)	National Procted Area (this designation and the IUCN category may change during project implementation, in light of new legislation slated to be enacted with project support)	National Procted Area (this designation and the IUCN category may change during project implementation, in light of new legislation slated to be enacted with project support)	Community Reserve	Community Reserve	Community Reserve	National Procted Area (this and the IUCN may change during project implementation, in light of new legislation slated to be enacted)
<b>IUCN Category</b>	2	5	6	6	6	6	6	6
<b>METT Scores</b>	38	39	13	8	15	19	40	14

\* Note: This designation and the IUCN category may change during project implementation, in light of new legislation slated to be enacted with project support.

## METT THREAT PROFILING BASED ON SO1 TRACKING TOOL, SECTION I, DATA SHEET 2

### Top 9 threats for coastal/marine sites:

- 5.4 Fishing, killing and harvesting aquatic resources
- 10.4 Erosion and siltation/ deposition (e.g. shoreline or riverbed changes)
- 9.4 Garbage and solid waste
- 2.1 Annual and perennial non-timber crop cultivation
- 5.3 Logging and wood harvesting
- 7.3a Increased fragmentation within protected area
- 8.1 Invasive non-native/alien plants (weeds)
- 8.1a Invasive non-native/alien animals
- 8.1b Pathogens (non-native or native but creating new/increased problems)

**Table 12. Threat Profiling Matrix for METT sites**

	[1] PMM	[2] Karthala *	[3] Moheli Rainf	[4] Mt Ntringui	[5] Moya Comm Res	[8] I Tortues Comm Res	[9] Z Coelac B Dauph	[10] Bimbini-I Selle	Number of sites scoring 3 for this threat
<b>1. Residential and commercial development within a protected area</b>									
1.1 Housing and settlement	1	1	2	0	1	0	1	3	1
1.2 Commercial and industrial areas	0	0	0	0	0	0	1	0	
1.3 Tourism and recreation infrastructure	0	1	1	1	0	1	1	0	
<b>2. Agriculture and aquaculture within a protected area</b>									
5.4 Fishing, killing and harvesting aquatic resources	3	0	3	0	3	3	3	3	6
2.1a Drug cultivation	0	1	1	0	0	0	0	0	
2.2 Wood and pulp plantations	0	1	0	0	0	1	1	0	
2.3 Livestock farming and grazing	0	3	3	3	2	1	1	1	3
2.4 Marine and freshwater aquaculture	0	0	0	0	0	0	0	0	
<b>3. Energy production and mining within a protected area</b>									
3.1 Oil and gas drilling	0	0	0	0	0	0	0	0	
3.2 Mining and quarrying	2	0	0	0	0	3	1	3	2
3.3 Energy generation, including from hydropower dams	0	0	1	0	0	0	1	2	
<b>4. Transportation and service corridors within a protected area</b>									
4.1 Roads and railroads (include road-killed animals)	0	3	0	0	0	0	1	3	2
4.2 Utility and service lines (e.g. electricity cables, telephone lines,)	0	0	0	0	0	0	1	1	
4.3 Shipping lanes and canals	3	0	0	0	0	0	2	3	3

	[1] PMM	[2] Karthala *	[3] Moheli Rainf	[4] Mt Ntringui	[5] Moya Comm Res	[8] I Tortues Comm Res	[9] Z Coelac B Dauph	[10] Bimbini-I Selle	Number of sites scoring 3 for this threat
4.4 Flight paths	1	1	1	1	1	1	1	1	
<b>5. Biological resource use and harm within a protected area</b>									
5.1 Hunting, killing and collecting terrestrial animals (including killing of animals as a result of human/wildlife conflict)	0	3	3	1	2	1	1	1	2
5.2 Gathering terrestrial plants or plant products (non-timber)	1	2	1	1	1	1	1	1	
10.4 Erosion and siltation/ deposition (e.g. shoreline or riverbed changes)	3	2	3	3	3	3	1	3	6
9.4 Garbage and solid waste	3	1	3	1	0	3	3	3	5
<b>6. Human intrusions and disturbance within a protected area</b>									
6.1 Recreational activities and tourism	2	1	1	1	1	1	1	1	
6.2 War, civil unrest and military exercises	0	0	1	0	0	0	0	0	
6.3 Research, education and other work-related activities in protected areas	1	1	1	1	1	1	1	1	
6.4 Activities of protected area managers (e.g. construction or vehicle use, artificial watering points and dams)	1	1	1	0	0	0	1	0	
6.5 Deliberate vandalism, destructive activities or threats to protected area staff and visitors	3	1	2	0	0	3	2	2	2
<b>7. Natural system modifications</b>									
7.1 Fire and fire suppression (including arson)	2	3	3	0	0	0	1	2	2
7.2 Dams, hydrological modification and water management/use	0	0	1	0	0	0	0	0	
2.1 Annual and perennial non-timber crop cultivation	0	3	3	3	2	1	1	3	4
7.3b Isolation from other natural habitat (e.g. deforestation, dams without effective aquatic wildlife passages)	0	0	0	3	0	0	0	0	
7.3c Other 'edge effects' on park values	3	0	0	0	0	0	0	0	1
7.3d Loss of keystone species (e.g. top predators, pollinators etc)	0	0	3	2	2	3	2	1	2
<b>8. Invasive and other problematic species and genes</b>									
5.3 Logging and wood harvesting	1	3	3	3	3	1	1	3	4
7.3a Increased fragmentation within protected area	3	3	3	0	3	1	0	1	4
8.1 Invasive non-native/alien plants (weeds)	2	3	3	2	3	3	1	2	4
8.2 Introduced genetic material (e.g. genetically modified organisms)	0	0	0	0	0	0	0	0	
<b>9. Pollution entering or generated within protected area</b>									
9.1 Household sewage and urban waste water	0	1	2	0	0	0	0	2	
9.1a Sewage and waste water from protected area facilities (e.g. toilets, hotels etc)	0	0	0	0	0	0	0	0	
9.2 Industrial, mining and military effluents and discharges (e.g. poor water quality discharge from dams, e.g. unnatural temperatures, de-oxygenated, other pollution)	2	0	2	0	0	0	1	0	
9.3 Agricultural and forestry effluents (e.g. excess fertilizers or pesticides)	2	1	2	0	0	1	1	1	
8.1a Invasive non-native/alien animals	1	1	3	0	3	3	2	3	4

	[1] PMM	[2] Karthala *	[3] Moheli Rainf	[4] Mt Ntringui	[5] Moya Comm Res	[8] I Tortues Comm Res	[9] Z Coelac B Dauph	[10] Bimbini-I Selle	Number of sites scoring 3 for this threat
9.5 Air-borne pollutants	0	1	2	0	0	0	1	2	
9.6 Excess energy (e.g. heat pollution, lights etc)	2	0	1	0	0	0	0	0	
<b>10. Geological events</b>									
10.1 Volcanoes	0	3	0	0	0	0	3	0	2
10.2 Earthquakes/Tsunamis	1	1	1	0	1	1	1	2	
10.3 Avalanches/ Landslides	0	2	2	3	3	0	0	1	2
8.1b Pathogens (non-native or native but creating new/increased problems)	2	0	3	0	3	3	1	3	4
<b>11. Climate change and severe weather</b>									
11.1 Habitat shifting and alteration	1	1	2	3	0	0	1	2	1
11.2 Droughts	0	1	3	0	2	3	0	2	2
11.3 Temperature extremes	0	0	0	0	0	0	0	0	
11.4 Storms and flooding	2	1	0	0	3	0	1	3	2
<b>12. Specific cultural and social threats</b>									
12.1 Loss of cultural links, traditional knowledge and/or management practices	1	3	3	0	2	3	2	2	3
12.2 Natural deterioration of important cultural site values	2	3	1	1	0	0	2	2	1
12.3 Destruction of cultural heritage buildings, gardens, sites etc	0	3	3	0	0	0	1	2	2
<b>TOTAL threat points</b>	<b>51</b>	<b>60</b>	<b>77</b>	<b>33</b>	<b>45</b>	<b>46</b>	<b>49</b>	<b>71</b>	
<b>Number of threats scoring 3</b>	<b>7</b>	<b>12</b>	<b>18</b>	<b>9</b>	<b>11</b>	<b>13</b>	<b>5</b>	<b>14</b>	

\* Note: Includes also the following sites: [6] Hantsogoma Comm Res and [7] Ngubadju Comm Res

## FINANCIAL SUSTAINABILITY FOR PA SYSTEMS – OVERVIEW OF BASELINE

See Separate File for detailed Financial Scorecard information [[Link](#)]

### Financial Analysis behind the Financial Scorecard applied in 2013 – FS Part I

Financial Analysis of the Sub-System or Network – Existing and new PAs	Baseline year 2014 (US\$)	Comments
<b>Available Finances</b>		
<b>(1) Total annual central government budget allocated to PA management (excluding donor funds and revenues generated for the PA system)</b>	30,000	
- operational budget (salaries, maintenance, fuel etc)	30,000	Estimation of time spent by government employees - this is current budget (data from 2013). With the expansion of the PA estate, government investment is expected to increase, starting in 2015.
<b>(2) Extra budgetary funding for PA management (2A + 2B below)</b>	335,920	UNDP / GEF Biodiversity and Sustainable land Use project and PoWPA. The new UNDP GEF FSP (PIMS 4950) for the expansion of the PA system is not included here, as it is not yet approved. Yet, it is bound to inject some \$0.8M per year in average into the PA system. We recommend that the Financial Scorecard is reapplied again once the project is effective and government has assigned site level staff to the new PAs to be created (suggested by 2015).
A. Funds channelled through government - total	0	These may include PA dedicated taxes, revenue streams from trust funds, donor funds, loans, Debt for nature swaps or other
B. Funds channelled through third party/independent institutional arrangements – total	335,920	All used for preparing dossiers in connection with the PA system expansion, except 70720 USD budget for PMM
- Donor funds	335,920	Includes funds from UNDP and AFD: Integrated Ecological Planning and Sustainable Land Management for coastal ecosystems in the Comoros "Planification Écologique Intégrée et Gestion Durable des Terres dans les Écosystèmes Côtiers des Comores" and Protected Areas Programme of Work, and Budget for PMM
- Loans	0	
- Others	0	
<b>(3) Total annual site based revenue generation across all PAs broken down by source</b>	0	These may include PA (A) Tourism entrance fees; (B) Other tourism and recreational related fees (camping, fishing permits etc); (C) Income from concessions; (D) Payments for ecosystem services (PES); and (E) Other non-tourism related fees and charges (specify each type of revenue generation mechanism). Note that Entrance fees collected by the villages but not managed by the PMM.
<b>(4) Percentage of PA generated revenues retained in the PA system for re-investment</b>	0	

<b>Financial Analysis of the Sub-System or Network – Existing and new PAs</b>	<b>Baseline year 2014 (US\$)</b>	<b>Comments</b>
(5) Total finances available to the PA system [line item 1+2.A+2.B]+ [line item 3 * line item 4]	365,920	
<b>Costs and Financing Needs</b>		
(1) Total annual expenditure for PAs (all PA operating and investment costs and system level expenses)	365,920	
(2) Estimation of PA system financing needs: [A, B and C below]	[see below]	
<b>A. Estimated financing needs for <i>basic</i> management costs (operational and investments) to be covered</b>	<b>2,108,666</b>	The needs are assessed for an expanded PA system. As per PRODOC Table 1. Break down below estimated on the basis of the PPG report on PA finance, but additional infrastructural needs had not been included in either, so we include them here.
- PA central system level operational costs (salaries, office maintenance etc)	767,466	
- PA site management operational costs	191,867	
- PA site infrastructure investment costs	765,600	
- PA system capacity building costs for central and site levels (training, strategy, policy reform etc)	383,733	
<b>B. Estimated financing needs for <i>optimal</i> management costs (operational and investments) to be covered</b>	n/a	Optimal estimates not conducted.
<b>C. Estimated financial needs to expand the PA systems to be fully ecologically representative:</b>	[see below]	Estimated costs of completing the ecological analysis.
- basic management costs for new PAs	2,188,666	Adds the gap analysis costs.
- optimal management costs for new PAs	NA	
<b>Annual financing gap (financial needs – available finances)</b>		
1. Net actual annual surplus/deficit	0	Expenditure minus Available finances
2. Annual financing gap for basic management scenarios	1,742,746	The figure is approximate and break down not calculated. Note that the calculated financing gap for the expanded PA system does not include revenues from the new UNDP GEF FSP (PIMS 4950) for the expansion of the PA system is not included here, as it is not yet approved. Yet, it is bound to inject some \$0.9M per year in average into the PA system from GEF and UNDP funds alone. Together with other funding from government and AFD in the pipeline (and which co-finance the project), new investments could cover between 2/3 and 1/2 of the gap depending on the year. The Financial Scorecard should reapplied again once the project is effective and government has assigned site level staff to the new PAs to be created (suggested by 2015).

Financial Analysis of the Sub-System or Network – Existing and new PAs	Baseline year 2014 (US\$)	Comments
3. Annual financing gap for optimal management scenarios	NA	
4. Annual financing gap for basic management of an expanded PA system (current network costs plus annual costs of adding more PAs)	NA	The figure in item 2 above is already of an expanded PA system. No additional PA expansion is planned at this stage beyond what will be engineered in the UNDP GEF PA project. Yet, adjustments to the proposed sites' surface and polygons should not be excluded as a result of the ecological gap analysis planned under the project.
5. Projected annual financing gap for basic expenditure scenario in year 2019 (5 years from baseline year)	2,178,432	Assuming no project - no change in revenue, the gap is likely to increase, given that the costs of enforcement and inaction that would ensue. Currently no long-term financial analysis of the PA system has been undertaken. The target for closing the gap over a 5 year period is to reduce it by at least 30%.

*Summary of Scoring for the Financial Scorecard in 2013 – FS Part II*

FINANCIAL SCORECARD – PART II Summarised – ASSESSING ELEMENTS OF THE FINANCING SYSTEM	Current Scores 2013 FS (in GEF SO1 TT)	GEF TT Total Possible Scores	% per element
Component 1 – Legal, regulatory and institutional frameworks	7	95	7%
Component 2 – Business planning and tools for cost-effective management	6	59	10%
Component 3 – Tools for revenue generation by PAs	7	71	10%
Total Score	20	225	9%

**SUMMARY OF CAPACITY DEVELOPMENT ASSESSMENT SCORECARD FOR PROTECTED AREA SYSTEMS**

Strategic Areas of Support	Systemic			Institutional			Individual			Average %
	2013 Scores	Total possible score	%	2013 Scores	Total possible score	%	2013 Scores	Total possible score	%	
1. Capacity to conceptualize and formulate policies, legislations, strategies and programmes	2	6	33%	0	3	0%	N/A	N/A	N/A	22%
2. Capacity to implement policies, legislation, strategies and programmes	1	9	11%	6	27	22%	3	12	25%	21%

3. Capacity to engage and build consensus among all stakeholders	3	6	50%	1	6	17%	2	3	66%	40%
4. Capacity to mobilize information and knowledge	2	3	66%	2	3	66%	1	3	33%	56%
5. Capacity to monitor, evaluate, report and learn	1	6	17%	2	6	33%	0	3	0%	20%
<b>TOTAL Score and average for %'s</b>	<b>9</b>	<b>30</b>	<b>30%</b>	<b>11</b>	<b>45</b>	<b>24%</b>	<b>6</b>	<b>21</b>	<b>29%</b>	<b>27%</b>

## **Annex 3: UNDP Environmental and Social Screening**

See separate file [[Link](#)].

## **Annex 4. Roles and responsibilities of the staff of the central unit / office dedicated to the management of the PA system, once established**

### **Director: Coordination of the Strategic and Operational Planning**

- Coordinate strategic and operational planning and evaluation of the progress and performance of the system with the support of specialist staff of the entity in charge of managing APs and official submission of documents
- Submit recommendations for creating or modifying PAs and associated documentation for approval by relevant authorities
- Establish institutional partnerships, enter into contracts and hire staff to ensure the implementation of management plans for protected areas and conservation action plans (CAP) within the protected areas system
- Engage and maintain the necessary institutional dialogue to ensure the integration of PAs within national development
- Maintain transparency of the management of PAs system through dissemination of information to all partners and collegial decision-making with stakeholders
- Organize national and international knowledge sharing events (conferences, seminars) on the issues of protected areas and biodiversity conservation
- Facilitate implementation of EIAs required by law to protect the cultural and biodiversity values of protected areas
- Identify priorities in terms of capacity building needs for the management of the system and individual PAs, identify training opportunities particularly in the context of projects and partnerships with academic institutions, and coordinate the implementation of a continuous training program for the staff of the PAs system, including the personnel responsible for surveillance.

### **Accounting Manager: Administrative and financial management**

- Develop outlines and support management units for the elaboration of business plans, budgets and financial reports of their respective PA
- Produce financial and progress reports of the PAs system
- Commission internal and external audits of PAs and the PAs system
- Approve the needs for services, equipment and infrastructure for the PAs system, ensure procurement and maintain an inventory of materials and equipment available for the management of the national PA system
- Develop a payment system for users (operators, tourists, divers, boats) of the PA network based on a fair and harmonized pricing of services
- Propose an allocation of financial resources to the various entities involved in the management of protected areas based on work plans and associated budgets

### **Scientific experts in marine and terrestrial biodiversity: Scientific support for site management - Coordination of monitoring PAs key resources and of management-oriented research**

- Develop an outline for PA management plans complying with legislation and support management committees and management units for their elaboration, their review following the adaptive management approach, and their submission to the Minister of Environment
- Develop outlines and support management units for the elaboration of work plans and progress reports of their respective PA
- Plan signage and demarcation of marine and terrestrial PAs and harmonize throughout the system
- Establish and coordinate effective and stable partnerships seeking mutually beneficial agreements with academic and research institutions and other voluntary partners (participation of tourists, divers and diving clubs, bird watchers, whale watchers) for monitoring of resources and follow up arrangements (including the sharing of knowledge and data)
- Coordinate the design and implementation of management-oriented research and monitoring programs and permanent surveillance activities within the PA network in collaboration with scientific partners and environmental associations and NGOs
- Contribute to training and supervision of participants in the monitoring of indicators of the state of resources and ecosystem services (ecoguards, communities, national NGOs, technical services, students, tourists) and develop monitoring protocols and user-friendly identification material (sheets, visual guides, etc.)
- Use / analyze maps and data on the state of resources according to the needs of management and produce 'briefs' on the state of resources as a tool to support decision by PA management committees and according to the objectives of public communication

### **DB /GIS expert : Management and operation of the PA information system**

- Develop and manage a web platform (or a search portal) providing access to all environmental databases and biodiversity of the Comoros, including a specific database for PAs
- Contribute to the design of protocols for data collection (studies and monitoring) in order to facilitate the integration of results in the GIS database
- Contribute to the training and supervision of participants in the monitoring of indicators of the state of resources and ecosystem services (ecoguards, communities, national NGOs, technical services, students, tourists), including aspects of georeferencing
- Define entry templates for data generated through research and monitoring indicators of biodiversity, ecosystem services and socioeconomic status of PA riparian communities, and measuring the effect of PA management on intensity of pressures on biodiversity
- Build the structure of databases for monitoring PA resources and perform data entry or supervise this task will be done by staff, students or collaborators of partner institutions, and validate databases
- Ensure the integration and dissemination of data in relevant national and international databases, including the World Database on Protected Areas and the Global Biodiversity Information Facility
- Prepare maps and briefs based on available information on state of resources in PAs, understandable by all members of the PA management committees

### **Communication and social mobilization expert: Ownership of PAs and benefit sharing among riparian communities**

- Develop and coordinate the implementation of a strategic communication plan integrating targets and issues at national, regional and PA levels, pursuing the objectives of giving a national identity to the PA system, promoting it and strengthening its credibility to foster public and authorities support to conservation objectives
- Prepare and disseminate information on PA and resources for scientific audiences, PA visitors, the media and the general public
- Contribute to the development of protocols for data collection (through surveys and monitoring) to evaluate the effects of PA management on the quality of life of PA riparian populations
- Encourage voluntary participation of communities and tourists to biodiversity monitoring and research programs
- Mobilize resources and partnerships to support the development of sustainable livelihood activities that benefit communities and reduce pressure on PAs
- Support the organization of environmental events and clean-up campaigns (for beaches, historical and cultural places, natural sites) in the PAs
- Organise national awareness campaigns on the impact of harmful behavior on biodiversity, including the impact of garbage and plastic waste on the flora and fauna, in connection with clean-ups and the promotion of measures to reduce plastic waste (eg natural baskets, recycling and reuse of waste)

### **Legal expert: Legal advice and coordination for of the chain of dissuasion**

- Organise consultations with stakeholders for the development of an appropriate legislative framework to guide the development and management of the national PA system,
- Propose the new texts and any amendments required to i) ensure consistency of laws and regulations regarding PAs, natural resources and any matter that may affect PAs, ii) ensure the relevance of the legislative framework on PAs to the institutional and political context
- Supervise the preparation of the decrees of creation of PAs and disseminate to stakeholders for consultation
- Develop a general outline for collaborative management agreements in accordance with the requirements of the legislation and advise concerned parties (communities living around protected areas, management committees, PA management units and administrative authorities) in the negotiation, review and submission of co-management agreements
- Verify the conformity of PA-specific regulations and of decisions taken by management committees with national regulations
- Ensure an adequate mobilization of staff for the surveillance of PAs in collaboration with regional and local administrative authorities
- Follow up actions taken in response to statements of offense
- Design and coordinate awareness and education campaigns for the public and local communities around PAs on the laws and regulations in protected areas, in partnership with national environmental NGOs and associations
- Organize meetings to notify the authorities and bodies responsible for enforcement (rangers, coast guards, ecoguards, port authorities, port and airport custom officials) to inform them on the FLE and PA boundaries, zones and regulations.

## **Annex 5: Key Component 1 Activities relating to the development of the legal, policy, institutional and capacity development framework for new PA system**

### ***PA Legal and Regulatory Framework***

Under Output 1.1, Activity 1.1.1, the following should be taken into consideration

Since the creation of the first PA of the Comoros, the international outlook as well as the perception of the Comorian population on issues related to the management and governance of protected areas has evolved significantly. For example, the need to plan and manage protected areas on the basis of ecosystem management in combination with community co-management is well recognized. This requires that legislative instruments governing land, forests, fisheries, use of marine and terrestrial resources, tourism, and economic development are mutually consistent with the legislation on protected areas.

**Participatory development.** The development of the national legislative framework on terrestrial and marine protected areas will follow a broadly participatory process to help meet all national and local needs, by encouraging participation and dialogue among different levels of governmental and administrative authority and stakeholders in civil society. This collaborative approach will ensure that legislative and regulatory tools are useful for conservation priorities as well as for the objectives of sustainable development.

#### ***i) A committee to oversee the development of the new legislative and regulatory tools is established***

The tasks required to achieve this output will be overseen by a committee, under the supervision of the MPEEIH, and coordinated by the legal expert of the project implementation unit, to be in charge of planning and conducting required consultative processes, drafting the legislative and regulatory tools and submitting the law for promulgation. The committee will include high-level representatives of the MPEEIH and of the Ministries of Finance and Justice, high-level representatives of the concerned administrative directorates (responsible for environment, tourism, cultural heritage, fisheries, forestry, agriculture and livestock, land use planning, water resources, public safety), representatives of mayors associations, of the private sector, of scientific institutions (UC, CNDRS), of environmental associations and NGOs and representatives of local communities.

#### ***ii) Broad consultative meetings to discuss options are held in the three Islands***

The committee will convene broad-based awareness and consultative meetings with all stakeholders from national institutions from the Union and Island levels, scientific institutions, and NGOs, including local base organizations (LBO) representatives especially from the PA riparian villages to inform them on the main issues related to the development of the new legislative and regulatory tools and invite them to take part in the discussions leading to their development. The concerned parties will be informed through leaflets and presentations so that they are better informed of the issues and thus more able to participate actively and appropriately to consultations.

The following options will be considered:

- a. A new law on protected areas incorporates all provisions in a single legal framework and the corresponding texts in other laws are abrogated,
- b. A new law brings new elements such as the Protected Areas authority or agency, a national planning system, new types of protected areas, a clear definition of powers and decision-making procedures for designating protected areas as part of the national system protected areas, and that it refers to existing provisions to the extent that they are harmonized, or
- c. The chapter 5-5 of the FLE on national parks and nature reserves is amended.

There will be a consideration of the need to amend the laws and regulations on economic development to align with the objectives of protected areas and reduce threats related to agriculture, tourism, coastal management, industrial, mining and extractive industries, energy, transportation, construction, and waste management.

#### ***iii) The new or amended legislation and regulatory texts are drafted and submitted to the competent***

### ***national body for approval***

The new or amended legislation will specify the following elements:

*Definitions.* The new or amended legislation will integrate a set of definitions including

- The definition of a protected area recommended by the World Commission on Protected Areas (WCPA) and the IUCN Programme on Protected Areas: “A clearly defined geographical space, recognized, dedicated and managed, through legal or other effective means, to achieve the **long-term conservation of nature with associated ecosystem services and cultural values**”,
- The definition of a Protected Area System<sup>74</sup>: “*The sum of all lands and waters in a given region with some form of protection, and the management and governance regimes of those lands and waters*”.
- A set of definitions from international guidelines proposed in Chapter 1 of Part III of the guidelines prepared by the IUCN<sup>75</sup>

*Application of the new law with respect to other legislation.*

- The scope of application encompasses the Comorian territory including the exclusive economic zone (EEZ)
- The relationship with FLE will be explicit as well as with other sectoral legislation, including provisions on the designation of protected areas such as forestry, fisheries, management of fauna and flora and water resources management areas

*National objectives.* The law will specify the links between national objectives as set out in the texts of policies and strategic orientation or mission statements and objectives of the legislation on protected areas aimed at the conservation of natural and cultural heritage and ecosystem functions to the benefit of local people.

*Institutional mechanisms.*

- The sharing of powers and responsibilities for the planning, establishment, management and supervision of the overall system of protected areas will be defined for the national government and its decentralized entities, the entity responsible for the management and supervision of the PAs national system, the administrative authorities in charge of the autonomous islands (Governors and Commissioners, Mayors), and local communities, organizations and enterprises involved in protected areas. This assignment shall specify the nature and scope of the powers and responsibilities of each party.

A workshop gathering key national stakeholders in the development of the national system of protected areas, including administration officials at the Union and the Islands levels, experts in various disciplines, including legal experts, and UNDP representatives, was held during the preparation phase of this project to review and validate proposals for the distribution of roles and responsibilities in the supervision and management of the national system of PAs. Results are presented in Annex 3 and shall serve as a reference to guide the clarification of institutional mechanisms, the creation of the structure in charge of the PA system, as well as the development of the policy and legislative frameworks.

- As part of the improvement of the legal framework, the project will assist in drafting a new decree that creates PA system managing entities, including a public entity (agency or commission) at the central and site-levels level to pilot the implementation of the strategic directions of the country's biodiversity conservation within a system of protected areas, specifying mandates, attributions, organigramme and roles of key staff in the management and supervision of the national system of PAs, and that secures state budget allocations for its operations.

*Collaborative management.* The concept of collaborative management will be defined in the law as well as negotiation procedures and the content of collaborative management agreements (refer to output 2.1.6 for further details).

<sup>74</sup> Ervin, J. N. Sekhran, A. Dinu, S. Gidda, M. Vergeichik et J. Mee. 2010. Protected areas for the 21<sup>st</sup> century: Lessons from UNDP/GEF's Portfolio. New York: UNDP and Montreal: CBD. 132 p.

<sup>75</sup> B. Lausche (2012) *Lignes directrices pour la législation des aires protégées*. Gland, Suisse: UICN. xxviii + 406 p.

*Board of Directors and Advisory Board.* Provisions in the new law will specify the mandate, composition, and operational mode of these boards (refer to output 1.1.2 for further details).

*Coordination and cooperation between sectors and between different levels of authority.* Provisions in the law will specify sharing of competences, means, equipment and costs, and conditions for joint project implementation. It will be the responsibility of the central unit dedicated to the PA system to coordinate and consult with concerned sectors and governmental actors affecting PAs as well as with concerned local and administrative authorities.

*Categories of protected areas.* Categories of PAs will be defined to cover all types of protected to establish to protect the unique natural and cultural heritage in the Comoros, through the modes of governance relevant to the Comorian context from the strict protection to sustainable use areas. The correspondence between these categories and the categories defined by IUCN should be clearly established. The possibility of establishing community reserves or voluntary conservation areas will be considered among the potential categories of PAs, insofar as they correspond to the wishes and initiatives of local communities and are consistent with the definition of the WCPA. The category of voluntary conservation areas allows taking into account the initiatives of private owners as well as those of local communities. In both cases, these are initiatives undertaken by local communities or private owners, on land, water or other resources owned or controlled by them over the long term. These community reserves or voluntary conservation areas must meet the condition of a voluntary long-term commitment (inherent to the definition provided WCPA) based on informed consent of all parties to the objectives of conservation and impose the requirement of a right to long-term occupation.

*Temporary protection.* Preliminary steps to meet the requirements for the formal creation of a protected area include surveys, consultation and studies to define the objectives of the protected area, delimit, define zoning, develop a management plan and negotiate roles and responsibilities of local communities, which require significant financial resources and can take a long time. Because of such delays, the project to protect land and resources could be compromised by the sale of the targeted lands to interests incompatible with the objectives of conservation and equitable sharing of the benefits of conservation or by the rapid development of infrastructure such as roads or hotel complexes promoted by public or private investment. The realization of such infrastructure would compromise the integrity of ecosystems to the point where the relevance of creating a protected area would be seriously questioned. It is thus recommended that the new legislative framework provide for a temporary protection status and specify detailed rules for implementing.

*Enforcement.* The terms of conflict resolution, enforcement and penalties for violations will be defined.

*Scope.* It is advisable to include a general legal provision protecting not only the surface of protected areas but also the air space, underground and underwater spaces, against any threat, including the extraction of ore or other, underwater noise, dredging and fishing.

The final version of the new legislative texts and regulations will be shared among stakeholders for a final review before a final validation workshop. The validated version will then be submitted for legal editing and then to the Cabinet of Ministers for promulgation.

### ***PA institutional framework***

Under Output 1.1, Activity 1.1.2, the following should be taken into consideration

The project will support the design and establishment of a Protected Areas authority or agency that has clearly defined powers, duties and responsibilities. This will follow the following steps:

***i) The central unit (agency or office) dedicated to managing the PA system is established***

A central unit (agency or office) dedicated to managing the PA system will be created, including the recruitment of the staff for key posts, as a pool of expertise to oversee and support management units and collaborative management committees of individual PAs and to perform a set of functions identified as the minimum necessary to secure the functionality of the system.

Responsibilities of members of the team are outlined in Annex 4 and will serve as a basis to develop Terms of

Reference for each position:

- Director General: Coordination of strategic and operational planning, appointed by the board
- Accounting Manager: Administrative and financial management
- Scientific experts in marine and terrestrial biodiversity (2): Scientific support for site management - Coordination of monitoring resources of the PA and of management-oriented research
- DB / GIS expert: Management and operation of the PA information system
- Communication and community engagement expert: Effectiveness of the collaborative management approach, ownership of PAs and benefit sharing among riparian communities
- Legal Expert: Legal advice and strengthening of enforcement mechanisms
- Secretary / Administrative assistant
- Driver / Logistician

The specialist positions of the proposed new agency constitute the core of the project implementation team and as such will fulfill the different functions as the project progresses. First, these individuals will be hired as project personnel with the intention that they would take (at least interim) positions with the new agency once created. This approach will assure the greatest continuity and effectiveness from the start of the project. The official structure can be created once the legislative framework has been adopted, so that by the end of the project, the team will have benefited from five years of practical experience and mentoring in addition to specific training. Additional expertise required for managing the PA system from other fields, including microfinance as well as local and microenterprise development will be mobilized by establishing partnerships with existing organizations, through projects or contracts.

***ii) The PA management units (at site level) are established***

PA management units will be recruited by the central unit dedicated to managing the PA system upon approval by relevant authorities (in accordance with collaborative management provisions of the new legislation) and will be deployed to sites. As the PA system evolves, and as the availability of financial resources and national expertise in the management of protected areas increases, management units of PAs will see the opportunity to strengthen the composition of their staff according to their specific needs. Each management units will be composed of:

- PA manager (*Conservateur*): Coordination of all PA management activities including planning, reporting, surveillance and monitoring
- Communication & community engagement officer: Effectiveness of the collaborative management approach and ownership of PAs by local villages
- Rangers (*Écogardes*) (recruited from concerned villages, number varies according to the number of villages involved at each site) : Surveillance, monitoring and environmental awareness
  - Mwali Marine Park (extended) : 14 (the number of forest rangers may be re-evaluated based on the support provided by the forest brigade under the DEF which is partially deployed in the area of the PA terrestrial expansion)
  - Karthala : 18
  - Ntringui : 6
  - Coelacanth zone / *Baie des Dauphins* : 12
  - *Ile aux tortues* : 3 (with the possibility of increasing to 11 if the PA is extended to include Ngazidja's northern area)
  - Bimbini : 9
  - Moya : 3

These will be government appointed – the PA manager from the central level and the Communication & community engagement officer from the autonomous island level. Refer to Table 11 for more details on this. The project will co-support their work through equipment, uniforms and travel allowances through modalities still to be established and agreed during the inception period.

The creation of the entity dedicated to managing the PA system pursues the objectives of enhancing management effectiveness and efficiency for the overall system and harmonizing governance across all levels. Efficiency relates to the sharing of a set of functions and services that will help alleviate the work load of the structures responsible for the direct management of each PA by providing skilled supervision and services that the State

cannot afford to offer at site level for every PA of the system. This entity will be a single point of focus to coordinate national and international partners' interventions in the PA system, to ensure that investments in the PA system are efficient, effective, and contribute directly to the national conservation objectives as set in the PA strategy, to ensure consistency and optimal quality for all PA management tools, to coordinate the development and implementation of species conservation strategies across the three islands, and to act as guardian of the values of PAs against any action likely to affect them.

***iii) The PA system Board of Directors is established***

The central agency dedicated to manage the PA system will be governed by a Board of Directors (BOD), which will report to the supervisory political authority [or will be chaired by the National Director of the Environment, representing the supervisory policy authority]. It is proposed that the Board be composed of the following representatives who will be identified while seeking to ensure equitable representation of the three islands: one high-level representative of the ministry in charge of Finance, the 3 Directors in charge of Environment for the 3 autonomous islands, the Director in charge of Tourism, the Director in charge of Fisheries, 3 representatives of the federative structures of local communities involved in PAs collaborative management, 2 representatives of the private sector.

***iv) The PA system Advisory Board is established***

An Advisory Board will work closely with the BOD and the PA agency to bring together all actors and other key resources involved in the management of protected areas to provide technical and scientific support required to manage the system of protected areas and specific sites. The advisory board can provide guidance and oversight to improve the effectiveness of management and enforcement and aid with issues relating to the mobilization and support to local communities including their effective participation in the process of collaborative management and the equitable sharing of benefits arising from the PAs. The multisectoral representation of the advisory board acknowledges the contribution of biodiversity to poverty reduction and sustainable development which will benefit from a better integration of biodiversity with finance, planning and sector directorates. It is proposed that the advisory board be composed of the following representatives who will be identified while seeking to ensure equitable representation of the three islands:

- (9 to 10) Representatives of the administrative directorates concerned (responsible for environment, tourism, cultural heritage, fisheries, forestry, agriculture and livestock, land use planning, water resources, justice, public safety);
- (3) Representatives of elected local authorities (representatives of mayors associations<sup>76</sup>, as representatives of local authorities / decentralized powers);
- (2) Representatives of the private sector (representatives of the Union of chambers of commerce and agriculture which is a federating structure with an effective representation of all economic sectors);
- (2) Representatives of scientific institutions with recognized scientific and technical expertise in biodiversity conservation, oceanography, cultural history, etc. (UC, CNDRS);
- (3) Representatives of environmental associations and NGOs (Ulanga, and others from the three islands) whose experience and motivation are recognized and fields of action directly related to protected areas;
- (3) Representatives of local communities (representatives elected within the federating structures of the PA neighbouring communities such as the "CODD-zone" which were established by the OCB project for 3 terrestrial sites and other representatives to be identified for the other PAs);
- (3) Directors of RCEDs (where intervention zones are relevant to PAs).

***Data Management***

Under Output 1.2, Activity 1.2.1, the following should be taken into consideration

<sup>76</sup> Mayors are currently designated by Governors while the decentralisation project requests that they are elected by the population but communal elections are planned by the end of 2014.

Databases on biodiversity and the environment are dispersed, precarious, lack visibility and have limited access. Existing databases are hardly valued because potential users are not aware of their content or how to access it. Environmental databases have recently multiplied according to the needs of institutions and opportunities provided by projects which finance their establishment.

Lack of communication among the technicians of these databases and inadequate dissemination of their content may lead to redundancies and scattering of resources, thus reducing the efficiency of the knowledge management system as a whole.

As part of the project preparation, a workshop gathered database managers from various national institutions to get an overview of the contents of databases created in recent years in connection with environment and natural resources (report available in a technical document) and make recommendations for the PA system. The workshop looked into a strategy to promote complementarity, accessibility, usefulness and sustainability of these databases and the feasibility of an interactive database on PAs, available online and taking advantage of existing databases.

Besides the requirements to host project databases in national institutions, the following will be taken into following will be taken into consideration:

- Creating and updating a website for each institution whose data are useful for the management of PAs is not feasible due to the lack of qualified human resources. It is therefore proposed to create a single website where each institution manager of databases would have its own interface to manage its data, but with a single intranet portal as interface for users. The creation of such a site requires the development of a mechanism to harmonize the various datasets and the obligation to cite sources.
- To overcome the lack of communication among technicians of databases but also with users, it is proposed to create a 'Comoros GIS forum' which could take the form of a blog through which technicians and users could present databases and contents, and freely exchange on issues of knowledge management.

The project will support the following set of activities with the aim of making essential information available to PA managers and the public:

***i) The PA GIS office is set up and operational at system and site levels***

A new GIS service dedicated to the PA system will be implemented. This involves the following:

- Acquisition of equipment and software needed to collect and capture data, the database management system, a graphical user interface for easy operation, and query, analysis and visualization tools. Equipment may include GPS, camera and desktop computers for entering data for every PA, a central computer with high storage capacity and large screen, a backup system with high storage capacity, a color printer, a plotter, a scanner and specialized software.
- Training for staff of PA management units developed through collaboration agreements with the University of Comoros and advanced training course for the GIS expert (of the unit dedicated to the PA system), identified to meet specific needs and according to training opportunities in the region.

***ii) A database specific to PAs is accessible to PA managers and all users and updated***

The cartographic database and the GIS will be accessible to all stakeholders and continually evolving. As part of the preparation of the new project, a new GIS database was created using ARCGIS 9.3 software and from existing data to which were integrated newdata -acquired through projects and support from PoWPA- to serve as a basis for the preparation of the PA maps. The following categories of data are included in this new database and will form the basis of the PA-GIS:

- Islands outline
- Towns and villages
- Road infrastructure (paved roads)
- Distribution of ecosystems: primary, secondary, adult and young secondary forests, coral reefs, mangroves, seagrass meadows, rivers and lakes
- Distribution of endemic species (reptiles, birds, bats and butterflies)
- Location of turtles nesting beaches
- Important areas for terrestrial wildlife (high, medium, low)
- Delineation of the existing protected area (PMM) and proposed outlines for new marine and terrestrial

protected areas.

Additional data categories will be required and added according to their availability:

- Land occupation and land use
- Land tenure (identification of public, private, and community lands)
- Distribution of the population
- Pressures and threats to species and protected areas (terrestrial and marine)
- Ecosystem services provided by PAs to local populations
- Endemic species (flora and fauna, terrestrial and marine), distribution of species and habitats
- Cultural, historical and ecotouristic sites
- Administrative divisions, including regions, communes and localities (*lieux-dits*)
- Oceanographic data (currents, bathymetry, etc.)

New categories of data will be required as the needs for managing the PA system will evolve. While several categories of data may be collected to supplement the PA-GIS databases, a substantial amount of information is already supported by other institutions such as the University of Comoros (the herbarium of the Comoros and the Resource Centre for Biodiversity), the CNDRS (Karthala Observatory and the National Oceanographic Data Centre), the Ministry in charge of Environment (Information and decision support center: FAO forest inventory, data from environmental projects such as ASCLME, Nairobi's Convention CHM), Biodiversity CHM, General Directorate of Civil Security (disaster assessment and impact of flooding, drainage network, delimitation of prefectures, towns and villages, transports), National Agency of Civil Aviation and Meteorology (meteorological data over 50 years) and the Urbanisation and Housing Directorate (Ministry of Land, Infrastructure, Urban Planning and Housing) which plans to implement a GIS with data on cadastre and from satellite surveys for the urban development plan. The system will also seek to get the most out of global tools for monitoring natural resources, such as the "Global Forest Watch"<sup>77</sup>.

***iii) A website for the PA system provides access to information on the PA system to all users***

*Data sharing agreement and integration:* The GIS expert will identify the databases hosted in national and foreign institutions that are relevant to support the management of the PA system and will seek an agreement among database owners/managers to freely exchange data and agree on standards for harmonization. If such an agreement cannot be reached, clear rules or conditions will be agreed and applied to enable access to required information. The expert will then develop a website dedicated to the PA system connected to partner institutions' databases and accessible to users through a unique portal.

*Integration of Comoros data into relevant global and regional databases.* The GIS expert will be responsible for the dissemination and sharing of Comoros data on PAs and biodiversity with the World Database on Protected Areas established by IUCN's WCPA, the GBIF, the Regional Observatory for Protected Areas and Biodiversity for the Eastern and Southern African region that is being established as part of the BIOPAMA programme, and any other database related to international environmental conventions and global organizations such as the Alliance for zero extinction and Birdlife International.

***PA manager training***

Under Output 1.2, Activity 1.2.2, the following should be taken into consideration

The results obtained through the Capacity Development Assessment Scorecard and other studies (see Annex 2 and

Annex 6) have pointed out to various aspects of weakness in Comoros PA System, in particular the capacities to formulate and implement policies, legislations, strategies and programmes, and the capacities to monitor, evaluate and learn (adaptive management). In this light, the following sub-activities are being proposed to strengthen the system overall at various level and ensure that the objectives of the project are achieved:

***i) A capacity development plan is elaborated for all actors concerned by the management of the PA system***

Following the National Capacity Self-Assessment Project (NCSA) approach, the capacity development plan will

<sup>77</sup> Global Forest Watch is a dynamic online forest monitoring and alert system to better manage forests and is freely accessible.

be formulated in terms of know-how /skills /knowledge required to carry out the tasks assigned to each function, so main groups of stakeholders are able to fulfill the role expected from them. Thus, the capacity development plan will be developed on the basis of a capacity needs assessment for each category of actor involved in the management of the PA system, updating the results of the GEF NCSA project implemented by UNDP which, inter alia, identified the capacity needs for biodiversity conservation. These stakeholders include PA management committees, PA management units, rangers and ecoguides, customs, environmental and forest brigades, coast guards, lawyers, judges, and legislative drafters, biologists/ecologists, agronomists, fishery and forestry engineers, natural resource users, scientific and academic institutions, economic operators, local authorities/communes and prefectures, and members of development associations. The NCSA was finalized in 2008 and capacity needs (summary for biodiversity conservation presented in Annex 5) will be updated to take account of the evolution of the context and of new opportunities, and will include additional stakeholders such as CSO members and community leaders. The plan will also address the capacity gaps exposed in the Capacity Development Assessment Scorecard.

As part of the capacity development plan, ecoguards/rangers will be trained on the implementation of simple protocols for environmental and resources monitoring. Their permanent presence in the field for the surveillance of the whole territory covered by the PAs creates optimal conditions to contribute significantly to environmental and biodiversity monitoring on the basis of simple protocols during regular routines. The project will also help local communities to develop their ability to advocate for their rights related to environment and natural resources in the PA collaborative management process and in the development of the legislative and policy frameworks for the PA system, with the support of local organizations or elected representatives. Another important aspect to include in the capacity development plan is managers' communication skills to lead negotiations, promote collaboration, and achieve conflict resolution. Managers must acquire the skills needed to defend conservation measures that constrain traditional activities, or to negotiate a long-term, multiparty, decision-making scheme. A specific aspect of the training plan for PA staff and partners will focus on capacity needed to provide a tourist experience that is profitable for village communities, high quality for customers, and safe for the natural and cultural heritage. These capacity needs will be identified as part of the activities under the output 2.3.

***ii) The capacity development plan for all actors concerned by the management of the PA system is implemented***

The project will resort to national scientific and academic institutions (University of Comoros and CNDRS) and their partners to deliver targeted thematic and on-the-job training to new and existing PA professionals/staff and other actors, based on the capacity development plan. The project staff, and eventually, the unit dedicated to the PA system will improve their capacities through the coaching and mentoring of an experienced technical assistant who will support the initial 2.5-year period of the project. The project will also promote self-learning and establish a list of websites dedicated to PAs and biodiversity conservation issues to encourage staff to sustain and continuously improve their abilities. The PoWPA e-training modules (available in French<sup>78</sup>) may be used as basic training material for all approaches. UNESCO has also published several tools<sup>79</sup> to help managers in of ensuring effective conservation and management of PAs on issues that are all relevant to the initiatives undertaken as part of this project, more specifically the following ones: Identifying Site Values and Management Objectives, Identifying Threats, Design Assessment, Assessment of Management Needs and Inputs, Assessment of Management Processes, Work/Site Output Indicators, Assessing the Outcomes of Management and the preparation of an interpretation plan.

Once PA management units are set up and have gone through a year cycle, the project will support exchange visits among units, including rangers, to share experiences and promote best practices within the system. These visits will be an opportunity to include other actors of the island and enrich reflection to better harmonize the PA system and enhance its contribution to improving the quality of life for local people. The most significant lessons will be documented and disseminated through a dedicated column of the PA system newsletter. Annual meetings convening all managements units for the assessment of achievements in preparation of annual progression reports and new work plans will also be another opportunity to develop the capacity of the management PA system.

As part of the capacity development plan, the project will also require the services of consultants from environmental NGOs working in the Comoros such as Moidjio - Centre for Research, Conservation and

<sup>78</sup> <http://www.cbd.int/protected/e-learning/>

<sup>79</sup> UNESCO 2008. Enhancing our Heritage Toolkit Assessing management effectiveness of natural World Heritage sites. World Heritage Series n°23. Downloadable in French from <http://whc.unesco.org/en/series/23/>

Development which specializes in the monitoring of whales, dolphins, marine turtles, and seagrass meadows, and Dahari which can contribute to capacity development in ecological monitoring and to enhance agricultural practices in buffer zones. The project will resort to national and regional expertise to provide training for long term monitoring in the marine environment, namely for coral reefs.

The project will seek to benefit from regional opportunities such as BIOPAMA, IUCN's collaborative programme supported by the European Commission that aims to improve the long-term conservation of biodiversity by promoting the use of the best available science and knowledge and building capacity to strengthen policy and decision-making on biodiversity conservation and protected areas management (terrestrial and marine). The regional component for the Eastern and Southern African region is establishing a *Regional Observatory for Protected Areas and Biodiversity* (Regional Reference Information System) to enable the provision of relevant information and decision-support tools, to promote and facilitate exchange of information with PAs and users and to facilitate capacity development, as well as the exchange and improvement of knowledge on PAs.

### ***Communication and outreach on PAs development***

Under Output 1.2, Activity 1.2.3, the following should be taken into consideration

At the individual level, capacities also refer to the process of changing attitudes, behaviours and practices. An important component of the communication strategy will aim to achieve this. A workshop was held as part of the preparation of this project to review the threats identified in every site (using the GEF tracking tool), identify root causes and potential solutions to implement as part of this project or to integrate in PA management plans. Root causes for unsustainable resource use included the lack of awareness of the importance of biodiversity, especially outside the PMM, and lack of ownership of the conservation objectives of the PMM by village communities - who had enthusiastically supported its establishment in its early stages. Interviews with stakeholders at all levels have highlighted the lack of communication and transparency in the management of the PMM. A strategic communication plan for the PA system must address such communication gaps and re-establish a connection between local communities and their PA and also foster ownership of the PA system at the national level. This will imply the following:

#### ***i) A strategic communication plan for the PA system is developed***

The main purposes of the strategic communication plan for the PA system are to communicate the values of biodiversity and PAs, demonstrate that PAs provide benefits beyond their boundaries, foster cooperation and commitment in managing the PA system and develop ownership by all stakeholders, namely local communities, towards PAs. Communication and information dissemination may also serve project specific purposes, namely enhancing project coordination and efficiency among implementing partners and between local and central levels, and fostering the participation of local stakeholders and public through developing their common understanding of the project's objectives and programme to meet them.

The project will support the development of a strategic communication plan linked to PA objectives at system and site levels, and integrated in PA management plans at both levels. The communication plan will identify main objectives in terms of information, education, mobilization, and communication (internal and external), and design for each target audience main messages, and identify appropriate means of communication and frequency. Messages must be meaningful and relevant to be motivating to members of the target audience. At the local level, the project will seek significant collaborations, namely of notables and local religious leaders whose preaching is highly supportive of the conservation of natural values. Communication plan implementation will be monitored and evaluated for impact with relevant indicators measured with target audiences.

The development of the strategic communication plan may include elements of 'Behavior Change Communication' such as participatory drama where local communities / school children / youth are directly involved in the drama itself to explore issues and possible solutions, working with and from the community's own reality. Local ways of communicating are also powerful avenues to promote a change of perception or attitude. The communication plan may use local media to broadcast songs or display local art forms, drawing or dance that promote the values of biodiversity and environment for their livelihood and quality of life. Comorian people traditionally tell tales to express themselves which could be an avenue to develop a radio serial drama.

The adoption of a participatory approach to create a relationship between stakeholders and PAs and encourage them to collaborate in PA management is an integral part of the communication strategy. More specifically, local communities will be involved from early stages through consultations to understand their priorities and concerns and active participation in all phases leading to the creation of the PAs. The communication strategy will be crucial to maintain local communities' motivation to remain actively involved in their operational management. The participatory assessment of project impacts with target beneficiaries will be part of the communication strategy.

***ii) The strategic communication plan is implemented through partnerships with media and associations***

A communication expert will supervise all aspects related to external communication and act as advisor to improve the effectiveness and efficiency of internal communications. The project will support the drafting of papers and the establishment of partnership protocols between the central unit dedicated to the PA system and national media, community radio stations to cover the project area, producers of television programs broadcast nationwide, and with local associations. The project team will provide innovative ideas and background information for the development of radio and television programmes that will raise public awareness on various issues related to biodiversity, natural and cultural heritage and protected areas, keep the public informed of the project achievements and activities to mobilize people for participatory events, and allow for interactive discussions in local language. The articles published in major press media will cover project activities (launching of activities, information on achievements), and topics such as biodiversity, natural and cultural heritage and protected areas. The project will support the preparation of background material for the media and drafting of thematic papers. Agreements will be made with cultural and environmental protection associations, at the time of major events (World Environment Day, World Biodiversity Day, Turtle Day) to raise public awareness, especially of young people, on the importance of biodiversity, on environmental issues, and on the achievements of the project.

Information on PA management will be made available to the public through various means and on a regular basis, namely through a website developed for the PA system and a PA system newsletter, which will include a specific column to document experiences and best practices in the PA system. The PA system newsletter will be available in printed form (for local communities) and on the website.

An important goal of the communication strategy is to focus on strengthening the relationship between the PA system and the general public and between individual PAs and local communities. As a member of the central unit dedicated to the PA system, the Communication and community engagement expert will supervise the development and implementation of the strategic communication plan and establishment of collaborations with the media and national associations. At site level, a Communication/ community engagement specialist will work in close collaboration with rangers based in every village involved to maintain a dynamic relationship between the PA and local populations.

***PA system expansion***

Under Output 1.3, Activity 1.3.1 and 1.3.2, the following should be taken into consideration

***1.3.1 The PA system strategy is formulated***

A national workshop held in Moroni in 1996 had identified priority marine and terrestrial sites to form the network of protected areas of the Comoros. The results of this workshop were the basis for the Biodiversity Conservation project which has established the PMM in 2001 and until now define priorities for the creation of protected areas. Meanwhile, the status of resources has evolved, the knowledge base on biodiversity has greatly improved and the concept of protected area has evolved as well as the perception of conservation priorities, including addressing global environmental issues such as climate change. To ensure that the national network of protected areas allows the preservation of a representative sample of the biodiversity of the Comoros while maintaining ecosystem functions for the benefit of surrounding communities, it is necessary to revise the priorities on more recent and sound foundations.

***i) The representativity of the PA system is assessed through a gap analysis***

Based on a participatory gap analysis, Comoros will count on a widely vetted and supported 'PA System Strategy', which will guide the overall development of the system over the medium-term. This strategy will set out biodiversity and cultural representation objectives, and the principles and priorities that will guide the development of the national protected areas system.

Various approaches have been developed to perform gap analyses<sup>80</sup> depending on the tools available (with or without maps and georeferenced data). The analysis may include i) gaps in representation of species or ecosystems, ii) ecological gaps where the species are present in the network, but in inadequate environmental conditions, and iii) management gaps where PAs exist but their management systems do not ensure full protection of particular species or ecosystems. Through this gap analysis, the Comoros will identify high priority sites to improve or expand the PA system. The gap analysis will broadly follow this pattern:

- a. Extensive review and compilation of existing knowledge on marine and terrestrial biodiversity, databases, maps, inventories and distribution of fauna, flora and habitats, trends and pressures on resources and their habitat, etc.;
- b. Identification of knowledge gaps that prevent the identification of conservation priorities, and planning field surveys, if required, to fill these gaps – most likely in the marine environment as most inventories were conducted in the terrestrial environment;
- c. Identification of conservation goals / objectives for the PA system by establishing representativeness criteria and targets (numbered) for key biodiversity elements - populations of endemic species and their habitat, critical ecosystems - which will have been identified in a participatory manner as essential for the preservation of the unique biodiversity of the Comoros;
- d. Examination of the existing / effective conservation areas<sup>81</sup> by measuring to what extent the representation targets for each type of habitat and ecosystem are reached;
- e. Identification of key gaps in the PA representation, ecological and management of the existing network for priority biodiversity elements (species and ecosystems) where effective protection is most urgently needed;
- f. Selection of potential new sites that would address priority gaps in the existing PA network;
- g. Identification of the types of PAs to create, assessment of their feasibility and definition of a timetable for establishing the expanded network.

***ii) Cultural and touristic considerations and feasibility are integrated in the strategy***

In addition to considerations for biodiversity, the PA system will contribute to the preservation of Comoros cultural heritage. In this respect, the project will work with UNESCO, CNDRS, the group for the Comoros heritage (*Collectif du Patrimoine des Comores*), and other national experts of cultural and historical heritage to define a procedure to integrate priority cultural monuments in the national PA system as well as management and operational modalities.

The development of the PA system strategy will also take account of other factors such as site accessibility, consistency with island government's development plans, and the touristic potential of each site as a potential source of revenues to contribute to the PA operations.

Although local communities' willingness to see the creation of a PA in their neighbourhood will be assessed through the consultations leading to the signature of voluntary agreements, the strategy will afford special attention to those who have demonstrated an interest and have taken steps to protect natural resources in their environment.

***iii) The PA system strategy is developed and submitted for adoption***

The project will support a broadly participatory process for the development of strategic orientations for the system of terrestrial and marine protected areas, first so that the process is based on the fullest possible set of knowledge on biodiversity of the Comoros whether they are published or not, and then to publicize the ensuing national priorities and promote ownership by all stakeholders and partners. The process will largely involve

<sup>80</sup> A protected area gap assessment is an assessment of the degree to which the biodiversity in a country is adequately protected, through protected areas and other conserved areas. Further guidance can be obtained from: Dudley & Parish (2006). *Closing the Gap. Creating Ecologically Representative Protected Area Systems: A Guide to Conducting the Gap Assessments of Protected Area Systems for the CBD*. CBD Secretariat, Montreal, Technical Series no. 24, vi + 108 pages. ([Link](#))

<sup>81</sup> The gap analysis could be limited to examining the coverage of habitats and ecosystems within the PMM which is the only officially existing PA, but could also include those 3 priority terrestrial PAs to be created rapidly (Mwali rainforest, Karthala forest, Mount Ntringui).

scientific institutions (UC and CNDRS) and environmental NGOs that contribute to biodiversity knowledge in the Comoros, but also encourage the participation of various administrations and stakeholders in the civil society concerned with the preservation of the natural and cultural heritage, to ensure that these orientations are helpful to the priorities of biodiversity conservation as well as the objectives of sustainable development. The PA system strategy will be an integral part of the revised National Biodiversity Strategy and Action Plan.

### ***1.3.2 Legal gazettal of the new or expanded terrestrial and marine PAs***

All the necessary steps for effectively establishing (i.e. gazetting) new PAs will be completed, building up from the achievements of baseline interventions. These steps are: (i) biodiversity and socio-economic surveys; (ii) drafting of legal texts and due consultations; and (iii) demarcation of sites on the ground. The actual approval of proposed decrees will be the government's responsibility (not the project's). The gazettal of the new terrestrial PAs will be completed first since most required surveys were achieved through the OCB and PoWPA projects. The identification of priority sites to create additional MPAs requires additional surveys and is dependent on the completion of the PA system strategy. Thus the legal gazettal of new PAs will likely be carried out in two stages.

#### ***i) Conducting required additional surveys***

Biodiversity knowledge gaps that prevent the identification of conservation priorities will have been identified in the gap analysis (act. 1.3.1), which will also include the planning of required field surveys to fill these gaps. These will most likely concern the marine environment, as most inventories in the Comoros were conducted on the terrestrial environment. The planning of surveys will capitalize on existing knowledge on terrestrial and marine biodiversity of the Comoros (published and unpublished) collected through an exhaustive review of the literature and through interviews with scientists (national and international) conducting field surveys in the marine and terrestrial environments and with community members having an empirical knowledge on resources (such as fishermen). The planning of field surveys will be discussed and validated with all scientist and non-scientist partners in order to carry out studies as targeted as possible and avoid unnecessary or duplicated efforts. The results of these surveys will confirm or modify the identification of priority sites for the creation of PAs and MPAs.

Socio-economic surveys must allow the recognition of local people's rights in the negotiations leading to the collaborative management agreements and ensure that the establishment of the PA does not cause them any detrimental effect. These surveys will document the perception of local communities about their resource use rights in the PA, resource use and related benefits (monetary or subsistence) and thus provide a socioeconomic baseline against which the impacts related to the creation of protected areas will be assessed. This assessment will guide the development of mitigation measures, such as supporting the development of alternative livelihood for the people who will see their access to resources restricted by conservation measures.

A methodology will be developed to document the use of land and resources by village communities specifying data collection methods, expected results and format to integrate them to the GIS-PA. Survey teams will be trained on the use of the methodology to conduct the surveys in Ngazidja and Ndzواني. Similar surveys were conducted in Mwali as part of the PDRM supported by the AFD and relevant data will be integrated in the databases. If needed, some data may have to be updated, which will be evaluated in collaboration with the AFD project on PMM. The use of land and resources by village communities within the PAs and peripheral zones will be documented and mapped, discriminating gender and age groups. Databases will be established for every village concerned by the creation of a PA (population size, socioeconomic activities and population involved, natural resources, their uses and user groups).

#### ***ii) Identification of conservation objectives of individual PAs and validation of delimitations and zonation***

Delimitations and zonation were proposed for the creation of three terrestrial PAs (Karthala forest, Mount Ntringui forest and Mwali rainforest) on the basis of a participatory identification of communities' perceptions of forest boundaries, but specific conservation objectives have not yet been defined. The identification of specific conservation objectives (rare/threatened and endemic species, habitats requiring protection or restoration, valued ecosystem services, cultural assets) for each site, as required to justify the creation of a PA, must guide the delimitation and zoning. Once objectives are defined, proposed delimitations and zoning will be confirmed or revised. Conservation objectives will guide the elaboration of the management plans and the assessment of the performance of the management.

The project will first identify the objectives of conservation of terrestrial priority areas: the Karthala forest,

Mount Ntringui forest and Mwali rainforest (as an extension of PMM) since the biodiversity surveys that were conducted in these areas provide an adequate knowledge basis to support such decision. The identification of conservation objectives will be completed for the other sites once the gap analysis and required surveys will have allowed a better identification of priority sites for the creation of protected areas marine and coastal.

### *iii) Drafting of legal texts and due consultations*

The feasibility of the creation of protected areas with proposed delimitations and zonation will be assessed through a participatory approach involving the following steps:

Information meetings and consultations will be held with all communities, following which voluntary agreements will be signed by representatives of the villages as well as any private landowner. The search for the voluntary support of communities in each village has the advantage of allowing exchanges, the expression of needs and concerns of communities and other owners, and understanding of the subsequent steps in which they are involved. This step is particularly important in the collaborative management approach based on the development of a sense of responsibility towards community conservation issues and sustainable management.

A participatory validation of the proposed delimitation of the area will be carried out with the services of Environment and Forests, under the supervision of Directors of Environment of each island, mayors of the communes concerned, representatives of local communities and, as possible, owners / users of the lands adjoining the future PA. This participatory delimitation will enable them to integrate the limits of the PA and to identify areas requiring further negotiations. If possible, the project will attempt to combine this activity with the identification of user rights.

Feedback meetings held in one of the villages concerned by the PA and bringing together all stakeholders to present the map of the protected area, take account of their concerns, and agree on a plan to address unresolved issues and conduct required additional negotiations to reach a consensus.

### *iv) The decrees of creation and modification of the PAs are submitted for adoption*

The proposal presented in the PIF provides for the establishment of a terrestrial PA for Mwali rainforest. In conjunction with the French Development Agency (AFD), which concentrates its support on strengthening the PMM, it was proposed to modify the delimitation of the PMM to create a single large PA integrating the marine park, both slopes of the ridge forest and the watershed connecting the PMM and the forest, and to revise the objectives of the large PA and consequently the proposed boundaries. The creation of a single large PA recognizes the continuity and interdependence of the two ecosystems and seems more appropriate to plan a coherent management addressing all pressures on coastal resources and islets while preserving the biodiversity of the Mwali forest. The two projects will work closely to develop the Decree amending the Mwali protected area.

At first, the project will prepare the submission of decrees for the creation and modification of the PAs of the Karthala forest and Mount Ntringui and the extension of the PMM including Mwali rainforest and the watershed of the PMM. The decrees for the creation of marine and coastal PAs will be elaborated as the previous identification and delineation steps will be completed.

### **Activity 1.3.3 Demarcation of sites on the ground**

*Signage.* The project will provide permanent signage on land and on the coast (to be viewed from the sea) to indicate the location of MPAs. Large boards will be installed along the main road at both ends of the coastal line of each MPA and along access route, near the PA visitor centre, and near main villages as needed. Indications on the boards will include the name of the MPA, and display a recognizable outline of the MPA, zonation with allowed/prohibited activities using pictograms, known reference points and village locations.

A number of buoys were installed to demarcate the seaward boundary of the PMM but disappeared rapidly. The effectiveness to invest in the costly installation of buoys will be investigated in close collaboration with the AFD project and the *Conservateur* of the PMM and compared with alternatives such as community-defined areas based on their intimate knowledge of the marine area and voluntary compliance to zoning and regulations they have contributed to define.

The project will provide permanent signage on land for terrestrial PAs, using large boards along the main road at both ends of the PA, near the PA visitor centre, and near main villages as needed. Indications on the boards will include the name of the PA, and display a recognizable outline of the PA, zonation with allowed/prohibited activities using pictograms, known reference points and village locations.

## **Annex 6: Summary of capacity development needs for PA management**

Capacity development needs were identified for main biodiversity conservation actors as part of the NCSA project implemented in 2006-2008 and are summarized as follows:

- PA management committees: i) Ability to monitor and evaluate the implementation of the work plan of the management unit of the protected area, manage conflicts and negotiations, to define clear and transparent procedures to follow-up resources management and collection of taxes; ii) Ability to advocate in favor of the issues of protected areas; iii) Ability to adequately represent the riparian populations of the protected area and to adequately transmit information between them, the unit of the protected area management and administration.
- Rangers and ecoguides: Adequate knowledge of the ecology, ecosystems and species to be protected and ability to ensure their missions of inventory, monitoring, and raising awareness among natural resource users (tourists, loggers, divers, distillers, charcoal burners, fishers)
- PA management units: i) Ability to ensure the effectiveness of protected areas as a tool to conserve biodiversity and ecosystem integrity; ii) Ability to maintain interest and an appropriate perception of the issues of protected areas within the communities involved in collaborative management.
- Customs, environmental and coastal brigades, forest rangers: i) Sufficiently informed and aware of environmental issues to be able to play their full role in monitoring and surveillance; ii) Equipped with adequate means of communication and transportation (motorcycles and boats) and tools (e.g. identification cards for endangered species) for monitoring, surveillance as well as their own safety, iii) Knowledge of existing legal texts on the measures for natural resources management as well as application procedures for exploitation and export.
- Lawyers, judges, legislative drafters: i) Knowledge of legislation relating to conservation of biodiversity and natural resource management; ii) Adequate expertise in environmental law and laws relating to natural resources (Law of the sea, land, forest, agriculture, fisheries).
- Biologists / ecologists, fishery, agronomists and forestry engineers: i) Capacity to carry out inventories of fauna and flora, population monitoring studies to determine sustainable harvest levels and other management and conservation measures; ii) Ability to access, search and exploit databases of the environmental information system.
- Natural resource users (tourists, loggers, divers, distillers, charcoal burners, fishers): i) Knowledge of laws and regulations on conservation of biodiversity and sustainable management of natural resources; ii) Aware of the finite nature of natural resources and able to contribute to their sustainable management.
- Scientific and academic institutions: Ability to ensure the necessary dialogue to develop training programs to improve the skills of environmentalists, agronomists, foresters, fishery engineers, and managers to conserve and sustainably manage species and ecosystems against anthropogenic and natural pressures.
- Economic operators: Ability to develop income generating activities compatible with the conservation of biodiversity
- Local authorities/ communes and prefectures: i) Understanding of environmental issues and capacity to implement local environmental management measures relating to their mandate with communities; ii) Ability to stimulate the development of economic activities in the peripheral zone of the protected areas consistent with the conservation objectives of the protected area.
- Members of development associations: Sufficiently aware and informed about environmental issues to help educate their community

## Annex 7: Studies and Reports from the Project Preparatory Phase

<p><i>Stratégie d'engagement des parties prenantes a la mise en place d'un système d'aires protégées aux comores</i></p> <p>By Mohamed ALI MLAZAHAHE November 2013</p>	41 pages
<p><i>Analyse économique et financière sur les investissements de base pour le Projet PNUD FEM d'aires protégées</i></p> <p>By Hassane Mgomri December 2013</p>	33 pages
<p><i>Cadre juridique, politique et institutionnel pour soutenir un système national d'aires protégées étendu aux Comores</i></p> <p>By Madiane MOHAMED ISSA May 2013</p>	44 pages
<p><i>Cartographie sur la delimitation proposee des aires protegees marines et terestres des Comores</i></p> <p>By Farid Anasse (being finalised)</p>	26 pages
<p><i>Finances de la conservation : pistes sur la durabilité des aires protégées aux Comores</i></p> <p>By David Meyers March 2014</p>	20 pages
<p><i>Mission Report and Summary UNDP-GEF PRODOC in French: Development of a national network of terrestrial and marine protected areas representative of the Comoros' unique natural heritage and co-managed with local village communities</i></p> <p>By Dominique Roby May 2014</p>	121 pages