

UNITED NATIONS DEVELOPMENT PROGRAMME

GLOBAL ENVIRONMENT FACILITY

PROJECT OF THE GOVERNMENT OF MAURITIUS

PROJECT DOCUMENT

PROJECT TITLE:	Partnerships for Marine Protected Areas in Mauritius and Rodrigues
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SUMMARY: The Republic of Mauritius recognises the importance of the protection and sustainable management of coastal and marine biological resources as confirmed in the National Environmental Strategy, Ten Year Development Plan for the Fisheries Sector, the NBSAP and the National Physical Development Plan reports. Based on these national priorities, this project will foster sustainable use and equitable sharing of derivable benefits from Marine Protected Areas throughout the Republic of Mauritius through broad based participation of all the stakeholders. The specific objectives of this project will be to: (i) Develop an enabling policy and institutional framework for sustainably co-managed MPAs throughout the Republic of Mauritius (ii) Develop innovative co-management arrangements for MPAs and adapt them at a representative demonstration site in Rodrigues.

Section 1

Part Ia Situation Analysis

One of the main income-generating sectors of the economy of the Republic of Mauritius is tourism. This sector heavily depends on the quality and level of preservation of our coastal zone including its marine biodiversity. Any degradation of this resource as a result of its unsustainable use, pollution, erosion, over fishing or conflicting uses among others would certainly put this resource at stake and consequently deeply affect the country's economy. Two marine areas (Blue Bay and Balaclava) have been declared as Marine Parks under the Wildlife and National Parks Act in 1997. These areas have been reproclaimed as Marine Protected Areas/Marine Parks under the more recent Fisheries and Marine Resources Act in year 2000. The successful implementation and management of these Marine Protected Areas would benefit from a partnership-based approach incorporating all the relevant stakeholders in the day-to-day and long-term management of these areas. This project would therefore contribute to the national efforts aiming at conserving the unique marine biodiversity of the country by providing capacity, effective financial mechanisms, means and tools for the creation of a national system of Marine Protected Areas (MPAs) based on the wide commitment and participation of all the stakeholders playing a role, directly or indirectly, in the coastal zone of all the islands constituting the Republic of Mauritius.

The national efforts which support the conservation of marine biodiversity within the Republic of Mauritius are clearly made through the existing legal framework and the corresponding national policies and priorities.

In fact, the following main pieces of legislation which are in force in Mauritius are directly linked to the said objectives:

- *The Fisheries and Marine Resources Act (1998) which is the main piece of legislation which concerns the project by providing the main legal framework for the setting up and management of Marine Protected Areas. Two Marine Parks (Blue Bay and Balaclava) have been reproclaimed in year 2000 under this relevant piece of legislation*
- *The Environment Protection Act (2002) which contains a specific Section pertaining to the Integrated Coastal Zone Management*
- *Other pieces of legislation including The Wildlife and National Parks Act (1993), the Forest and Reserves Act (1983), the Town and Country Planning Act (1954), the Pas Géométriques Act (1895), the Continental Shelf Act (1970), the Maritime Zones Act (1977), the Plants Act (1976) and the National Coast Guard Act (1988) among others contain sections pertaining to the achievement of the same goal.*

These efforts are equally supported by national policies and priorities which are outlined in the following reports:

- *The National Environmental Strategy, 1999 (Second National Environmental Action Plan (NEAP2) 1999) recognised that "Intense pressure is exerted on the coastal zone from both sea based activities and land based activities". The second National Environment Action Plan has identified a number of programmes, for the management of the coastal zone and inshore areas including: the establishment of a framework for Integrated Coastal Zone Management (ICZM), the consolidation of established marine parks and the assessment of the need for more reserves*
- *The Ten Year Development Plan for the Fisheries Sector, developed in 1997 to reorganise the*

Fisheries sector, concluded that given the limited potential for the further development of the marine capture fisheries, emphasis must be placed on sustainable resource use and protection of the marine environment and on maximising returns from existing fisheries through value addition

- *Through the Second Environmental Investment Programme (EIP2), an Integrated Coastal Zone Management Plan is being developed by the Ministry of Environment. Activities identified in this document complement those in the National Biodiversity Strategy and Action Plan (NBSAP), and include “the development of a marine park action plan; finalise management plans including zoning, train staff, implement action plan and evaluate and determine the need for more reserves”. Sustainable ecotourism development is also recognised as a priority in the NBSAP and specifically the ‘sustainable use of biodiversity resources so as to support its conservation and optimise the economic and social benefits derived from their utilization’*
- *The Budget Proposals 2003-2004 Speech of the Chief Commissioner of the Rodrigues Regional Assembly defines the priorities for Rodrigues. These priorities include the protection of the environment. The section of this speech pertaining to the fisheries sector mentions that “Over-exploitation and degradation of the lagoon has resulted in a substantial reduction of fish catch and income of fishermen [...] A provision of MUR 5 million is also being made for the creation of a Marine Protected Area in the region of Mourouk. In view of its global significance, the project will be co-funded by the Global Environment Facility”.*

However, the successful implementation and sustainable management of Marine Protected Areas within the Republic of Mauritius has not been optimal for the following reasons:

- *Limited resources and inadequate capacities within the concerned organisation. As part of the project, the Marine Parks Division of the Albion Fisheries Research Centre (AFRC) dealing with the setting up and management of MPAs would benefit from more staff and additional financial resources for the proper implementation of the sections of the Fisheries and Marine Resources Act (1998) pertaining to MPAs*
- *Fragmentation in the approach and the management of coastal and marine resources at the national and site level. These would be streamlined and integrated*
- *Limitations in enforcement. The capacity to enforce policy and legislation and to develop alternative management models needs to be strengthened by building capacity at the level of the staff dealing with MPAs*
- *Innovative financial mechanisms to ensure the sustainability of the existing MPAs need to be tested as the proposed Marine Protected Area Fund defined under the Fisheries and Marine Resources Act 1998 has not been implemented yet*
- *Mechanisms for enforcement and compliance monitoring would need to be reinforced, reviewed, tested and applied*
- *Commitment of all stakeholders are usually not fully secured (including coastal hotel owners and fishermen amongst others) among the main elements hampering sustainability.*

PROJECT DESCRIPTION

I: ENVIRONMENTAL CONTEXT

1. The Republic of Mauritius is located 800km from the southeast of Madagascar in the Indian Ocean. It consists of a main island, Mauritius, and a group of small islands scattered in the Mascarenes; Rodrigues, the Cargajos Carajos (St Brandon), Agalega, Tromelin and the Chagos Archipelago (Diego Garcia). The total land area of the Republic of Mauritius is 1,852km² with an Exclusive Economic Zone (EEZ) extending over an area of 1.9 million km².

2. The volcanic nature of the islands origin and millions of years of isolation and adaptation has resulted in the evolution of diverse biota with a high degree of endemism. Human settlement and interference has, however, led to extensive habitat degradation and high rates of species extinction. It is estimated that only about 2% of the land remains under native vegetation. Humans have impacted less upon the smaller islands and for this reason they are the targets of much of the existing conservation efforts aimed at protecting both terrestrial and marine biodiversity. These islands harbour numerous endemic fish and corals and are critical in the dispersal of juvenile fish, thought to be transported seasonally as far as the Cape of Good Hope.

II: GLOBAL BIODIVERSITY VALUE

3. Mauritius has spectacular coastal and marine biological resources that are of global importance. These are the richest localities in terms of marine biodiversity in this sector of the Indian Ocean. The extensive reef systems of Mauritius were recognized by Kelleher *et. al.* (1995) who posited that Rodrigues has the best reef development in the Mascarene group of islands.

4. A total of 290 marine families comprising 1656 species have been recorded within the inshore area. Around 50 species are of economic importance including fish, molluscs, lobsters and shrimp. The marine fish fauna is exceptionally rich with 786 species identified. Coral diversity is also significant, 159 species of scleractinians have been identified.

5. Mauritian waters and coastal areas are particularly important for a number of migratory species such as tuna and other bony fish, cartilaginous fish, marine turtles, whales, dolphins and many species of sea birds. St. Brandon Island in the Cargados Shoals is the nesting ground for the endangered green (*Chelonia mydas*) and hawksbill (*Eretmochelys imbricate*) turtles in addition to an important breeding ground for numerous seabird colonies also found on Round Island, Serpent Island and the islets around Rodrigues. The Rivulet Terre Rouge Estuary Bird Sanctuary, with Ramsar status, is recognised as being internationally important for 14 regularly visiting migratory birds as well as for 3 species of endemic plants.

6. Over 100 Mauritian coastal and marine species (including corals) feature in CITES appendices as threatened or endangered. The IUCN red list of threatened animals in Mauritian/Rodriguan waters includes the Green Turtle (*Chelonia mydas*), Hawksbill Turtle (*Eretmochelys imbricata*), Small Giant Clam (*Tridacna maxima*), Bénéitier de Rosewater (*Tridacna rosewateri*) and Blainville's Beaked Whale (*Mesoplodon densirostris*).

7. Bio-prospecting is also carried out on Mauritius marine species, such as endemic ascidians and

sponges, which are being investigated for their antibiotic properties and their potential as drugs against cancer

III: THREATS TO MARINE BIODIVERSITY AND UNDERLYING CAUSES

8. In spite of its recognized global and national significance, Mauritius' coastal and marine biodiversity has had limited protection. The main threats to the marine environment (as validated through a National Biodiversity Workshop with all stakeholders during the 'PDF A' preparatory phase) were as follows: over fishing, destructive fishing, and habitat degradation from poorly planned construction and infrastructural development in the coastal zone. The impacts include loss of biodiversity, depletion of target species, changes in species assemblages, coral damage, sedimentation and pollution. These pressures affect both Mauritius and Rodrigues to varying degrees. Though some environmental disturbance is linked to natural phenomena, most of the afore-mentioned pressures may be traced to human interference. A detailed threats analysis documenting the underlying causes of the principal threats to biodiversity is attached as Annex I; the root causes of the threats are summarised below:

i) Marine Resource Management is divided between a number of different agencies: Government services tend to be organised by sector at both a national and site levels, leading to a fragmentation of activities and policies. There is no institutional mechanism drawing all the agencies together to make decisions in a collective manner. This can result in activities being carried out that are detrimental to the marine environment and regulations not being adequately enforced because of overlapping responsibilities.

ii) Limited capacity to enforce policy and legislation relating to biodiversity conservation in coastal and marine environments: Policy and legislation is often insufficiently enforced, due to a dearth of capacity - both operational resources and trained personnel necessary to implement existing command and control management models. Generally, as a result of limited training opportunities and awareness, there is inadequate capacity for integrating conservation needs and management objectives into regional and local-level development planning and tourism planning and development processes. Improved construction practices, wastewater treatment, managing boats and tourists require costly inputs and without regulation and associated penalties incentives for hotel and tour operators to be environmentally friendly are low.

iii) Current methods of managing the marine environment, particularly Marine Protected Areas, have limited effectiveness and are unsustainable: Capacity within agencies and individuals charged with the responsibility of managing the marine environment is low. Exposure to emerging lessons and best practice management methods for resource management from elsewhere is limited. While a regulatory framework is provided under the Fisheries and Marine Resources Act 1998, capacity weaknesses impede management.

iv) Lack of a working co-management model in marine protected area management in Mauritius: Awareness is low with regards to methods of consulting with and bringing stakeholders together in a forum with decision making powers, utilising innovative financial mechanisms and spatial management models and integrating the needs of local communities and other stakeholders into the conservation agenda. Currently no marine protected areas in the Republic of Mauritius are managed in a participatory manner. Given the dependence of local communities on living marine resources and the extent of the coastal area leased by the private sector for development this is a considerable problem. Resource users currently do not comply with regulations in existing MPA's and a lack of consultation in their

establishment, or involvement in management decision making processes, undermines the efficacy of operations.

v) Limited conservation awareness: Awareness is generally low, within resource user groups such as the community, tour operators and tourists, as to the value and vulnerability of the marine environment and the long-term impact of destructive resource use. Some members of the local community recognise the problem but the high dependence upon marine resources, with few other livelihood alternatives, forces people to exploit the resources in an unsustainable manner. Knowledge with regard to environmentally friendly resource harvesting techniques and sustainable fisheries management is limited. Tourism and other land development plans do not take into account marine conservation objectives and frequently have negative impacts. Decision makers often fail to recognise the importance of the marine environment in sustaining rural livelihoods. Lack of conservation awareness is largely bought about by a lack of environmental information and training opportunities in various sectors of society: community members, tourists, land developers, local authorities and decision makers.

A detailed threat analysis is provided in Annex I.

9. During project preparation time has been devoted to identifying the most appropriate interventions to achieve marine conservation objectives in Mauritius. This project has been specifically designed to address issues raised in the gaps and constraints analysis reflected in the NBSAP and Ten Year Fisheries Development Plan, as well as those identified in the project consultative process. These emphasize the need to explore new approaches and opportunities for the management of marine resources as current command and control models are not achieving desired results in Mauritius. A number of stakeholders are directly dependant upon marine resources and the coastal zone and for this reason any conservation efforts will depend upon their good will and support. For this reason this intervention will develop and pilot best practice management techniques, taking an integrated approach involving all stakeholders, targeted at a representative demonstration site.

10. Specifically, the project aims to demonstrate a model of co-management for the inshore marine environment, engendering broad stakeholder participation among the public sector, private sector and local communities that focuses on the sustainable use and equitable sharing of benefits. Systemic and institutional capacity development, with a particular emphasis upon long-term sustainability, will provide a strategic framework for the replication of best practices in other existing and planned MPA's. The government is highly supportive of the project. The development of MPA's and sustainable use of marine resources are currently national priorities particularly as no national network of MPA's exists. This project aims to facilitate the progression towards such a network by demonstrating best practice management techniques, which if proven to be affordable and effective, will be replicated by the government within existing programmes throughout the country.

Demonstration site

11. Existing efforts to protect the marine environment are fragmented and capacity levels for management are limited. These constraints are hindering the development of a national system of protected areas; meanwhile significant biodiversity is being lost. For this reason it is critical to the project's overall success and replication potential that a site is selected that will demonstrate a high level of achievement.

12. Rodrigues is the smallest of the Mascarene islands, spanning an area of 109km², and is situated

570km to the east of Mauritius. The island is surrounded by a coral reef platform that forms an almost continuous rim enclosing the 200km² lagoon and eighteen small islets. More than a hundred species of corals are found in the lagoon. The reef is being monitored on a yearly basis under the Global Reef Survey. In 2000 Reef Check showed that the coral reef is still in good condition with a cover of live coral of 51% and just 2% coral mortality.

13. Terrestrial biodiversity importance is still high, despite rapid land conversion from the palm rich forest thought to originally exist. 145 indigenous and 49 endemic plants have been recorded. Many endemic bird species are now extinct with only two threatened endemics remaining; the Rodrigues warbler (*Acrocephalus rodricanus*) and the Rodrigues fody (*Foudia flavicans*).

14. To the east of the island lies an area known as Mourouk (see map in Annex IX) which has been selected as the demonstration site. The lagoon in the Grande Passe/Mourouk area is 4km wide and includes Hermitage, Chat and Flat islands, famous for their unique flora. The Grande Passe channel is the largest natural channel in Rodrigues (200m wide, 2.5km long and 47m deep in certain areas). Within this area falls the Port-Sud-Est pass which has been declared a fishing reserve. The boundaries of this reserve will be extended by the Minister of Fisheries and given Marine Protected Area status.

15. The livelihood of local communities in the Mourouk is underpinned largely by artisanal fisheries. There are estimated to be around 600 registered and amateur fishermen in the area covered by the project site. Small holders undertake subsistence agriculture, to supplement their diet and income, when there is sufficient rain - this is however on a very small scale.

Global Biodiversity at the demonstration site

16. Endemicity is high in Rodrigues, the Cargados Carajos Shoals and Agalega. These South Mascarene Islands have been classified as fourth, after the Philippines, the Gulf of Guinea and the Sunda Islands, on the basis of their degree of marine endemism and the threats they face, (Kelleher *et. al.* 1995).

17. Recent work on the flora and fauna of the Rodrigues lagoon¹ has identified over 1000 species from nine phyla. Species potentially new to science have been found within the bivalves, corals, fish, polychaetes, amphipods and isopods with possibly over 30 from the latter group as yet undescribed.

18. An oceanographic survey report was made of the demonstration site during the preparatory process, financed by a GEF PDF A and noted high density and dimensions of fish. An unnamed species of pomacanthidae, which is likely to be new to science, was also found by Mr Daniel Pélicier at the location in 1997 and again during the survey.

Threats at the demonstration site

19. Depletion of living resources, lack of public awareness, pollution and coastal developments were identified as the major threats and underlying factors relating to the loss of marine biodiversity at a National Marine Biodiversity Workshop for key stakeholders, organized as part of the PDF 'A' preparatory stage for this project. In Mourouk such a situation is clearly exemplified. Threats relate specifically to:

¹ Preliminary Report on recent survey work in the Rodrigues Lagoon by Shoals of Capricorn Programme, reported at a Rodrigues Marine Biodiversity Workshop, in October 2001.

- (i) Destructive marine harvesting methods such as basket trapping and octopus catching which damages coral.
- (ii) Unsustainable harvest levels of fish and octopus
- (iii) High sediment loads from inappropriate land use in the catchment causing coral damage

20. The impact of fishermen both on the reef and the fishing resources is thought to be the largest threat to marine conservation at this time. While the ecological integrity at the target site is high, this threat is expected to accelerate over time. Currently, fisheries management has been effected through largely through traditional fisheries methods, including closed seasons, and size limits, with allowable catch determined through fish stock assessments. Inadequacies in catch data, and information on inter-specific relationships in near shore areas, coupled with weak enforcement has undermined the effectiveness of these tools². While Government Policy allows for the institution of spatial management tools, to create fishery set asides to protect spawning biomass and improve productivity, the know how to ensure optimum design is generally lacking. Furthermore, appropriate management arrangements have yet to be demonstrated. This situation is apparent at the project site, where part of the lagoon area is a designated fishing reserve (approximately 0.16km²) and therefore closed to net fishing. However, limited capacities to manage the reserve and resources, in terms of personnel and equipment, prevent adequate control. Inadequate data means that the appropriateness of the reserve's design is not known.

21. Threats from tourism activities and coastal developments are currently relatively low. These are expected to increase significantly in the near future with numerous plans in the pipeline, mainly tourism and waterworks development. The future impacts of these developments are critical concerns of local stakeholders. There is currently one hotel (Ebony Mourouk Hotel) and two hotel projects are planned at Graviers. This intervention comes at an opportune time to reduce the threats to the marine environment that these new initiatives may impose.

22. Low awareness of the importance and sensitivity of marine biodiversity is one of the critical underlying factors contributing to the loss of marine biodiversity on Rodrigues. This is at all levels of society, among decision makers, the private sector and local communities. In some cases the importance of the resources are recognised but awareness of appropriate use or management solutions are lacking.

23. In addition to being representative of much of the marine environment throughout Mauritius and Rodrigues, and facing very similar threats, the Mourouk area has a number of other advantages justifying its selection as the demonstration site.

- i) High level political support for the project; demonstrated by letter of commitment from the Chief

2 Traditional fisheries management methods E.g., catch quotas, closed seasons and size limits based on annual stock assessments have generally had disappointing results in terms of engendering sustainable utilisation in the fisheries sector in developing countries (FAO, 1997). This lack of success may be attributed to a lack of precision in even the best stock assessments, poor quality catch and effort data, ineffective enforcement of traditional fisheries regulations, poor management advice, and failure by fisheries policy makers to follow scientific advice (e.g., Cannon, 1997). Even the best known reef fisheries have insufficient catch, effort and biological information to perform adequate stock assessments (NFMS, 1995). A consensus has emerged among fisheries scientists that sustainability in reef fisheries may be best achieved by creating a network of protected areas (NFMS, 1995). Protected areas allow depleted stocks to rebuild (e.g., Roberts, 1995), and abundant stocks to be maintained as fishing pressure increases, and contribute to nearby fisheries through a "spillover" effect and via larval dispersal. In the case of highly depleted fisheries, "spillover" from newly created protected areas can result in increased catches, creating clear incentives for community management (*ibid*). In such cases, barrier removal may principally involve biological underpinning and facilitation of community implemented protected areas, dissemination of results from demonstrations, and adjustments to policies and regulations. (Canon pers comm.)

- Commissioner of the RRA, land area provided for the demonstration site and contribution of significant cofinancing.
- ii) The island has just received autonomy with the creation of the Rodrigues Regional Assembly whereby the executive council is mandated to appropriate legislation in consultation with the state law office for the protection and management of marine resources and undertake the daily management of the island. This will facilitate the coordination between the different departments dealing with the marine environment.
 - iii) Communities and the private sector are highly supportive of the project.

24. It is envisaged that if a workable model can be demonstrated at Mourouk, opportunities to influence policy and to build an enabling environment for marine protected area management throughout the Republic of Mauritius will be possible. The high level support, provided by the Rodrigues Regional Assembly, will be important both at the demonstration site and in influencing central government to improve national level marine conservation by supporting the recommendations of this project. This will be critical in supporting the ICZM process and laying the foundations for a system of marine protected areas in the future.

25. The Mourouk site is representative of other potential sites in Mauritius that may be selected as MPA's in the future. These are areas of high biodiversity, where tourism potential is high (but currently not capitalized) and where high standards of development must be enforced to maintain their conservation value. Invaluable lessons will be learnt at this pilot site and will be readily transferable to the Mauritian context.

IV: BASELINE SITUATION

National Level

Institutional management responsibilities

26. The Ministry of Fisheries is the responsible enforcement agency for marine conservation under the Fisheries and Marine Resources Act 1998. The Albion Fisheries Research Centre (AFRC) is the technical arm of the Ministry of Fisheries. The Ministry of Fisheries (through AFRC) is the statutory organization for the setting up and management of MPAs within the Republic of Mauritius (Fisheries and Marine Resources Act 1998). It is equally the enforcing agency for all matters relating to coastal waters and the sea under the Environment Protection Act (2002). It is responsible for research, surveys and studies needed for fostering the sustainable development and management of living marine resources, to provide support services to stakeholders representing the fishing sectors, to provide advice to policy makers on matters related to the management and development of marine resources and the conservation of the marine environment. It has a staff of about 70, of which, 28 are Master degree holders in Fisheries and related sciences. Activities are performed by five technical divisions following the implementation of the Ten Year Development Plan; *I Aquaculture; II Marine Parks and Reserves Service; III Marine Science; IV; Fisheries Management and Development; V Fisheries Research and Planning*. The Fisheries Protection Service is responsible for enforcement of the Fisheries and Marine Resources Act 1998 and subsidiary regulations. It has a staff complement of 200.

27. The Mauritius Oceanography Institute was officially established in January 2000. Its major responsibility is to monitor the marine environment around Mauritius and the Outer Islands and advise Government on policies that will maintain the health of these coastal waters and ecological processes.

28. The Ministry of Environment has specific authorisation for the coastal zone under the Environment Protection Act 2002 and is mandated to make regulations to control various types of pollution and other detrimental activities. Decisions for individual items are, however, largely taken independently by the agencies concerned.

Table 1: Organizations with institutional responsibilities relating to the management of marine resources within the coastal areas.

Agency	Responsibility of Agency relating to the management of marine resources within the coastal areas
<i>Department of Environment Ministry of Local Government, Rodrigues Ministry of Fisheries Prime Minister's Office Home Affairs Division Ministry of Housing and Lands Ministry of Land Transport, Shipping and Ports Mauritius Ports Authority Ministry of Tourism and Leisure Prime Minister's Office Ministry of Public Utilities/Water Resources Unit Central Water Authority Outer Island Development Cooperation Ministry of Agriculture, Food Technology and Natural Resources</i>	<i>EIA, environmental quality Shore development, beaches, resources in Rodrigues Fisheries and lagoon ecosystem Security, enforcement by National Coast Guard of the EEZ/Police Physical Planning Marine pollution from vessels Port functions, shipping Coastal hotels and recreation, management of public beaches through the Beach Authority Meteorological services Management of fresh water resources Water supply/quality/monitoring Management of Outer Islets Land up to the high water mark for reserves</i>

29. Under the Second National Environmental Action Plan (NEAP2) 1999, an Integrated Coastal Zone Management (ICZM) Division was established within the Ministry. It aims to identify research priorities and co-ordinate the activities of the various stakeholders affecting the coastal zone. The ICZM planning process is being implemented under the umbrella of the National Environment Strategy (2000-2010). The planning process is underway and will be followed by an implementation phase. An ICZM committee is being established to oversee activities in the coastal zone and will be responsible for developing integrated management plans for Mauritius and Rodrigues. The establishment of MPA's will form part of this process. This project will provide an ideal opportunity to test innovative conservation arrangements, involving a participatory co-management system that can be codified in management measures effected in the process of implementing the ICZM. This proposed project is timely and, since it will be implemented in advance, it will provide some initial momentum and be critical to informing the ICZM process and the focus of subsequent investments. Linkages between the MPA Board at the demonstration site and the ICZM committee will be ensured and actively maintained by their respective representation in both committees.

30. No Government body has overall responsibility for the coastal zone and its resources and a number of agencies have important roles with respect to the management of coastal resources (see table above). Efforts are generally uncoordinated and sectoral methods of working results in activities being carried out in isolation preventing a holistic approach being adopted to living marine resource management.

National Legislation

31. The key pieces of legislation governing management of the marine environment and living marine resources are: The Environment Protection Act, the Fisheries and Marine Resources Act and the Wildlife and National Parks Act. These provide a sound legal framework for the protection of key habitats, establishment and management of nature reserves and restoration of some of its unique ecosystems. The National Environmental Strategy 1999, Fisheries Development Plan 1997 and NBSAP actively promote the establishment of MPA's and sustainable management of marine resources. There are several gaps however, that are hampering effective discharge of the legislation. First, the coordination between the various Ministries in discharging their statutory responsibilities has been weak. Second, while the essential policy and legislation is in place, a lack of consultative mechanisms, technical know-how and tools, is obstructing management action on the ground.

Table 2: Legislation

Primary Legislation	Innovative features (Mauritian context)
The Fisheries and Marine Resources Act 1998;	In addition to providing for general enforcement and compliance measures, Part II provides for 'Management of Fisheries and Marine Resources' with sections 6, 7, 8 and 9 dealing with protection of the aquatic ecosystem against pollution, exploitation of mangroves, construction of any structures etc; Proclamation of marine protected areas in Mauritian waters including associated land area (new); setting up of an MPA Fund (new) and conservation measures by way of regulations.
Environment Protection Act (EPA), 2002	Creation of an ICZM Unit within the Ministry of Environment to coordinate the various actors. The Act makes provision for the creation of a Committee which in respect of the coastal and maritime zone, is tasked with developing management plans, monitoring coastal waters and generally conducting studies and making recommendations on matters such as beach erosion, and conservation in the islets and the outer islands. The Act vests powers in the Minister to make regulations for the prevention of pollution in the coastal and maritime zones. The EPA 2002 also provides for the establishment of a National Environment Commission under the chairmanship of the Prime Minister.
Wildlife and National Parks Act 1993, the National Parks and Reserve Regulations of 1996, and the Wildlife Regulations of 1998;	This is the principal legislation for the protection of the flora and fauna with the Wildlife Regulations of 1998 giving effect to the CITES Convention in Mauritian law. Part IV provides for the establishment and management of national parks and other reserves. Section 11 empowers the President, by Proclamation, to declare any land to be a national park or other reserve. The Minister may declare buffer zones for reserved land and approve and impose conditions on the use of buffer zones (section 12); approve management plans for reserved land (section 13); approve licenses and leases on reserved land (section 14). A National Parks and Conservation Fund has been established in accordance with the section 25 of the Act.
Forests and Reserve Acts, 1983;	This is the principal legislation governing the management of forests resources, trees including brushwood and the Nature Reserves (on land and also Islets)
Town and Country Planning Act, 1954	This Act is still in force. Indeed the Town and Country Planning Act 1990 was enacted but never come into force. The TCPA was reworked into a TCPA 1995 which also never into force. However on the TCPA 90 and 95 prescribe for the preparation of a National Physical Development Plan. The first NPDP dates back to 1994 and the second one which is nearing completion aims at achieving sustainable land management in an integrated way throughout the country. The TCPA 54 also provides for preparation of outline schemes and also detailed plan by the local authorities and Ministry of Housings and Lands.
Pas Geometriques Act, 1895	Provides for 81.21 m as area of reserved lands (as public domain) along the sea coast extending from high water mark towards the coast.
Continental Shelf Act, 1970	Section 5 gives power to the Minister responsible to prescribe necessary measures in the safety zone for the protection of living resources of the sea and

Primary Legislation	Innovative features (Mauritian context)
	the natural resources of the continental shelf from harmful effects
Maritime Zones Act, 1977	Section 15, provides for the Prime Minister to make regulations for the preservation and protection of the marine environment and the prevention and control of marine pollution.
Plants Act, 1976;	Provision for Quarantine measures
National Coast Guard Act, 1988	Mainly responsibilities for enforcement measures

Non Governmental Organizations (NGOs)

32. NGO's specifically focusing on the coastal zone in Mauritius include; Mauritius Marine Conservation Society (MMCS), the Mauritius Scuba Diving association (MSDA) and the Mauritius Underwater Group (MUG). They are actively involved with awareness raising activities, training local fishermen in using sustainable fishing techniques, planting buoys and building capacity among the public for reef surveys.

Existing marine protected area system

33. There are currently only two Marine Protected Areas (MPA's) in the Republic of Mauritius. Blue Bay (353 ha) and Balaclava (485 ha) were established in 1997, under the Wildlife and National Park Act 1994 and reclaimed in July 2000 under the Fisheries and Marine Resources Act 1998. They are managed by the Marine Parks Division of the Albion Fisheries Research Centre (AFRC) of the Ministry of Fisheries. A long-term monitoring programme is underway for these marine parks. Zoning maps have been drawn up by the Ministry of Fisheries and work has been initiated to establish buoys for the delimitation of the various zones of the parks and for the construction of required park infrastructure. However, management is being effected through instruments of command and control. These are costly to administer both in terms of financial resources and manpower for enforcement. Furthermore, compliance with established regulations has tended to be poor. In the long-term, the challenge remains of establishing a bio-geographically representative network of marine protected areas, to prove refugia for the conservation of habitats and species and to sustain ecological processes. The high costs associated with administration of the traditional conservation model implies that it is unlikely, given feasible national budget allocations to the conservation programme that this objective will be realised in the medium term. The challenge, in these circumstances, is to find more cost-effective solutions to managing marine protected areas, including through co-management arrangements involving local communities and private enterprises. Experiences from around the world demonstrating how the tourism sector and local communities can be embraced as conservation managers would be invaluable to informing this process.

34. The Ministry of Fisheries is also responsible for managing eleven fishing reserves (six in Mauritius and five in Rodrigues). A similar systemic situation to that found in the MPAs exists and enforcement of fishing regulations in these reserves is weak, as enforcement capacities remain stretched.

Coastal Development

35. The pressure for tourism and development on the coastal zone is intense and planning guidelines frequently do not harmonise the built environment with the natural environment. Although some alleviation of land based pressures has been achieved under the National Environment Action Plan I, pressures will remain intense. Development is controlled through the National Physical Development Plan (Town and Country Planning Act 1990 and 95) and Environmental Impact Assessment procedures.

Many coastal activities like the construction of hotels, dredging and other hard structures are now regulated. Major development applications relating to the coastal zones (as listed in part B of the first schedule of the EPA 2002) require an EIA. For the Ministry of Fisheries the EIA is normally reviewed by the Marine Parks Division in consultation with other Divisions of the Albion Fisheries Research Centre. However, capacity and knowledge required to review EIA needs to be enhanced to ensure that the review process is carried out properly and to ensure better protection and uses of the marine environment and resources. Capabilities to properly review the impacts qualified/ quantified in the EIA report and to ascertain that the most appropriate mitigating measures have been proposed is limited and this expertise may not be found under one roof.

Fisheries

36. The present fishery ground within the lagoon in Mauritius extends to an area of about 243km² and in Rodrigues 200 km². The Maximum Sustainable Yield (MSY) for the artisanal fishery in Mauritius has been estimated at 1700t and the annual catch for 1999 was 1225 tons. The species are mainly demersal and territorial and do not migrate outside the territorial water. The catch from the artisanal fishery is marketed as fresh fish while the catch from the banks fishery is sold frozen. The size of the fish has decreased over the years and the total catch is decreasing with increase in effort, increase in number of fishing days and use of advance fishing techniques. No quota system exists for this fishery but a few management measures are in place: *1. Closed season of five months wherein fishing with large nets and gill nets is prohibited; 2. The number of nets in the fishery is limited and licensed; 3. the length of each net is limited and its mesh size regulated; 4. Minimum size of capture of individual fish; 5. Minimum size for harvest of oysters and crustaceans in the berried state are prohibited.* Spear and harpoon fishing are forbidden and limited regulations exist for basket trapping and line fishing. Efforts are made to enforce these measures but existing command and control management models are costly to implement effectively and necessary administrative resources are insufficient, relative to the challenge at hand.

37. The Ten Year Fisheries Development Plan (1997) guides fishing activities in the Republic of Mauritius. This recognises the limited potential for further development of marine resource exploitation in the lagoon and, as part of the approved recommendations, greater emphasis is now placed on the sustainable resource use, management and protection of lagoon marine biodiversity. Recommendations relevant to this project include; *A. Management and development of marine environment: involve fishing community representative in a co-management consultation process where practicable and ensure dissemination of information; Establishment of a trust fund (already implemented in the Fisheries and Marines Resources Act, 1998). B. Marine/ coastal aquatic environment: promote the concept of ICZM, with shared access of databases for information; Adequately enforce EIA; Encourage the use of MPAs; Encourage the use of fishery protected areas, where appropriate, as part of a sustainable management strategy. C. Legislation: Regulations to be drafted for MPAs; Awareness programme directed at informing coastal/ fishermen communities on fisheries regulations and legal issues pertaining to fisheries. D. Training: Develop public awareness components of MPAs and review school curricula, including conservation and environmental issues.* This encouraging policy will facilitate implementation of project activities based on sustainable fishing.

38. Fishermen can apply for a Registration Card which has to be produced and stamped by the officers of the Ministry of Fisheries when they disembark fish on the official declared Fish Landing Stations. This registered status enables them to claim a Bad Weather Allowance when they cannot fish.

39. Many local fishermen associations exist at the community and regional level. The Association

des Pecheurs Professionnels de l'Ile Maurice (APPIM), Association des Pecheurs Professionnels de l'Ile Rodrigues, Organisation des Pecheurs Professionnels Rodriguais and other individuals and organisations representing the fishermen community exist at the national level. These associations will facilitate activities focusing upon raising awareness and working with fishermen.

40. Fishing and other marine based activities are critical to the livelihoods of local communities throughout Mauritius. These communities have a wealth of knowledge about the marine environment and its changes over time that should be drawn upon in developing long-term management procedures.

Tourism

41. Economically the coastal zone is the most valuable segment of the Mauritian territory. Tourist facilities of a high standard, secondary homes, ports, fisheries infrastructure and public beaches are located in this zone. The tourism industry contributes 12% of the GDP (16 billion Rupees annually) through 650,000 visitors every year. Between 1990 and 2000 there was a 10% increase in the number of tourist arrivals. Motor boat activities for water skiing, glass bottom boat viewing and fishing can cause problems in pristine areas where anchors are dropped damaging corals, while pollution is a problem in several areas. The private sector leases a considerable area of coastal land in Mauritius, with many hotels established up to the beach front. Planning in the tourism sector does not always take into account impacts upon the marine environment, development is intense and inappropriate constructions such as jetties can be detrimental to natural ecosystem processes causing long-term damage to the marine environment. Without enforced regulations and penalties hotels may be reluctant to adopt new practices aimed at improving construction practices, wastewater treatment and managing boats and tourists. Given the projected growth in tourism and the direct impacts of tourism activities on the marine environment the private sector must be a critical partner in any efforts to conserve marine resources, particularly in MPAs

42. The Ministry of Tourism is responsible for all tourism related activities. Future developments in the Tourism sector are being guided by the Tourism Development Plan (2002) which is strongly aligned to marine conservation efforts. This plan recognises that development possibilities will be dependent on meeting challenges in the field of environmental mitigation and social inclusion and that tourism expansion will necessitate a more controlled physical planning framework with appropriate tourism zones and tourism area plans. The recommendations made with the Tourism Development Plan aim to make Mauritius an accredited green destination by the year 2020, with four marine parks designated and managed by NGO's, hotels acquiring environmental accreditation, marine regulations in place, designation of one of its marine sites as a World Heritage Site, codes of conduct or regulations developed and introduced, self-regulation by selected sub-sectors encouraged, mooring buoys are placed at all dive sites, local Authorities trained and Mauritian Blue Flag Programme introduced, partnerships between hotels and communities to improve management of environment and use of natural resources developed and promoted.

43. The *Association des Hoteliers et Restaurateurs de l'Ile Maurice* (AHRIM) brings together all hotel and restaurateurs in Mauritius in a collective private sector group. The Mauritius Tourism Promotion Authority, which falls under the responsibility of the Ministry of Tourism, acts as a regulatory body. There is some degree of awareness of the need for environmentally sensitive tourism, given the dependence upon the marine environment, but the opportunity to capitalize upon a market based upon environmental tourism has not yet been captured to its full extent. An Environment Charter exists for the tourism industry providing an environmental code of conduct for the economic operators in this sector.

However there is a need to set up a monitoring mechanism to enforce compliance.

44. The Tourism sector complies to a number of regulative measures and charges. A 'Green Tax' is imposed by the Ministry of Environment under the Environment Protection Act 2002. This corresponds to 0.75% of the monthly turn over to the following enterprises; hotels, boarding houses with more than 4 bedrooms, enterprises engaged in stone crushing or in the manufacture or processing of aggregates, concrete blocks, pre-cast units, coral sand, rock and or basalt. The fee is credited into the National Environment Fund which is used for environment and protection enhancement purposes. Permits and licenses such as EIA procedures impose conditions of use of marine resources and also the maintenance of its good quality through appropriate mitigative measures. Provisions have also been made in the Fisheries and Marine Resources Act (1998) for Permits and Licences Fees to be established in the case of MPA's. These will refer to fees, rent and other charges arising from the authorised use of the marine parks and reserves (MPA's) and will be credited to a Marine Protected Area Fund.

45. The National Biodiversity Strategy Action Plan recognises that sustainable tourism development in Mauritius can contribute to the achievement of biodiversity conservation objectives and, since tourists are primarily attracted to Mauritius because of the coastal environment, it is in the interests of tour and hotel operators to ensure its sensitive use. Opportunities exist to develop an ecotourism market based upon the unique marine environment and to establish ecotourism ventures in sensitive areas. Experiences from elsewhere would be invaluable to informing this process. The involvement of the tourism sector will be critical in order to effectively operationalize new conservation instruments. Firstly, industry support will be important if simple market-based mechanisms in the form of tourism user fees are to be instituted. Secondly tour and hotel operators can provide a medium through which to raise awareness about the marine environment. This can be done by providing interpretation materials to recreational divers and snorkellers, and sensitising tourists to the conservation implications of their decision to purchase wildlife curios. Thirdly, industry support will be needed if ecologically destructive practices such as mooring and anchoring dive boats on or near coral reefs, or use of speed boats in sensitive areas are to be effectively regulated. Finally the tourism sector in Mauritius is currently inexperienced with regards to the ways and means of minimizing its impacts upon the marine environment. Assistance is necessary to support the tourism industry to take the appropriate actions to ensure sustainable use of the marine environment.

Public awareness

46. Awareness of the conservation values of the marine environment is generally low though out Mauritius and amongst visiting tourists. This is largely a result of a lack of information. No interpretation boards exist in the coastal area or in the MPA's and other sources of information on the coastal environment are limited. Awareness raising activities are generally limited to the efforts of NGO's.

47. The University of Mauritius offers an MSc. elective module in Integrated Coastal Zone Management and a two-year Diploma course in Fisheries. However at the primary and secondary school levels the marine environment is not specifically targeted in the curriculum.

Baseline at the demonstration site

Institutional Arrangements and management of the marine environment

48. Rodrigues has recently become autonomous with the establishment of the Rodrigues Regional

Assembly (RRA) and the Executive Council of Commissioners. The Chief Commissioner is responsible for the Fishery and Environment Sector and is very active and committed towards protecting the marine environment. Various Department heads undertake the daily administrative management of the various sectors under Mauritian law, and are responsible to the Island Chief Executive and the Chief Commissioner. Under the new autonomy provided for under the Rodrigues Regional Assembly Act 2001, RRA is mandated to appropriate legislation in consultation with the state law office for the protection and management of marine resources amongst others. Under the decentralised situation District Councils are responsible for detailed planning and development approvals at village and community levels.

49. Units responsible for managing marine resources in Rodrigues include; Fisheries Research and Training Unit (FRTU), Rodrigues Environment Unit, Rodrigues Water Unit, Rodrigues Forestry Unit and the Fisheries Protection Service. They work closely with the local fishing communities and NGO's on the island.

50. Management of coastal and marine resources is not as fragmented on Rodrigues, as it is in Mauritius, however coordination between various agencies remains weak, leading to sub-optimal Outputs.

National Biodiversity Strategy Action Plan activities for the marine environment

51. NBSAP activities have been identified specifically for the Rodrigues marine environment. Specific objectives include *preserving, protecting and restoring the coral reefs and lagoon habitats, improving sensitisation of public on coastal and marine issues and research into sustainable exploitation of other aquatic species thereby reducing over exploitation of particular resources*. Although activities have not yet begun there is some degree of recognition of the problems affecting the marine environment in Rodrigues in some sectors of society. The willingness to make the necessary changes exists but capacity and resources are lacking.

NGO's/CBO's operating in Rodrigues

52. There a number of NGO's and CBO's concerned with the Rodrigues coastal and marine environment. These organisations work closely with the RRA and its various units contributing towards awareness raising and sensitisation in the field of environment. CBO's include fishermen communities, ecologists, octopus fisherwomen and others. After evaluation, relevant lessons and experiences may be used as baseline information for this project.

Marine Protected Areas

53. There are no MPA's on Rodrigues but five fishing reserves have been established, including an area, the Port-Sud-Est pass, which forms part of the project site. Fishing by seine nets is prohibited in these areas but other traditional forms of fishing are not regulated. Low levels of enforcement, caused by lack of personnel and equipment, limits compliance to the existing regulations. Innovative management techniques involving stakeholders and developing community managed 'no take' zones as fish refugia are not known. The failure to consult and involve communities and other stakeholder in management of the reserve contributes to low compliance levels.

Coastal Development

54. There are a number of developments planned that will impact the demonstration site. These include the construction of a desalination plant, a water reservoir and algae aquaculture project at Mourouk. EIA procedures will be carried out and these initiatives could have environmental benefits if designed and carried out appropriately. In addition two hotel projects are planned which will significantly expand the number of tourists visiting the area.

Fisheries

55. Total fishing grounds (lagoon and offshore) exploited in Rodrigues amount to 1,688km². Artisanal fishery in the lagoon is the main type of fishery and is mostly used for local consumption, providing the majority of the fresh fish supply on the local market in Rodrigues. However part of the octopus and fish catches are either dried or frozen for sale on the Mauritian market. The most common fishing methods are the fishing net, basket traps, use of spears and harpoons for catching of octopus and line fishing. About 2000 registered fishermen fish mainly in the lagoon area and there are thought to be many unregistered fishermen. Fishing and octopus collection is the main source of income for many of the families.

Tourism in Rodrigues

56. *Association Rodriguaise des Tour Operateurs (ARTO)*: ARTO is the body that represents tour operators in Rodrigues. Rodrigues tourism markets itself under the 'ecotourism' label and this holds great potential. In comparison to Mauritius tourism numbers are currently restricted due to limited flights and hotel rooms (251 rooms and 492 bed spaces in 2000). The tourism sector is however already growing in Rodrigues and an increase in room capacity has been accompanied by the emergence of a number of tourist based activities including tour operators, restaurants, big game fishing, car rentals and handicraft activities. These activities support about 1000 jobs. Significant expansion in the tourism sector is planned, given the potential of the island and serious limitations for other economic alternatives. There is currently only one hotel, with 45 rooms, operating in Mourouk but plans exist for two more. Tourists are particularly attracted to the area as the largest beach on the island is found at Graviers.

Land Based activities

57. The demonstration site area includes approximately 20km² of land. A number of conservation land based activities, outlined below, are proposed in this area and the project will work closely with the various agencies involved to maximise the environmental benefits. These projects will be important in reducing the threats identified in the threat analysis earlier. Proper management of the land adjacent to the marine environment is important to prevent erosion, which is considered one of the main threats to the lagoon.

- (i) Land rehabilitation on state lands/anti erosion project: The European Development Fund, local communities and the forestry department will plant native species to rehabilitate vegetation on state lands. This will involve the creation of village woodlands, stream protection, windbreaks and establishing village nurseries. This project is envisaged to have important benefits in reducing the current threats from erosion and is expected to significantly improve the lagoon water quality.
- (ii) Ecological rehabilitation of Ile Hermitage, Ile au Chat/Pierrot and Ile Plate by the Rodrigues Forestry Unit: this project aims to remove exotic vegetation and control introduced exotics. In collaboration with this project the Rodrigues Underwater Group will carry out activities to

- study and encourage the nesting of turtles on these islands.
- (iii) A proposal for a botanic garden, education centre and a valley restoration project to be implemented by the Rodrigues Forestry Unit exists for the Mourouk valley, which is one of the most important areas for biodiversity in Rodrigues. This project may present opportunities for employment of members from the local community.

58. Without external intervention this baseline situation both at the National level and in Mourouk will continue. In Rodrigues the predicted expansion of the tourism industry could have seriously detrimental affects unless steps are made to minimise impacts. Rodrigues may become as heavily developed as some areas of Mauritius if an integrated approach is not taken to managing the marine and coastal environment. Whilst efforts are underway through the ICZM process, the Republic of Mauritius will benefit considerably from exposure to new approaches and concepts in marine protected area management that have emerged elsewhere. In particular the provision of a model for co-management would be instrumental to informing this process. Currently the lack of involvement of key stakeholders, such as the community and tourism sector, is one of the major limitations to sustainable marine resource management. The provision of the initial energy and resources required to actively change the baseline situation is critical in order to progress towards a sustainable national system of marine protected areas.

Part Ib Strategy

As mentioned in Part Ia of this project document, a number of relevant national strategies approved by the Government of Mauritius and the Rodrigues Regional Assembly are in place thereby helping to achieve a sustainable use of the marine biodiversity assets of the Republic of Mauritius.

The proposed project strategy has been developed in line with these national priorities as well as the United Nations Development Assistance Framework (UNDAF) for Mauritius for the period 2001-2003 which focuses on environment management as one of the goals of assistance. Objective A.3 states that “The UN system will assist in the conservation and protection of biodiversity”. Under this Objective three out of five activities will be addressed by this project, viz: The UNDP will assist in the establishment, extension, consolidation and effective management of marine and terrestrial protected areas, the UNDP will support community involvement in biodiversity conservation and/or sustainable use of natural resources, the UNDP will support education and awareness raising in biodiversity conservation.

V: EXPECTED PROJECT OUTPUTS (THE ALTERNATIVE)

59. The project will contribute to the reduction of threats to marine biodiversity in the Republic of Mauritius, including Rodrigues through a participatory stakeholder driven process. The project will work to provide an innovative model of co-management, engendering broad stakeholder participation among the public, private sector and local communities, that takes an integrated approach to managing the marine environment at a demonstration site in Rodrigues. This will provide long term livelihood benefits to the resident fishing community, by helping to assure the sustainability of fishing activities. This would be achieved by demonstrating the efficacy of community managed fish no take zones in sustaining fishing productivity. Opportunities will be created for communities to diversify their livelihoods by becoming involved in eco-tourism based activities. At the same time the project will provide an opportunity for environmentally sensitive development of a growing tourism industry and develop the capacity of the tourism sector to work with local communities in ecotourism based activities at the demonstration site. Greater stakeholder participation will enable the range of conservation managers to be expanded relieving pressure on the over-stretched marine agencies. The project will simultaneously set the foundation for replication of similar models elsewhere throughout the Republic of Mauritius by focusing on specific policy and institutional support activities. These activities have been selected and targeted in order to address the most critical gaps (including financial sustainability of MPA's, mechanisms for consultation and comanagement, multi-stakeholder methods of working, involvement of the tourism sector and awareness raising), as outlined in the base line situation, and have the maximum opportunities for impact.

60. In piloting an effective MPA the comanagement approach has been identified by stakeholders as the most appropriate form of management as traditional and command and control methods in Mauritius are no longer producing the desired results. It has been recognised that unless all stakeholders can be brought together to manage the marine environment conservation efforts will not be realised.

Comanagement:-

A partnership between government, communities and the private sector, with the development of collaborative institutional arrangements and designation of specific management responsibilities to different groups.

61. The creation of an appropriate enabling environment, facilitating replication, will contribute to the progression towards a sustainable national level system of marine protected areas, thereby ensuring long-term sustainable marine and coastal resource conservation and safeguarding national and global benefits.

62. Two broad objectives have been identified during project planning.

1. *Develop an enabling policy and institutional framework for sustainably co-managed MPA's throughout the Republic of Mauritius, including Rodrigues;*
2. *Identify MPA co-management best practices and test at demonstration site;*

63. Under these two broad objectives ten Outputs have been identified below. These are summarised in the Results Framework overleaf and subsequently discussed in more detail along with activities that will be undertaken in order to achieve each respective Output.

Part II. Results Framework

Intended Outcome 1:

Enabling policy and institutional framework for sustainably co-managed Marine Protected Areas throughout the Republic of Mauritius, including Rodrigues developed

Outcome indicators:

1. Evidence of a change in policies/legislation regarding financial arrangements for MPA's by end of year 4
2. Independent monitoring confirms that, by year 4, tools developed are being utilized outside the project site
3. Evidence of a multi-institutional arrangement to improve integrated management of marine resources at the national level by end of year 4
4. Staff trained by end of year 4 in integrated management systems

Applicable Strategic Area of Support (from SRF):

SAS: G3-SGN2-SASN2: Improved National Capacity to negotiate and implement global environment commitments

Partnership Strategy:

Execution by the Ministry of Fisheries and implementation by the Albion Fisheries Research Centre of the Ministry of Fisheries in collaboration with all national stakeholders through seminars and consultative meetings (For more details kindly refer to Management Arrangements Section of the Project Document)

Project title and number: Partnerships for Marine Protected Areas in Mauritius and Rodrigues- MAR/03/XXX

Intended Outputs	Output targets for (years)	Indicative Activities
Output 1.1 Policy and legislation for the management and sustainability of marine resources strengthened	<ol style="list-style-type: none"> 1. Task force established to assist Government to adopt the proposal to adapt policy and legislation to allow MPA's to keep income they have generated for site management by end of year 2 2. Change in policy and legislation enabling MPA's to keep revenue generated on site by end of year 4. 	Activity 1: Strengthen policy and legislation related to the generation of finances for Marine Protected Areas

Intended Outputs	Output targets for (years)	Indicative Activities
Output 1.2: Tools and codes of practice are developed to facilitate the practical application of existing policies and legislation	<ol style="list-style-type: none"> 1. Utilisation of co-management tool in at least 2 MPA's outside the project by year 4 2. At least 3 incidences of use of public consultation code of conduct, outside the demonstration site by year 4 	<p>Activity 1: Develop a comanagement tool to facilitate the replication of co-managed Marine Protected Areas throughout Mauritius and Rodrigues</p> <p>Activity 2: Develop a code of conduct to improve public consultation methods in the sustainable management of marine resources</p>
Output 1.3: Mechanisms for strengthening institutional arrangements for the management and sustainability of marine resources identified	<ol style="list-style-type: none"> 1. Task force established to take forward recommendations from the project study with regards to a multi-institutional arrangement to improve integrated management of marine resources by end of year 2. 2. Existence of new multi-institutional arrangement by end of year 3. 3. At least 60 stakeholders receive documentation of IMPAM board experience by year 4. 4. Mourouk IMPAM board members visit at least 2 other sites to advise on establishing similar boards by end of year 4 	<p>Activity 1: Facilitate a mechanism for a multi-institutional arrangement to improve integrated management of marine resources</p> <p>Activity 2: Document experiences from the Integrated Marine Protected Area Management Board at the demonstration site to facilitate replication in future MPA's</p>
Output 1.4: Tourism outreach and reform	<ol style="list-style-type: none"> 1. Working group established and meeting regularly to guide, advise, and make recommendations with regards to the implementation of a national tourism sector set of marine management principles progress the projects objectives by end of year 2. 2. Task force established to take forward the recommendations from the working group for a multi-institutional arrangement with regards to improvement in the policy, legislative as well as institutional measures by end of year 2. 3. Independent monitoring confirms that at least 20 hotels are actively implementing the Tourism sector set of marine management principles throughout Republic of Mauritius by end of year 4 	<p>Activity 1: Establish a working group with the Ministry of Tourism, AHRIM, ARTO and the Mauritius Tourism Promotion Authority to facilitate working with the Tourism sector in marine conservation issues</p> <p>Activity 2: Awareness raising of marine conservation within the Tourism Sector.</p> <p>Activity 3: With the working group identify a long term mechanism for on-going consultation and participation with the Tourism sector.</p> <p>Activity 4: Develop a tourism sector of marine management principles.</p>
Output 1.5:	1. Association des Pecheurs Professionnels	Activity 1: Establish a working group

Intended Outputs	Output targets for (years)	Indicative Activities
Fisheries outreach and reform	<p>de l’Ile Maurice, Association des Pecheurs Professionnels de l’Ile Rodrigues, Organisation des Pecheurs Professionnels Rodriguais and other individuals and organisations representing the fishermen community agree principles of MPA’s and co-management based on experiences at the demonstration site by end of year 3</p> <p>2. Representatives of the fisheries sector participate in at least 4 meetings annually with project staff to ensure regular dialogue and progress of projects objectives.</p>	<p>with the Association des Pecheurs Professionnels de l’Ile Maurice, Association des Pecheurs Professionnels de l’Ile Rodrigues, Organisation des Pecheurs Professionnels Rodriguais and other individuals and organisations representing the fishermen community to agree principles of MPA’s and co-management based on experiences at the project site.</p> <p>Activity 2: Develop a long term awareness raising strategy to promote awareness of MPA’s and benefits on fishery levels..</p> <p>Activity 3: With the working group identify a long term mechanism for on-going consultation and participation with the Fisheries sector.</p> <p>Activity 4: Develop a tourism sector of marine management principles.</p>
Output 1.6: Increase in marine conservation awareness within key sectors of the society	<p>1. 15 number of personnel involved in marine resource management in Mauritius and Rodrigues trained by end of year 3</p> <p>2. 7 number of Ministry of Housing and local authority personnel trained by end of year 4</p> <p>3. Communication network to inform journalists of marine issues is established by year 3</p> <p>4. Annual award in place for best environmental journalism is in place by year 2</p>	<p>1.Capacity building of personnel involved in marine resource management throughout Mauritius and Rodrigues</p> <p>2. Raising awareness within land planning agencies</p> <p>3. Training journalists in marine conservation issues</p>

<p>Intended Outcome 2: Innovative co-management arrangements for Marine Protected Areas (MPA) developed and adapted at a representative demonstration site</p>
<p>Outcome indicators:</p> <ol style="list-style-type: none"> 1. Independent monitoring confirms active involvement of all stakeholders; community members, tour operators, local government in MPA management at demonstration by year 2 2. Independent monitoring confirms that co-management plan is fully operational; zonation plan in place and working, user fees generated, visitors code of conduct in use by year 3 3. Biennial biological surveys confirm that reef condition (measured by fish diversity, coral diversity and relative damage from human and natural causes) at demonstration MPA improves beyond established baseline by year 4.
<p>Applicable Strategic Area of Support (from SRF): SAS: G3-SGN2-SASN2: Improved National Capacity to negotiate and implement global environment commitments</p>
<p>Partnership Strategy: Overall national execution responsibilities for the project lies with the Ministry of Fisheries. The implementation will be made by the Executive Council of the Rodrigues Regional Assembly in collaboration with all national stakeholders through seminars and consultative meetings (For more details kindly refer to Management Arrangements Section of the Project Document)</p>
<p>Project title and number: Partnerships for Marine Protected Areas in Mauritius and Rodrigues- MAR/03/XXX</p>

<p>Output 2.1: Integrated Marine Protected Area board and infrastructure established</p>	<p>1. Existence of IMPAM board, guidelines of operation, evidence of meetings held by end of year 2 2.Evidence of office and personnel in place by end of year 2</p>	<p>Activity 1- Establish and operationalize a management structure and establish infrastructure</p>
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<p>Output 2.2: Integrated Marine Protected Area plan developed</p>	<ol style="list-style-type: none"> 1. Participatory management plan developed with full stakeholder endorsement by end of year 2 2. Participatory M&E strategy developed with defined indicators by end of year 2 	<p>Activity 1: Data collection necessary for monitoring and evaluation and adaptive management</p> <p>Activity 2 Identify stakeholders and formulate a stakeholder participation plan and strategy to ensure the views of all stakeholders are represented.</p> <p>Activity 3: Develop a zonation plan to allow different zones for different marine based activities (using the map developed in 2.1) and strategy for implementation</p> <p>Activity 4: Develop activities to ensure the sustainable use of marine resources in collaboration with AFRC/FRTU</p> <p>Activity 5. Identify regulation mechanisms for ensuring enforcement and compliance in the management of marine resources</p> <p>Activity 6: Identify financial instruments to generate revenue to sustain conservation operations</p> <p>Activity 7: Assess carrying capacity and develop a tourism strategy for the MPA</p> <p>Activity 8: Establish links with other agencies for land based activities to reduce pressure the marine environment and ensure that local communities are integrated into activities to provide them with alternative sources of income</p> <p>Activity 9: Develop a participatory monitoring and evaluation strategy to monitor the projects progress in achievement of the objectives and against the baseline situation.</p>
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		Activity 10: Finalize the integrated MPA management plan
Output 2.3: Capacity developed and Integrated MPA plan implemented	<ol style="list-style-type: none"> 1. Independent monitoring confirms that MPA zones are being adhered to and infractions are being reported and penalized by year 4. 2. Independent monitoring confirms that resource users are in full compliance with the user fee systems and are engaged in fee adjustment negotiations by year 3. 3. Independent monitoring confirms Tourism plan is fully operational; (visitor centre built, visitors code of conduct, walking trails established) by year 4. 4. At least 30 community members are involved with land based activities by end of year 3 5. Risk assessment study report and response plan developed by end of year 3 6. 6 monthly livelihood, resource use and attitudinal monitoring exercises completed. 	<p>Activity 1: Develop a training programme specific to staff involved in the running of the MPA e.g. park manager and associated staff, visitor centre staff, and others associated with tourism activities etc.</p> <p>Activity 2: Develop capacity specific to local communities to enhance their ability to participate in the integrated MPA.</p> <p>Activity 3: Develop capacity needs specific to economic operators to maximize their participation in the integrated MPA</p> <p>Activity 4: Develop capacity of key department heads, personnel from local authorities and other public servants involved in the Marine Protected Area process who would benefit from training</p> <p>Activity 5: Trial and adapt community managed no take zones and sensitive resource harvesting techniques</p> <p>Activity 6: Operationalize enforcement regulations and adapt if necessary</p> <p>Activity 7: Implement tariff collection system and trust fund</p> <p>Activity 8: Implement the tourism plan</p> <p>Activity 9: Carry out land based activities to reduce pressure on the marine environment</p> <p>Activity 10: Undertake a risk assessment study and response plan</p>

		<p>(contingency) for the MPA</p> <p>Activity 11: Implement participatory M&E strategy</p> <p>Activity 12: Adaptively manage the demonstration site based on results of research and monitoring.</p> <p>Activity 13: Evaluate the MPA approach and disseminate lessons learnt</p>
<p>Output 2.4: Marine conservation awareness increased</p>	<ol style="list-style-type: none"> 1. 10 number of tour operators involved in awareness raising activities 2. Attitudinal survey indicates favourable change in attitude towards the marine environment amongst the community and tour operators by year 3 3. Ratio of applications for leases and EIA's made in the project areas and reviewed by IMPAM board improves annually 4. At least 300 children reached by environmental education activities 	<p>Activity 1: Design awareness raising programmes for current resource users</p> <p>Activity 2: Develop an environmental education strategy for tourists visiting the Marine Protected Area</p> <p>Activity 3: Devise appropriate coordination mechanisms at decision level government/ organizations/ developers to ensure proposed development considers marine biodiversity guidelines</p> <p>Activity 4: Implement coastal environment education activities for primary schools in Rodrigues</p>

VI; EXPECTED OUTPUTS

64. The Outputs of this project will result in the achievement of the two specific objectives and address the barriers pertaining to sustainable management of marine resources. They will include the following;

Objective 1: Develop an enabling policy and institutional framework for sustainably co-managed Marine Protected Areas throughout the Republic of Mauritius, including Rodrigues

65. This component will develop systemic and institutional capacity, with a particular focus upon long-term sustainability, to provide an enabling environment to facilitate the replication of best co-management practices in other Marine Protected Areas. Some supportive policies, such as the ICZM, Ten Year Fisheries Development Plan, are already in place which will greatly facilitate efforts to build an enabling environment and activities in this objective have been selected by stakeholders to target specific gaps in the policy and institutional environment and where Outputs are thought to be fundamental to achieving co-management of MPA's at a national level.

Output 1.1: Policy and legislation for the management and sustainability of marine resources strengthened

Output 1.2: Tools and codes of practice are developed to facilitate the practical application of existing policies and legislation

Output 1.3: Mechanisms for strengthening institutional arrangements for the management and sustainability of marine resources identified and promoted at pilot sites.

Output 1.4: National Responsible Tourism Marine Management Principles developed and operationalised.

Output 1.5: Awareness increased in fishery sector of the fishery productivity benefits derived from sound MPA management

Output 1.6: Increase in marine conservation awareness within key sectors of the society

Objective 2: Develop and adapt innovative co-management arrangements for Marine Protected Areas (MPA) at a representative demonstration site.

66. This component will establish a model of co-management for a selected site in Rodrigues demonstrating best practice principles in the management of the marine environment. The MPA will be managed by an Integrated Marine Protected Area Management (IMPAM) Board consisting of key stakeholders from government, the private sector and the local communities. An integrated management approach will be taken to the marine environment and activities such as participatory zonation planning, designing appropriate user and penalty fees will be agreed upon and implemented by the stakeholders in a participatory manner. This objective focuses upon the different phases of activities necessary to put the management plan into practice; planning phase, capacity building phase and operational phase. Awareness raising is seen as a critical intervention, ensuring the other Outputs can be achieved. Progress will be monitored and evaluated and management adapted appropriately to improve impacts.

Output 2.1: Integrated Marine Protected Area Management board and infrastructure established

Output 2.2: Integrated Marine Protected Area Management plan developed

Output 2.3: Capacity developed and Integrated Marine Protected Area plan implemented

Output 2.4: Marine conservation awareness increased

VII: PROPOSED ACTIVITIES

Activities for Output 1.1: Policy and legislation for the management and sustainability of marine resources strengthened

67. This component will form a team to work directly between the Rodrigues Regional Assembly, the Ministry of Fisheries and Central Government to take forward recommendations from project studies that require inter-ministerial agreement, planning and policy reform.

Activity 1: Strengthen policy and legislation related to the generation of finances for Marine Protected Areas(MPA's)

Tasks

- Review existing policies and legislation to identify current strengths and weaknesses.
- Based on the review findings and lessons from the demonstration site, extensive consultation with relevant stakeholders particularly the tourism sector, develop proposals for new policies and legislation reform to better ensure the financial sustainability of MPA's.
- This will be followed up by the team setting up a Task Force with the relevant central Government Ministries to assist the Government in adopting the proposals.

Activities for Output 1.2: Tools and codes of practice are developed to facilitate the practical application of existing policies and legislation

68. It is recognized that some policies and legislation in Mauritius are supportive of marine protected areas but are often not enforced for various reasons such as; lack of capacity, lack of knowledge and no existing working example. This Output aims to use experiences from the demonstration site to develop codes of conduct and tool kits to help overcome these barriers. These tools and codes of conduct will be important in informing the ICZM process and stakeholders from the steering committee will be critical in transferring lessons learnt.

Activity 1: Develop a co-management tool to facilitate the replication of co-managed MPA's throughout Mauritius and Rodrigues

Tasks

- Review experiences from elsewhere and the demonstration site
- Develop a user friendly tool best practice recommendations for developing and implementing co-managed protected marine areas. This will not be limited to the partnerships trialled at the demonstration site [community, private sector and local government] but could include community-government, private sector-government, community-private sector.

- Ensure the distribution of the tool to key stakeholders, in particular those involved in the ICZM

Activity 2: Improve public consultation methods in the sustainable management of marine resources

Tasks

- From the experiences at the demonstration site develop a code of conduct for mandatory public consultation in the procedures for setting up and managing MPA's and other resource decisions for the coastal environment.
- Engage stakeholders from the project steering committee to facilitate the use of these principles and code of conduct in future practice, in particular for the ICZM process.

Activities for Output 1.3: Mechanisms for strengthening institutional arrangements for the management and sustainability of marine resources identified

69. Functions are disbursed between many agencies with regards to marine resource management, leading to uncoordinated efforts and sometimes conflicting policies. Although the mandates of the different agencies cannot be changed, this Output aims to identify a mechanism of bringing together the different organizations to make decisions in a collective manner. It will work with the ICZM process to avoid duplication and maintain links.

Activity 1: Facilitate multi-institutional arrangements to improve integrated management of marine resources

Tasks:

- Review the different mandates of the various agencies, at different levels, responsible for marine issues.
- Undertake stakeholder consultation to identify the best way of strengthening the institutional arrangements, drawing on the experiences from the project site.
- From the stakeholder discussions identify and propose a mechanism to bring the different organizations mandated with marine issues together to improve integrated management of marine resources.
- Establish a task force with key stakeholders, including ICZM personnel, to take forward recommendations from the project study to central Government ministries.
- Facilitate the formation of this mechanism

Activity 2: Document and disseminate experiences from the Integrated Marine Protected Area Management Board at the demonstration site to facilitate replication in future MPA's

Tasks:

- The demonstration will have tested a model drawing together a number of stakeholders at a site level. Experiences will be documented outlining the strengths, weakness and challenges of the approach that was taken. This will be a valuable tool for replication of similar IMPAM boards at other sites in the future.
- Disseminate document to key decision makers particularly those involved in the ICZM process.
- Identify opportunities for members of the IMPAM board from the project site to contribute their knowledge in the establishment of boards elsewhere based on their experiences at the demonstration site.

Activities for Output 1.4: Develop and operationalise National Responsible Tourism Marine Management Principles.

Activity 1: Establish a working group with the Ministry of Tourism, AHRIM, ARTO and the Mauritius Tourism Promotion Authority to facilitate working with the Tourism sector in marine conservation issues.

Activity 2: Awareness raising of marine conservation within the Tourism Sector.

Using the established institutions, and with guidance from the working group established above, carry out a widespread sector consultation process with the tourism sector to understand their impression of marine conservation, their commercial drivers, cost burdens etc. Such a process will also serve as an awareness raising opportunity to improve the sectors perception of MPA's and the economic benefits to them from MPA management, to help secure their buy-in and reform.

Activity 3: With the working group identify a long term mechanism for on-going consultation and participation with the Tourism sector.

Tasks will be identified with the working group and will be important in achieving long term buy in from the tourism sector to contribute to marine conservation. This will work closely with the working group established in Activity 1 and the working group established for drawing up the Tourism Development Plan.

Activity 4: Develop a tourism sector set of marine management principles

Tasks

- Review existing environment charter to identify strengths and weaknesses
- Based on the review findings and experiences from the demonstration site, and in close coordination with the Ministry of Tourism, AHRIM and ARTO, develop set of marine management principles, and associated monitoring mechanism for the tourism sector.
- With the working group develop incentive schemes and penalties to be imposed on operators that do not adhere to the management principles.
Guidance and advice will be provided by the working group established for drawing up the Tourism Development Plan.
- Task force established to monitor implementation of the Tourism Principles, including development of policy, legislative and institutional measures needed to assure effectiveness.

Activities for Output 1.5: Awareness increased in fishery sector of the fishery productivity benefits derived from sound MPA management

Activity 1: Establish a working group with the Association des Pecheurs Professionnels de l'Ile Maurice, Association des Pecheurs Professionnels de l'Ile Rodrigues, Organisation des Pecheurs Professionnels Rodriguais and other individuals and organisations representing the fishermen community to agree principles of MPA's and co-management based on experiences at the demonstration site.

Activity 2: Develop a long term awareness raising strategy to promote awareness of MPA's and benefits on fishery levels.

Using the established institutions, and with guidance from the working group established above, carry out a widespread sector consultation process with the fisheries sector to understand their impression of marine conservation and MPA's. Such a process will also serve as an awareness raising opportunity to

improve the sectors perception of MPA's and the benefits to them from MPA management. Lessons learnt from the demonstration site and elsewhere should be appropriately used to demonstrate the value of no-take and multiple use MPAs to facilitate fishery compliance with new MPA's.

Activity 3: With the working group identify a long term mechanism for on-going consultation and participation with the Fisheries sector.

Tasks will be identified with the working group and will be important in achieving long term buy in from the fisheries sector to contribute to marine conservation.

Activities for Output 1.6: Increase in marine conservation awareness within key sectors of the society

70. It is recognized that a number of agencies are carrying out marine conservation awareness activities and targeting the whole of the society is a considerable undertaking. For this reason the project aims to build upon the baseline by targeting specific gaps where the most benefits can be derived.

Activity 1: Capacity building of personnel involved in marine resource management throughout Mauritius and Rodrigues

Tasks

- Identify key personnel in Mauritius and Rodrigues (e.g. staff of marine park divisions) who could take advantage of training opportunities to facilitate replication and sustainability of MPA's .
- Design and implement training according to their needs. This will include on site training at the demonstration site and training with personnel from Rodrigues to ensure experiences from the process of establishing the MPA are shared to facilitate replication. This will be linked to specifically to Output 2.3, Activity 4.
- Capacity building will include ensuring the training of staff of the marine parks division of the AFRC who are responsible for reviewing EIA reports for proposals having an impact on the marine environment.
- Measure the progress of participants post training to measure impact

Activity 2: Raising awareness within land planning agencies

Tasks

- Work with the Ministry of Housing and local authorities to raise awareness of the importance of the marine environment related to the adjoining land environment which falls under their jurisdiction regarding land planning strategies
- Identify and implement training to improve the capacity and knowledge of the importance of the marine environment

Activity 3: Training journalists in marine conservation issues

Tasks

- Organize a workshop for environmental journalists on their role in marine biodiversity conservation
- Identify a strategy for keeping journalists updated in marine issues
- Establish an annual award for the best example of environmental journalism which contributes to the conservation of marine biodiversity through informing the public

Activities for Output 2.1: Integrated Marine Protected Area Management (IMPAM) board and infrastructure established

Activity 1. Establish and operationalize a management structure and establish infrastructure

Tasks:

- Establish and equip Integrated Marine Protected Area Management (IMPAM) office
- Recruit personnel (Project Manager, Administrative Assistant, Financial Officer, Driver)
- Establish the Integrated Marine Protected Area Management Board - representative of all stakeholders (community members, private sector, government, RRA, NGO's etc and with a gender balance) with agreed rules for decision making powers, roles and responsibilities
- Establish a fora and mechanisms whereby stakeholders may express their concerns and opinions

This board will include representatives of different ministries and statutory bodies, including ICZM personnel, Rodrigues Regional Assembly, the private sector and civil society. The board will be consulted within the EIA process, for example to give it views on all future developments occurring within the project area or having an influence on the MPA. The board will improve coordination of coastal zone activities, including related terrestrial activities, and help achieve integrated marine resource management at the project site.

Activities for Output 2.2: Integrated Marine Protected Area plan developed [This will be done by the IMPAM board and will be facilitated by the Project manager. Additional activities to those identified below may be agreed upon by the stakeholders]. Part of the project area has already been declared a Fishing Reserve, these boundaries will be extended and declared a Marine Protected Area by the Fisheries Minister.

Activity 1: Data collection necessary for monitoring and evaluation and adaptive management

Tasks

- Review published literature, datasets and other existing knowledge on the locality to be covered by the IMPAM plan.
- Carry out a coastal survey (incl. traditional knowledge) and mapping exercise and archive information on GIS.

Activity 2 Identify stakeholders and formulate a stakeholder participation plan and strategy to ensure the views of all stakeholders are well represented.

Activity 3: Develop a zonation plan to allow different zones for different marine based activities (using the map developed in 2.1) and strategy for implementation

Tasks

- In collaboration with all stakeholders identify specific zones for the different marine based activities - fishing, diving, water sports etc. This will include community-managed 'no take' zones developed in activity 4.
- Prepare zonation proposals and discuss in open stakeholder forum
- Select and implement the most effective zonation plan with agreed limits on numbers of participants and behaviour.
- Design a conflict resolution mechanism

Activity 4: Develop activities to ensure the sustainable use of marine resources

In collaboration with AFRC/FRTU;

- Provide and communicate information to communities on the benefits of community-managed 'no take' zones, as part of the zonation strategy. This will relate to enhancing productivity by allowing spawning biomass to recover in refugia, enhancing recruitment and spill-over in neighbouring areas and demonstrating the benefits exceed the short term costs.
- Assist communities to assess resource use, fisheries and resource condition (integrated into activity 1). Any short term opportunity costs that need to be addressed will be identified in this activity.
- Assist communities to identify and carry out baseline surveys in proposed 'no take' zones
- Establish a framework for managing 'no take' zones.
- Investigate alternative ways of anchoring boats, catching octopus and deploying baskets that are less damaging to the reef

Activity 5: Identify regulation mechanisms for ensuring enforcement and compliance in the management of marine resources

Tasks

- Identify equipment and personnel required to ensure enforcement and compliance of the zonation plan
- Identify and develop appropriate regulations and means of enforcement for sustainably managing marine resources; this will include a penalty system to impose fines in non compliance of the zonation plan (identifying the 'right' fee) as well as to the tourism sector set of marine management principles as referred to under the Activity 7-Output 2.2.

Activity 6: Identify financial instruments to generate revenue to sustain conservation operations

Tasks

- Working closely with relevant stakeholders, establish a user fee system based on best practice review of similar tariff systems from elsewhere. Extensive consultation with the tourism industry will be necessary to ensure buy in to this new user fee system.
- Assess willingness to pay and optimum user fees. This will take into account cost recovery for management of the MPA.
- Explore the setting up of trust fund to receive all income arising from the MPA and to be used by the MPA management on an annual basis to cover operational costs.
- Negotiate with RRA with regard to revenue sharing to ensure all of the funds raised are channelled for use in the MPA
- Agree charter for managing the trust and identify appropriate operational mechanisms
- Development and implementation of incentives schemes for the adherence to the tourism sector set of marine management principles at the demonstration site (as referred under Activity 7- Output 2.2)

Activity 7: Assess carrying capacity and develop a tourism plan for the MPA

Working in close collaboration with AHRIM and hotel/tourism operators, communities and other stakeholders in the demonstration site

Tasks

- Assess the nature, growth and environmental impacts of tourists to the demonstration site and determine tourist carrying capacity
- Carryout a cost-benefit study to determine the optimum number of tourists taking into account ecological sustainability, management costs and revenue earning potential
- Develop and implement a tourism sector set of marine management principles and its monitoring within the project area
- Propose recommendations of the study to the RRA so that future limits to the numbers of visitors can be secured.
- Develop a visitors code of conduct
- Design visitors centre
- Identify sites for underwater and walking trails
- Make provisions for waste
- Plan maintenance schedules

Activity 8: Establish links with other agencies for land based activities to reduce pressure the marine environment and ensure that local communities are integrated into activities to provide them with alternative sources of income

This will include;

- Anti erosion project to advise on land use practices and reduce the sediment load reaching the lagoon
- Ecological rehabilitation of Ile Hermitage, Ile au Chat/ Pierrot and Ile Plate

Activity 9: Develop a detailed participatory M&E strategy to monitor the projects progress in achievement of the objectives and against the baseline situation.

Tasks

- Define appropriate indicators to monitor changes in marine biodiversity
- Identify opportunities for stakeholder involvement in the M&E strategy and identify specific training needs to be developed in Output 2.3
- Develop a work plan, with appropriate time scales, for implementing the M&E strategy

Activity10: Finalize the Integrated Marine Protected Area Management plan

Tasks

- Circulate the draft and undertake a wide consultation process based on the stakeholder participation and technical advice from the TAG
- Finalize reflecting advice received from all stakeholders.
- Distribute a user friendly version of the plan widely.

Activities for Output 2.3: Capacity Developed and Integrated Marine Protected Area Plan implemented

71. A critical component in operationalizing the IMPA plan will be developing capacities at the various stakeholder levels. Innovative methods of capacity development such as study tours, exchange of know how and personnel to share best practice etc. will be used and the most eligible participants from the various stakeholders will be identified. NGO's and other organizations will be identified to access training. It will be ensured that stakeholders access training and capacity building opportunities such that they are able to implement and sustain conservation activities in the long-term.

Activity 1: Develop a training programme specific to staff involved in the running of the MPA e.g. park manager and associated staff, visitor centre staff, and others associated with tourism activities e.g guides etc.

There will be a focus upon

- Enforcing regulations and compliance (e.g rangers are aware of procedures and impose fines consistently)
- Managing financial instruments (collection of user fees)
- Training in use of GIS and monitoring and evaluation process
- Raising awareness of the importance of the marine environment
- Working with communities
- Training for involvement in M&E activities

Activity 2: Develop capacity specific to local communities to enhance their ability to participate in the integrated MPA (linked to Output 2.2, activity 4)

- Identify participants
- Design capacity development activities
- Implement activities

There will be a particular focus upon

- Enhancing their ability to participate in the IMPAM board,
- Involvement in zonation; raising awareness of the benefits of set asides, design of set asides, implementation, monitoring fish stocks and adaptive management
- Awareness raising of regulatory systems
- Training for involvement in ecotourism activities
- Training for involvement in M&E activities

Progress of participants post training will be monitored to identify the impacts it has had

Activity 3: Develop capacity specific to economic operators to maximize their participation and involvement in the integrated MPA

- Identify participants
- Design capacity development activities
- Implement activities

Activities for training may include

- Working with local communities in ecotourism activities
- Ensuring tourism activities are sensitive to marine biodiversity conservation objectives
- Benefits and ways of using marine biodiversity as a draw card for tourism activities
- Abilities in the role of raising awareness of the marine environment with visitors
- Training for involvement in M&E activities

Progress of participants post training will be monitored to identify the impacts it has had

Activity 4: Identify capacity needs of key department heads, personnel from local authorities and other public servants involved in the MPA process who would benefit from training and implement activities to develop their capacity

Tasks

- Identify most eligible potential participants

- Carry out a needs assessment to determine main capacity needs and how most impact can be derived
- Design and implement training

Progress of participants post training will be monitored to identify the impacts it has had

Activity 5: Trial and adapt community managed no take zones and sensitive resource harvesting techniques

Tasks

- Develop a community-based monitoring system to measure progress
- Provide assistance in adaptive management

Activity 6: Operationalize enforcement regulations and adapt if necessary

Tasks

- Establish and train personnel and ensure provision of logistic support for effective enforcement
- Secure necessary equipment
- Install and maintain perimeter mooring buoys
- Apply penalty system, monitor pilot phase and redesign if necessary

Activity 7: Implement tariff collection system and trust fund

Tasks

- Establish and pilot user fee collection system, monitor a pilot phase and redesign as necessary
- Implement the trust fund system (charter and operational mechanism), monitor a pilot phase and redesign as necessary

Activity 8: Implement the tourism plan

Tasks

- Build and equip visitors centre
- Test visitors code of conduct and adapt accordingly
- Establish trails (walking and underwater)

Activity 9: Carry out land based activities to reduce pressure on the marine environment

Tasks

- Work with the anti-erosion project to carry out land-use practices to reduce the sediment load reaching the lagoon
- Undertake ecological rehabilitation of Ile Hermitage, Ile au Chat/ Pierrot and Ile Plate, such as the removal of exotic vegetation and control of introduced exotics; encourage the nesting of turtles

Activity 10: Undertake a risk assessment study and response plan (contingency) for the MPA

Activity 11: Implement participatory M&E strategy

Tasks

- Monitor and Evaluate as specified in the strategy
- Based on results from Output 2.2, activity 4 (developed by the community) assess changes in socio-economic conditions, resource use and attitudes of local communities

- Communicate results to all stakeholders

Activity 12: Adaptively manage the demonstration site based on results of research and monitoring.

Activity 13: Undertake an evaluation of the MPA approach and disseminate lessons learnt

- Evaluate the IMPAM approach and effectiveness
- Document the management and monitoring process and lessons learnt to allow replication to other sites.
- Distribute to stakeholders, the steering committee and other identified parties important for the replication process

Activities for Output 2.4: Marine conservation awareness increased

Activity 1: Design awareness raising programmes for the current resource users

- Work with community groups and NGO's to develop and disseminate culturally appropriate outreach materials about the MPA and their role
- Work with Government, decision makers, economic operators, local communities to increase awareness of and participation in the MPA (this may involve seminars, outreach materials, workshops etc)

Activity 2: Develop an environmental education strategy for tourists visiting the Marine Protected Area
Tasks

- Consult extensively with tour operators to identify their role in the awareness raising strategy e.g. briefing to visitors and divers
- Design and develop appropriate interpretative materials for the MPA i.e. maps, information boards, brochures, information stands in the visitors centre, interpretation for trails etc. (linked to Output 2.3, activity 8)

Activity 3 Devise appropriate coordination mechanisms at the decision level between government organizations and developers to ensure proposed development considers marine biodiversity guidelines
Tasks

- Ensure local authorities and land planners participate in the IMPAM board
- Establish procedures for the review and approval of the application for a lease of a portion of state land for the construction of an undertaking within the project area by the IMPAM board
- Establish procedures for the review of the application for an EIA license for the construction of an undertaking within the project area by the IMPAM board

Activity 4: Implement coastal environment education activities for primary schools in Rodrigues
Tasks

- Identify mechanisms of involving primary children themselves in the development of the EE activities
- Develop user friendly education materials and websites to promote awareness of the marine environment.
- Investigate the viability of integrating the activities into the existing education syllabus

VIII: SUSTAINABILITY ANALYSIS

72. This project is designed to ensure that conservation of the marine environment in the Republic of Mauritius, including Rodrigues, continues long after the project termination.

Capacity development

73. One of the main barriers to marine conservation in Mauritius is a lack of capacity at all levels: systemic (enabling environment is not conducive to replication of best practice management), institutional (institutions managing the marine environment have insufficient expertise and resources) and individual (limited trained individuals able to implement innovative management techniques). Capacity development is a major focus of the project and aims to help ensure the sustainability of the demonstration site and, through national interventions, to contribute to marine conservation throughout Mauritius.

74. At the site level this project places significant emphasis on training among primary stakeholders. Staff will be trained to enable them to manage the MPA, to enforce regulations, manage financial instruments, raise awareness, work with local communities and monitor, evaluate and adaptively manage resources. Emphasis will be placed on developing the capacities of local communities to enable them to actively participate on the IMPAM board, to establish, monitor and manage no take fishing zones and to participate in ecotourism and M&E activities. Awareness raising of the benefits of fish set asides, sustainable resource harvesting techniques, regulatory systems and the marine environment will be a critical component of the capacity development. The tourism sector will be trained to facilitate their engagement in the management of marine resources, including raising awareness among tourists and monitoring and evaluation and to work in partnerships with local communities and government. Awareness raising among the tour and hotel operators of ways of making tourist activities sensitive to marine biodiversity conservation objectives and ways of using marine biodiversity as a draw card for tourism activities will be addressed. The IMPAM board and collaborative management process of the MPA will continue after the life span of this project.

75. Based on previous experiences with fishery side asides elsewhere (Roberts 1997), it is expected that increased fish stocks, leading to improved economic benefits to the local communities, will increase motivation to comply with regulations developed in the MPA. This linkage will be emphasized through the conservation awareness component of the project.

76. The development of a tourism sector set of marine management principles will ensure the commitment of the tourism sector and begin the steps to increase the tourism sector involvement in national marine biodiversity management in the future.

77. At the national level capacity will be developed amongst staff responsible for marine resources management and tools will be made available to facilitate the practical application of existing policies and legislation. The demonstration site will provide a unique model that can be replicated elsewhere in the Republic of Mauritius, including Rodrigues. It aims to illustrate that, through collaborative management, the long-term sustainability and wise use of resources can be achieved. High-level support from the ICZM unit, in the Ministry of the Environment, and other influential partners will ensure that lessons learnt are fed into the ICZM and other national processes contributing to the development of a national system of marine protected areas. The facilitation of a multi-institutional arrangement for marine resource management will improve integrated ways of working in the future.

78. Throughout the project activities will be designed and implemented to ensure the MPA will

continue to function without external interventions once project funding ceases.

Financial sustainability

79. Commitment and financial support from Central Government and the Rodrigues Regional Assembly has been secured and will provide financing for the recurrent costs of the MPA. This will be complemented by the development of long-term financing mechanisms. Assessing the feasibility and logistics of these mechanisms will be a critical component of the management plan. This will focus on two tools. Firstly user fees will be developed taking into account willingness to pay and cost recovery for management. These will be trialled and adapted appropriately. Secondly a trust fund will be created to receive all income arising from the MPA and to channel this for use in management activities. A charter will be agreed for managing the trust and transparent operational procedures designed. The trust fund will be trialled and adapted.

80. Experiences from the demonstration site will directly contribute to Output 1.1, activity 1 which focuses upon strengthening policy and legislation related to the generation of finances for MPA's. Currently revenue received is channelled back to central treasury providing little incentive to generate money on site. The dependence on a regular allocation from central government weakens the sustainability of the MPA's. A review of existing policies and legislation will identify gaps and weakness and proposals for reform, to better ensure the financial sustainability of MPA's, will be developed. These will be taken forward to Central Government and a task force will be established to assist the Government to adopt the proposals. The strengthening of policies and legislation will be critical for future MPA's, enabling them to generate and retain their own finances, and the demonstration will be invaluable to informing this process.

81. Given the projected increase in tourism in Rodrigues it is expected that the MPA will generate sufficient funds through tourist activities to sustain its management costs and, ensuring that such fees are retained on site, will help secure the financial sustainability of the demonstration site in the event that financial support from external sources fails to continue in the long-term.

Involvement of multistakeholders

82. This intervention is based upon a partnership approach both at the national and site level. This is detailed in Section XV and exemplified in the project activities. The involvement of stakeholders in the development and implementation of all project activities, continued dialogue and commitment will help to ensure the sustainability of the project. Commitment from both AFRC and RRA has already been demonstrated throughout project preparation and will contribute to the success of the project.

83. Finally the project will collaborate with a number of other agencies in land based and environmental awareness raising activities. These are likely to continue working in the area long after the project terminates.

IX: RISK ASSESSMENT

Risks to the project and activities to counter risks include the following;

Identified Risk	Mitigation approach
<i>No public participation culture:</i>	Through awareness raising, capacity development and empowerment the project aims to overcome public cynicism and demonstrate a workable model of co-management that

	facilitates meaningful participation of the public. Rapport has already been established with the communities and the excellent relationship between communities and the Rodrigues Underwater Group will continue to facilitate public involvement in the project.
<i>Collaborative management mechanisms are new</i>	The project will develop capacity with all members of the IMPAM board to facilitate their participation and provide continued support to assist the board to meet its objectives.
<i>Unrealistic expectations</i>	The IMPAM process may generate unrealistic expectations amongst resource users of potential and realized benefits; the project will maintain good relationship with all stakeholders and through an environmental awareness process will ensure realistic achievements of the project are communicated.
<i>Natural disasters</i>	Bleaching of coral by future increases in water temperature or freak occurrences, such as <i>El Nino</i> , is a possibility. As coral that is already stressed is thought to be more susceptible to bleaching, the reduction in anthropogenic pressures on reefs should reduce risks in this regard.

X: REPLICABILITY

84. The project is designed to facilitate the replication of co-managed marine protected areas, such as the one developed and piloted at Mourouk, throughout the Republic of Mauritius including Rodrigues. The project site is sufficiently representative to similar areas in the Republic of Mauritius, where biodiversity levels are high and tourism growth is expected, and lessons learnt will be very valuable. Objective 1 specifically focuses upon developing an enabling environment for marine biodiversity conservation which will assist replication at a national level. Tools developed will be actively disseminated to key stakeholders, particularly those involved in the ICZM process. The Project Steering Committee and Task Force will involve high level decision makers who will be instrumental in taking the lessons from Mourouk and ensuring replication elsewhere. RRA will be able to use their influence on central government to encourage the uptake of recommendations from the project. High level political support is given to this project and the Government of Mauritius is keen to replicate the lessons learnt from this project to other sites. A number of national policies emphasis the development of a network of MPA's and will support the project, namely the; National Environmental Strategy 1999, Fisheries Development Plan 1997, Tourism Development Plan 2002 and the NBSAP. Lessons learnt from this project will inform these policies and help secure national funding for the replication of best practice.

85. Specific elements of the project supporting replication are as follows:

- The task force established to ensure recommendations on strengthening of policy to ensure financial sustainability of MPA's are taken up by the government
- Developing a co-management tool with recommendations of best practice in developing and implementing co-managed MPA's. This will largely be based upon community-private sector-government experiences from the Mourouk demonstration but will also include advice for community-private sector, community-government, government private sector partnerships based on experiences elsewhere.
- Development of a code of conduct for mandatory public consultation in procedures for setting up and managing MPA's.
- Development of a tourism sector set of marine management principles by a collaborative group with associated penalties on operators not adhering to the principles
- Development of a long term mechanism for on-going consultation and participation with the Tourism sector to achieve their long term buy in and commitment
- Development of a long term mechanism for on-going consultation and participation with the

- Fisheries sector to achieve their long term buy in and commitment
- Documenting experiences from the IMPAM board, ensuring its targeted dissemination and encouraging members of the IMPAM board to facilitate the establishment of other similar boards as required.
- Capacity development of personnel involved in marine resource management throughout Mauritius and Rodrigues will be specifically targeted in Output 1.4, activity 4. Training will include ‘on-site’ training at Mourouk and training with personnel from the demonstration site to facilitate the exchange of experiences.
- The various awareness raising components targeted at the public, journalists, tourists, private sector and decision makers will increase knowledge and value for the marine environment and it is hoped experiences from Mourouk will encourage a public participation culture for involvement in co-management in future MPA’s.

86. Demonstration that the various tools are working will be critical for replication and will facilitate this process. If it can be illustrated that tourists, hoteliers and tour operators are willing to pay user fees at the project site replication of similar systems elsewhere can easily be achieved.

XI: STAKEHOLDER INVOLVEMENT

87. The proposed intervention was identified by the Albion Fisheries Research Centre (AFRC) of the Ministry of Fisheries and the Marine Parks and Reserves Service Division of AFRC was involved throughout the project preparation. Project formulation was designed to be as participatory and consultative as possible.

88. Two project formulation missions established broad communication links and information exchange avenues with stakeholders at all levels. During the first mission 45 individuals from 14 organizations including Government, NGOs and the private sector were consulted and during the second mission 56 individuals from 18 organizations were consulted - these included 7 organizations in Rodrigues.

89. A National Marine Biodiversity Workshop entitled *The Problems/Threats Faced by Marine Biodiversity, the Immediate and Root Causes, and Possible Interventions*, was organized at the Albion Fisheries Research Centre and some 53 participants representing 12 Ministries and Departments, 6 NGOs, 3 from the private sector and one from the donor community, attended. The interventions proposed in this project have arisen to a great extent from the conclusions reached at this workshop.

90. The project formulation mission produced an Inception Report which was widely circulated, to indicate the direction and scope of its task. This was followed by a Progress Report mid-way through the mission. The Progress Report updated stakeholders on the evolution of the project and reported on the site visits/surveys conducted by the mission to sites proposed by the Ministry of Fisheries as possible candidates for pilot projects. The mission also released a Preliminary Draft of the Project Brief with an invitation for comments.

91. The mission established an excellent rapport with the newly established Rodrigues Regional Assembly. Likewise, good communication was established with the Mourouk community. This latter dialogue is continuing through the efforts of the Rodrigues Underwater Group who are relaying progress reports on the project to the fishing community and other local stakeholders, obtaining their views and reactions, and transmitting reports back to the project formulation team.

92. The participatory approach adopted during the formulation stages of the project will be established as a fundamental principle of the project during implementation

XII: FINANCIAL ARRANGEMENTS

Incremental cost assessment

93. Without intervention to address systemic, institutional and individual capacity constraints, marine protected area management in the Republic of Mauritius is unlikely to be sustainable in the long-term. Currently only two marine protected areas are in place and capacity constraints both in terms of financial resources and manpower, within agencies charged with the responsibility for managing these areas, means management is not sufficiently effective. The failure to involve local stakeholders, such as communities and the tourism sector, in the management of these areas contributes to the low levels of compliance with established legislation. Although efforts are being made to address the situation, international input is critical to catalyse national efforts and overcome present constraints to marine conservation and ensure its sustainability in the long-term. The ICZM process is in place but its impacts will be considerably improved if new concepts and experiences from elsewhere can be integrated into the programme. The proposed intervention will be important to test innovative techniques in marine conservation approaches thereby informing the ICZM process.

94. The baseline scenario has a current yearly cost of US\$12,898,000 consisting of costs incurred by the Ministry of Fisheries in their daily operations, the ICZM programme, Rodrigues Environment Unit and the running costs of the existing marine protected area system (Blue Bay and BalACLava) including Ile Aux Aigrettes and Round Island (Mauritian Wildlife Foundation).

95. Under the baseline situation it could take considerable time for other marine protected areas to become designated and, once created, to be sustainably managed. The obstacles preventing the inclusion of critical stakeholders in the establishment and management of marine protected areas will fail to ensure their long-term viability. Finally without additional assistance, an enabling environment, necessary for the development of a national system of marine protected areas, will not be built.

Demonstration site

96. At Mourouk under the baseline situation the lack of effective enforcement of the fishing regulations and current levels of fishing and octopus harvesting are likely to lead to rapid depletion in resources. The exclusion of local communities from marine management plans presents challenges in the enforcement of regulations, particularly given the limited resources of enforcement agencies. In this situation alternative management models are necessary that include communities, and other stakeholders, in the design and implementation of management plans. This will effectively expand the range of conservation managers, facilitating improved stakeholder compliance with regulations, agreed in advance, and empower local communities to manage their own resources.

97. The projected rapid increase in tourism in Mourouk could be detrimental to the marine environment if land development does not internalise the dis-benefits. Additionally, within the existing baseline it is unlikely that the tourism sector will have the skills or knowledge to fully capitalise on the opportunities provided by eco-tourism. Sustainable and sensitive use of the marine environment will contribute to conservation efforts and will have direct benefits for the tourism sector. The project

provides an opportune vehicle for demonstrating how the tourism sector can be directly involved in marine conservation efforts thereby contributing to the development of an ecotourism niche market in Rodrigues. It is critical that awareness is raised among the different sectors of society and an innovative model is developed to embrace the tourism sector as an important partner in the management of Mourouk.

99. A full incremental cost matrix is appended (see Annex III).

Part III Management Arrangements

XIV: PROJECT IMPLEMENTATION ARRANGEMENTS

101. The management arrangements which have been proposed for this project reflect the provisions of the Second Country Cooperation Framework (CCF) for Mauritius (2001-2003) which has been extended up to December 2004 and which stipulates that NEX should be the preferred modality for the project implementation.

102. These management arrangements also take into consideration the necessity to create strong linkages between the two objectives of the project, namely the policy and legislation issues which will be addressed at the national level and the demonstration site which will be located in Rodrigues.

103. This project will be nationally executed in line with UNDP National Execution (NEX) procedures:

- UNDP is the GEF Implementing Agency as nominated by the National Global Environment Facility Operational Focal Point
- The Government Coordinating Agency is the Ministry of Economic Development, Financial Services & Corporate Affairs
- The Executive Council of the Rodrigues Regional Assembly will be the executing agency for the activities under Objective 2 of the project in collaboration with the relevant stakeholders. The Executive Council of the Rodrigues Regional Assembly will nominate a National Project Coordinator. He/she will be a government official who will manage together with the Project Manager the overall activities of the project in Rodrigues under Objective 2 of the project while working in collaboration with a Desk Officer nominated by the Ministry of Fisheries for the activities under Objective 1. The National Project Coordinator will be delegated the authority to request on a quarterly basis advance of funds to UNDP and to manage the said funds placed in the project bank account opened for this purpose in Rodrigues. The request of funds will integrate the components submitted by the Desk Officer for the activities under Objective 1. The project bank account will be co-managed by the Project Manager and be subject to financial reports to be submitted by the NPC to UNDP CO on a quarterly basis and it will be also subjected to an annual NEX audit. The terms of reference for the National Project Coordinator are enclosed as annex to this document.
- The Ministry of Fisheries will be the executing agency for the activities under Objective 1 of the project. This ministry will nominate one of its officers as Desk Officer responsible for the management and implementation of the activities under Objective 1 of the project document together with the Project Manager while working in collaboration with the National Project Coordinator nominated by the Executive Council of the Rodrigues Regional Assembly. The terms of reference for the Desk Officer are enclosed as annex to this document.
- A Project Management Unit (PMU) will be set up to manage the implementation of the project activities and the project account opened for this purpose. An office will be provided by the Executive Council of the Rodrigues Regional Assembly in Rodrigues to that effect. The PMU will have a full time

project manager, a Administrative Assistant, a finance officer and a driver funded by the project.. An International Technical Adviser (TA) will provide support and technical advice through a maximum of six missions and for the entire duration of the project. He/ she will equally provide regular electronic support to the PMU and other relevant key stakeholders.

- The project personnel and other project staff attached under the project involved in scuba diving and other activities at sea will be covered by an insurance provided under the project budget.

104. The role of the core PMU staff will be as follows:

- The Project Manager will continually inform the RRA, the Ministry of Fisheries, and the UNDP of project progress. The Project Manager will be responsible for the development of terms of reference and he/she will participate in the hiring of technical services and advisors for the project. He/she will also be responsible for work plans and supervision of field works. The Project Manager will undertake the preparation and presentation of technical and financial reports of the resources, in accordance with UNDP procedures supported by quarterly work plans of activities. The Project Manager will ensure that the request for advance of funds made by the National Project Coordinator covers a specific activity scheduled for the forthcoming quarter for both Mauritius and Rodrigues. The consolidated work plan will reflect the activities to be carried out in Mauritius and Rodrigues. It shall be prepared by the Project Manager based on inputs provided by the National Project Coordinator and the Desk Officer. The funds for the activities in Mauritius will be made available and paid from the Project Bank Account based in Rodrigues.
- The Administrative Assistant will, *inter alia*, provide assistance in meeting reporting responsibilities and act as Liaison Officer to ensure that the coordination and the links between Mauritius and Rodrigues are maintained throughout the implementation of the project
- The other staff of the PMU will provide support to the Project Manager for the proper implementation of the project activities

105. The PMU will receive guidance and support from the following committees and groups:

- A Project Steering Committee will be established. This PSC will be chaired by the Chief Commissioner of the Rodrigues Regional Assembly and vice-chaired by the Ministry of Fisheries. It will provide guidance and oversee the overall performance of the project, the implementation of activities and the achievement of the project outcomes and results . The responsibility for the day-to-day management of the project will remain within the Project Management Unit. The terms of reference of the PSC and proposed membership are given at Annexure 1.1
- Technical advice will be provided to the PMU from a Technical Advisory Group (TAG). This will consist of relevant of agencies, institutions and individuals which will be selected by the executing agency on an ad-hoc basis. These agencies may include among others: United Nations Development Programme as well as various governmental and non-governmental organisations, academic and research institutions as well as representatives of the private sector and any other identified agencies/individuals. The TAG will not hold regular meetings but relevant members will be called together in sub groups to advise on specific issues as necessary. The terms of reference of the TAG and membership are given at Annexure 1.1
- An Integrated MPA Management Board will be created in the context of the activities of the project carried out at the demonstration site in Rodrigues. The exact composition, role, duties and responsibilities of the board will be defined by the Executive Council of the RRA in its capacity as executing agency at

its first meeting following consultation with the relevant stakeholders.

- During the last year of the project, an exit strategy and plan will be developed by the Project Manager. It is envisaged that the project will have developed the capacities and associated enabling environment for the demonstration site to continue without external interventions once funding ceases.

XV: THE PUBLIC INVOLVEMENT PLAN

106. Involvement of all stakeholders is critical in achievement of the project's objectives both at the site and country wide level. Involvement of the players at the demonstration site is paramount to its success and lessons learnt from this process of collaboration between government, private sector and local communities will be important in informing the ICZM process.

107. Members of the steering committee will include high level stakeholders from Mauritius as well as Rodrigues. This will be critical for the success of elements of the project relating to strengthening policy and legislation (Objective 1) which will require the commitment of relevant central Government Ministries. The project has the strong support of the RRA who will be able to use their influence on central government to ensure practices developed in the project can be replicated at a wider scale throughout Rodrigues and Mauritius.

108. Each component will be highly participatory to ensure full stakeholder buy-in and multi-stakeholder partnerships for cost-effective implementation of the activities and their sustainability.

Objective 1: Develop an enabling policy and institutional framework for sustainably co-managed Marine Protected Areas throughout the Republic of Mauritius, including Rodrigues.

109. This will require extensive participation of a range of government ministries to ensure project recommendations are fed into policy decision making and become law. The active involvement of members from the steering committee will be critical to supporting this process. The use of codes of conducts and other tools developed in this part of the project will similarly necessitate commitment from stakeholders such as the Ministry of Fisheries and National Parks and Conservation Service to improve public consultation methods and implement co-management models and the Ministry of Tourism, AHRIM and ARTO to develop a tourism sector set of marine management principles. The latter will be particularly important in paving the way for increasing the involvement of the private sector in marine resource management in the future.

110. The replication of the co-management tool and public consultation code of conduct will be instrumental in increasing the public involvement in future MPA establishment and management.

111. The strengthening of institutional arrangements for marine management, both nationally and at site levels, will require collaboration between a number of different stakeholders. The awareness raising aspect of this objective focuses at a broad level and will involve, in particular, personnel responsible for marine resource management, land planning agencies and journalists.

Objective 2: Develop and adapt innovative co-management arrangements for Marine Protected Areas (MPA) at a representative demonstration site.

112. This objective will focus heavily upon local stakeholders at the demonstration site. It will take a new approach to managing a protected area that is, as yet, untested in the Republic of Mauritius. The ultimate aim of the project is to instil a feeling of collective ownership of the lagoon resources and this will be ensured through meaningful participation in decision-making processes.

113. This will be achieved by establishing an Integrated MPA Management board that brings together stakeholders, specifically the Rodrigues Regional Assembly, fishing communities from Port Sud-Est, Mourouk, Graviers and vicinity and others living within the designated catchments and the private sector, and enables them to make a collective decision on the management of the proposed marine protected area, formulation and implementation of an Integrated MPA Management Plan. This will include developing a zoning system for marine based activities, agreeing regulation mechanisms to ensure enforcement and compliance and financial instruments to generate revenue to sustain conservation operations.

114. Working partnerships will be developed with fishing communities to improve their livelihoods whilst reducing pressure on the lagoon. This will be achieved by developing community managed no take fish zones, seeking alternative ways of harvesting marine resources that are not damaging to the coral and identifying alternative income generating activities such as land based opportunities (anti -erosion project, ecological rehabilitation). Capacity building specifically tailored to the needs of the local communities will be carried out in Output 2.3, activity 2. Building awareness among the community with regards to the marine environment and developing culturally appropriate outreach material will be an important component of Output 2.4.

115. The private sector, mainly tour and hotel operators, will be actively involved in developing the MPA as an ecotourism destination, assessing tourism carrying capacity and ensuring the impact of tourists is controlled. Mechanisms of developing partnerships between the private sector and communities, such as employment opportunities, will also be sought. Training opportunities specific to tour/hotel operator needs will be specifically identified in Output 2.3, activity 3 and may include: ensuring tourism activities are sensitive to marine biodiversity conservation issues, benefits and ways of using marine biodiversity as a draw card for tourism activities and developing abilities in the role of awareness raising with visitors.

116. A number of land based activities are already being undertaken in the demonstration areas and stakeholders will be drawn into the project to ensure a comprehensive approach is taken to management of the environment.

117. The role of capacity development is critical to the success of the demonstration site and all stakeholders will be targeted and their specific needs identified. This will ensure the co-management plan is operationalized in the most effective and sustainable manner.

118. Awareness raising at the demonstration site will ensure the active participation of stakeholders. It will focus at different levels targeting; current resident resource users, tourists and land planning agencies. After adequate evaluation, relevant experiences and lessons learnt from NGO's and CBO's focusing upon the marine and coastal area may be valuable to informing this component.

119. A fora and mechanisms will be established during the project whereby stakeholders may express their concerns and opinions to the MPA management process.

120. The monitoring and evaluation strategy for the demonstration site will assess changes in socio-economic conditions, resources use and attitudes of local communities. Upon these results activities may be adapted to ensure the continued support of the local communities.

Ongoing consultation after the project

121. The project aims to build the capacity of high level personnel involved in marine resource management and they will be integral to the strategy at the demonstration site enabling them to follow and learn from the process.

122. One focus of the project will be to facilitate dialogue between the various agencies to allow for a comprehensive approach to managing the marine environment. This will enable continued involvement and consultation between the various stakeholders in marine resource management in the future.

123. At the demonstration site ongoing consultations between the various stakeholders, through the IMPAM board, will be critical to ensuring the sustainability of the MPA.

Information dissemination

124. This intervention aims to ensure that lessons learnt from the demonstration site are used to inform the ICZM process and facilitate the replication of similar co-managed MPA's throughout the Republic of Mauritius. Critical components of Objective 1 will ensure practices, success and challenges are documented and distributed to the relevant stakeholders to assist this process. This will include experiences of the IMPAM board, co-management practices, code of conduct for public consultation and management principles for the tourism sector.

125. Lessons learnt from the MPA process as a whole will be defined through the Monitoring and Evaluation strategy and disseminated to key stakeholders.

126. Progress at the demonstration site will be disseminated to relevant stakeholders as one of the activities of objective 2 (Output 2.3, activity 11).

XVI: MONITORING AND EVALUATION

Monitoring and Evaluation

127. The project will be monitored and evaluated in close collaboration with the Rodrigues Regional Assembly/Ministry of Fisheries according to standard UNDP monitoring and evaluation procedures. Reporting procedures for Nationally Executed (NEX) projects will apply as follows:

Meetings of the Steering Committee

128. There will be a meeting of the Project Steering Committee (or sub technical committee as required) once every six months or as appropriate to discuss general concerns regarding the project and provide guidance and support to the project. The Tripartite review (see below) will be incorporated during one of these Steering Committee meetings to avoid duplication and to appraise the progress and concerns of the project at the same time.

Tripartite Review (TPR)

129. The tripartite review (TPR) is the highest policy-level meeting of the parties directly involved. The project will be subject to Tripartite Review (TPR) at the same time as the meeting of the Project Steering Committee at least once every six months or as appropriate by representatives of the Government Coordinating Agency, the Executive Council of the Rodrigues Regional Assembly, the Ministry of Fisheries and UNDP. The Project Manager shall prepare an Annual Project Report (APR) to be submitted to UNDP and to the PSC at least once every year. The APR must be ready two weeks prior to the TPR.

130. The APR will be used as one of the basic documents for discussions in the TPR and the PSC meetings which will take place at the same occasion to avoid duplication. The Project Manager presents the APR to the TPR and the PSC, highlighting progress made and constraints encountered in the implementation, policy issues and recommendations for the decision of the TPR participants. The PM also informs the participants of any agreement reached by stakeholders during the APR preparation on how to resolve operational issues. Monitoring and Evaluation Indicators will be built into the project in consultation with UNDP.

Terminal Tripartite Review (TTR)

131. The terminal tripartite review will be held in the last month of project operations. The Project Manager will be responsible for the preparation of the Terminal Report, and its submission to UNDP. It shall be prepared and circulated at least two weeks in advance to allow review prior to the TTR. The Terminal Report will serve as the basis for discussions in the TTR. The terminal tripartite review considers the implementation of the project as a whole, paying particular attention to whether the project has achieved its immediate objectives and contributed to the broader environmental objective, and recommends follow up actions.

Project Implementation Review (PIR)

132. The PIR is a major tool for monitoring the GEF portfolio and extracting lessons is the annual GEF Project Implementation Review (PIR). The PIR has become an essential management and monitoring tool for project managers and offers the main vehicle for extracting lessons from ongoing projects.

133. The PIR is mandatory for all GEF projects that have been under implementation for at least one year at the time that the exercise is conducted. A project becomes legal and implementation activities can begin when all parties have signed the project document. The PIR questionnaire is sent to the UNDP country office, usually around the beginning of June. It is the responsibility of the Project Manager to complete the PIR questionnaire, with the oversight of the UNDP Country Office.

Evaluation

134. An independent evaluation will be undertaken during the third year. The evaluation will focus on the effectiveness, efficiency, timeliness and quality 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 immediate implementation. The organisation, terms of reference and timing of the evaluation will be decided after consultation between the parties to the project document.

135. An independent evaluation will take place at the end of the project. The final evaluation will look at signs of potential impact and sustainability of results, including the contribution to capacity development and the achievement of global environmental goals. The end of project evaluation should also provide recommendations for follow-up activities. The organisation, terms of reference and timing of the final evaluation will be decided after consultation between the parties to the project document.

136. The project will also be closely monitored by the UNDP Country Office through regular project site visits as required.

Monitoring and Evaluation at the demonstration site

137. A monitoring and evaluation strategy for the demonstration site forms a key component of Objective 2. This will be undertaken independently of the projects monitoring and evaluation plan outlined in Annex VI to help ensure sustainability of the site at the closure of the project. Progress will be assessed according to the baseline and both socio-economic and biodiversity indicators developed during the projects activities.

On site capacity building of the Ministry of Fisheries and the Rodrigues Regional Assembly officials would be undertaken on a regular basis with regard to overall MPA co-management principles and approaches. Ideally, hands-on training for officials of the Ministry of Fisheries and the Rodrigues Regional Assembly would be effected on a regular basis as required.

Part IV Legal Context

138. This project document shall be the instrument referred to as such in Article 1 of the Standard Basic Assistance Agreement (SBAA) between the Government of Mauritius and the United Nations Development Programme, signed by the parties on 29th August 1974. The host country-implementing agency shall, for the purpose of the Standard Basic Assistance Agreement, refer to the government cooperating agency described in that Agreement.

139. UNDP acts in this project as Implementing Agency of the Global Environment Facility (GEF), and all rights and privileges pertaining to the UNDP as per the terms of the SBAA shall be executed mutatis mutandis to GEF.

140. The UNDP Resident Representative in Mauritius is authorized to effect in writing the following types of revisions to this project document, provided s/he has verified the agreement thereto by the UNDP GEF unit and is assured that the other signatories of the project document have no objections to the proposed changes:

- (a) Revisions of, or addition to, any of the annexes to the Project Document;
- (b) Revisions which do not involve significant changes in the immediate objectives, outputs or activities of the project, but are caused by the rearrangement of inputs already agreed to or by the cost increases due to inflation;
- (c) Mandatory annual revisions which re-phase the delivery of agreed project inputs, or reflect increased expert or other costs due to inflation, or take into account agency expenditure flexibility, and
- (d) Inclusion of additional annexes and attachments only as set out here in this Project Document.

Audit Requirement

- The project will be audited on a yearly basis for financial year January to December as per National Execution (NEX) and Global Environment Facility requirements
- The audit will be conducted by the Government Auditor or by an auditor engaged by the Government
- The Executive Council of the Rodrigues Regional Assembly should also certify the yearly Combined Delivery Reports issued by UNDP based on financial statements prepared by the Project Manager.

XIII: WORK PLAN

A detailed work plan indicating a time frame for all activities over the 4 ½ years of the project is provided in Annex IV.

LIST OF ANNEXES

ANNEX I: THREAT ANALYSIS

ANNEX II: LOGICAL FRAMEWORK MATRIX

ANNEX IV: WORK PLAN

ANNEX V: PUBLIC PARTICIPATION OPPORTUNITIES

ANNEX VI: MONITORING AND EVALUATION PLAN

ANNEX VII: TERMS OF REFERENCE

ANNEX IX: MAP OF THE PROJECT AREA

ANNEX X: KEY REFERENCE MATERIAL

ANNEX XI: ACRONYM LIST

Annex I THREAT ANALYSIS

THREATS AND BIOLOGICAL IMPACT	UNDERLYING FACTORS	ROOT CAUSES	INTERVENTION
National level			
Direct species loss and resource depletion throughout the marine environment	<p>Responsibilities for the marine environment are split between various agencies leading to fragmented efforts</p> <p>The know how for management of the marine environment is low among personnel charged with this responsibility</p> <p>Mechanisms for enforcing regulations and ensuring compliance are weak</p>	<p>Weak agency cooperation</p> <p>Limited training opportunities exist</p> <p>Management is effected through command and control approaches, rather than through voluntary incentive mechanisms; there are inadequate resources to sustain a strictly regulatory approach to management</p>	<p>BASELINE</p> <ul style="list-style-type: none"> • ICZM: Establish for a for interagency cooperation • ICZM: Review and development of enabling legislation • ICZM: Overseas and short course training <p>ALTERNATIVE</p> <ul style="list-style-type: none"> • Output 1.3 Activity 1: Multi-institutional arrangement to improve integrated management of marine resources Bringing agencies together at a high level will facilitate coordination of activities • Output 1.3: Activity 2: Document and disseminate experiences from the Integrated Marine Protected Area Management Board at the demonstration site to facilitate replication in future MPA's. Bringing agencies together at a site level will ensure all stakeholder views can be heard and improve land/marine integration • Output 1.4: Activity 1: Capacity building of personnel involved in marine resource management throughout Mauritius and Rodrigues The most eligible personnel will be selected, site visits to the Rodrigues demonstration site will be integral to the training and there will be a focus on developing capacity for replication of the co-management model • Output 1.2 Activity 1: Develop a co-management tool to facilitate the replication of co-managed MPA's throughout Mauritius and Rodrigues This will reduce the need for high level enforcement of regulations as stakeholders will be involved in managing the marine resources themselves
Continued depletion of marine resources in Marine Protected Areas	Mechanisms for enforcing regulations are weak	Resources and personnel are insufficient to manage the MPA's through strictly	<p>BASELINE</p> <ul style="list-style-type: none"> • ICZM: Develop Marine Park action plan • ICZM: Finalise management plans including zoning

THREATS AND BIOLOGICAL IMPACT	UNDERLYING FACTORS	ROOT CAUSES	INTERVENTION
	<p>Communities are not consulted in the establishment or involved in the decision making process for the management of marine protected areas; this undermines stakeholder ‘ownership’ of conservation</p> <p>Unwillingness of resource users to cooperate with zonation plans and other park regulations as they are not involved in management and derive no benefits from the MPA’s</p>	<p>regulatory controls</p> <p>Central government retain finances generated from protected areas. There is little incentive to generate money on site</p> <p>Government maintain sole responsibility for managing the MPA and do not cooperate with other stakeholders</p> <p>The know-how to implement collaborative management among the community, private sector and government is limited</p>	<ul style="list-style-type: none"> • ICZM: Evaluate and determine the need for more reserves <p>ALTERNATIVE</p> <ul style="list-style-type: none"> • Output 1.2 Activity 1: Develop a comanagement tool to facilitate the replication of co-managed MPA’s throughout Mauritius and Rodrigues This will reduce the need for high level enforcement of regulations as stakeholders will be involved in managing the marine resources themselves • Output 1.1: Activity 1: Strengthen policy and legislation related to the generation of finances for MPA’s This will allow MPA’s to keep the revenue they generate and direct it to sustaining operating costs • Output 2.2 Activity 6: Identify financial instruments to generate revenue to sustain conservation operations Output 2.3 Activity 7: Implement tariff collection system and trust fund The demonstration site will trial innovative financial mechanism which may be replicated as sites elsewhere. • Output 1.2: Activity 2: Improve public consultation methods in the sustainable management of marine resources
<p>Degraded lagoon environment; erosion, altered habitats, change in species assemblages, loss of biodiversity and habitats</p>	<p>Coastal developments such as buildings and jetties, built in inappropriate locations</p> <p>Tourism plans do not take into account marine conservation objectives</p> <p>Personnel responsible for land planning are not aware of the importance and vulnerability of the marine environment</p>	<p>Inadequate EIA and follow through</p> <p>Fragmentation at the decision making level for linking planning process between the land and marine environment</p> <p>Limited training opportunities and availability of information</p>	<p>BASELINE</p> <ul style="list-style-type: none"> • National Environment Action Plan • EIA procedures • National Physical Development Plan • ICZM – prepare coastal zone management plan <p>ALTERNATIVE</p> <ul style="list-style-type: none"> • Output 1.4: Activity 1: Capacity Building -ensure the training of staff of the marine parks division of the AFRC who are responsible for reviewing EIA reports for proposals having an impact on the marine environment. • Output 2.4: Activity 3: IMPAM review of lease applications and EIAs will be trialled and replicated if successful • Output 1.3: Activity 2: Document and disseminate experiences from the Integrated Marine Protected Area

THREATS AND BIOLOGICAL IMPACT	UNDERLYING FACTORS	ROOT CAUSES	INTERVENTION
			<p>Management Board at the demonstration site to facilitate replication in future MPA's. Replication of IMPAM boards will increase the coordination between land and marine based activities</p> <ul style="list-style-type: none"> • Output 1.3: Activity 3: Develop a tourism sector set of marine management principles • Output 1.4 Activity 2: Raising awareness within land planning agencies Capacity development of land planning agencies and local government to take marine conservation principles into account when developing plans
Negative impacts on the marine environment	<p>Tour operators do not take responsibility for limiting their impacts e.g. of speed boats, divers and other tourist activities on the marine environment</p> <p>Tour operators, hoteliers and tourists are unaware of their negative impacts</p>	<p>Tourism charter is not monitored and not adhered to</p> <p>Information on the marine environment and its vulnerability is not available</p>	<p>BASELINE</p> <ul style="list-style-type: none"> • Environment Charter <p>ALTERNATIVE</p> <ul style="list-style-type: none"> • Output 1.3: Activity 3: Develop a tourism sector set of marine management principles and mechanisms to monitor application • Output 1.4 Activity 3: Training journalists in marine conservation issues to increase information available to the public • Awareness raising techniques such as information boards, outreach materials, use of tour operators/hotels as a tool to raise awareness etc. will be trialed at the demonstration sites and replicated in other MPA's
Unsustainable resource extraction, damage to coral, polluting and littering the marine environment	Little interest or awareness amongst the public of the marine environment	The public have limited access to information about the marine environment	<p>BASELINE</p> <ul style="list-style-type: none"> • NGO and CBO activities <p>ALTERNATIVE</p> <ul style="list-style-type: none"> • Output 1.4: Activity 3: Training journalists in marine conservation issues <p>This will increase the amount of information available to the general public.</p>
Site Based Threats			Objective 2
Fish number depletion	Current regulations relating to	Weak institutional framework for	ALTERNATIVE

THREATS AND BIOLOGICAL IMPACT	UNDERLYING FACTORS	ROOT CAUSES	INTERVENTION
caused by unsustainable harvesting	fishing reserves are not implemented and the reserve is not managed effectively	<p>management of resources</p> <p>Stakeholders not involved in management.</p> <p>Staff and equipment to ensure compliance do not exist</p>	<ul style="list-style-type: none"> • IMPAM board established, representative of all stakeholders, will an agreed procedure for operation • Regulations agreed among all stakeholders, implementation capacity developed, regulations trialled and adapted. • Enforcement personnel and equipment agreed by stakeholders, methods tested and adapted
Coral damage by destructive marine harvesting methods, such as basket trapping and octopus catching	Community are unaware of techniques to harvest marine resources sustainably	Information and training does not exist	<p>ALTERNATIVE</p> <ul style="list-style-type: none"> • Alternative ways are identified, with the community, of anchoring boats, catching octopus and deploying baskets that are less damaging to the reef • Capacity developed to raise awareness of and implement techniques • Outreach materials distributed with information of new techniques
Decline in fish and octopus catch caused by harvest of resource levels with no long term management goals	<p>Communities unaware of techniques to ensure sustainable fishing and octopus catch</p> <p>Communities are dependent upon marine resources to sustain their livelihoods</p>	<p>Information and training does not exist</p> <p>No alternative livelihood options</p>	<p>ALTERNATIVE</p> <ul style="list-style-type: none"> • Capacity developed to establish community managed no take zones (including surveying, monitoring, adapting) with the aim of replenishing fish stocks and optimising recruitment • Culturally appropriate outreach materials with information about the marine environment and sustainable harvesting methods • Investigate the potential for carrying out environmentally friendly seaweed aquaculture and octopus culture • Involvement in land based activities provides alternative sources of income
Reef and lagoon damage caused by buildings and jetties	<p>Inappropriate coastal developments</p> <p>Personnel responsible for land planning are not aware of the importance and vulnerability of the marine environment</p> <p>EIA procedures not carried out effectively</p>	<p>No integrated land/water planning</p> <p>No training opportunities and available information</p> <p>Personnel responsible for EIA procedures do not always have the expertise to undertake effective reviews</p>	<p>BASELINE</p> <ul style="list-style-type: none"> • EIA procedures • Regulations under the National Physical Development Plan • ICZM – prepare coastal zone management plan <p>ALTERNATIVE</p> <ul style="list-style-type: none"> • IMPAM board will consist of a representative set of stakeholders (both the land and marine environment) to ensure management is integrated. • Work with existing development activities to ensure

THREATS AND BIOLOGICAL IMPACT	UNDERLYING FACTORS	ROOT CAUSES	INTERVENTION
	Weak enforcement of regulations and penalties on hotel operators not complying with appropriate construction practices		<p>environmental considerations are taken into account</p> <ul style="list-style-type: none"> • Build capacity of land planners and other local authorities to take marine conservation issues into account • IMPAM board to review EIA and land lease applications • Enforcement of penalties to the tourism sector not complying with agreed management principles
Coral damage caused by high sediment loads	Inappropriate land use in the catchment	No integrated land/water planning	<p>ALTERNATIVE</p> <ul style="list-style-type: none"> • European Development Fund land rehabilitation activities • IMPAM board will consist of stakeholders from both the land and marine environment to ensure management is integrated.
Future Threats			
Removal of coral and shells, coral damage by tourists	Tourists are unaware of the importance of the marine environment	Information about the marine environment and eco-friendly activities are not available	<p>ALTERNATIVE</p> <ul style="list-style-type: none"> • Interpretation trails and visitors centre • Visitors code of conduct • Tour operators involved in awareness raising • Outreach materials
Pollution of the lagoon leading to loss of environmental quality, eutrophication caused by an increase in tourist number	<p>No limits on the number of tourists</p> <p>Weak enforcement of regulations and penalties on hotel operators not complying with wastewater management</p>	Tourism carrying capacity not updated	<p>BASELINE</p> <ul style="list-style-type: none"> • Tourism carrying capacity for the whole of Rodrigues <p>ALTERNATIVE</p> <ul style="list-style-type: none"> • Tourist carrying capacity assessed and limitations on number imposed if necessary • Enforcement of penalties to the tourism sector not complying with agreed management principles
Reef damage; loss of environmental quality, toxicity caused by oil spills and other unexpected events	No rapid response mechanism of dealing with disasters	No risk assessment study or response plan exists	<p>ALTERNATIVE</p> <ul style="list-style-type: none"> • Risk assessment study and response plan produced

ANNEX II Logical Framework Matrix

Objectives	Indicators	Means of verification	Assumptions and Risks
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Objectives	Indicators	Means of verification	Assumptions and Risks
Goal: Improve the management and conservation practices for marine PA's within the Republic of Mauritius including Rodrigues, and the equitable sharing of benefits to the local communities and economic operators on a sustainable basis			Communication and trust between stakeholders and the project are maintained.
Purpose: Develop and test a model for co-management, between government, local communities and the private sector, and build an enabling environment for its replication throughout the Republic of Mauritius	<ol style="list-style-type: none"> 1. Evidence of best practice management techniques being implemented successfully in two other marine protected areas 2. Area of reef under effective conservation management throughout the Republic of Mauritius (measured by monitoring fish diversity, coral diversity and relative damage from human and natural causes) expands by the end of the project and continues to increase. 	<ol style="list-style-type: none"> 1. Monitoring and Evaluation records from other MPA's 2. Community monitoring reports, surveillance network records 	Intra village conflicts pertaining to conservation management can be successfully mediated No increase in natural environmental perturbation beyond background level (i.e. storm intensity, drought, El Nino)
Project Outputs:			
Specific Objective 1: Develop an enabling policy and institutional framework for sustainably co-managed MPA's throughout the RoM, including Rodrigues	<ol style="list-style-type: none"> 1. Evidence of a change in policies/legislation regarding financial arrangements for MPA's by end of year 4 2. Independent monitoring confirms that, by year 4, tools developed are being utilized outside the project site 3. Evidence of a multi-institutional arrangement to improve integrated management of marine resources at the national level by end of year 4 4. 15 number of personnel staff trained by end of year 4 	<ol style="list-style-type: none"> 1. Government decree 2. Annual records from AFRC 3. Minutes of meetings from established multi-institutional arrangement 4. Annual reports 	Central government remains receptive to the project and its recommendations over successive political cycles AFRC actively promotes the use of tools and codes of conduct outside the project site Agencies remain willing to coordinate
Output 1 Policy and legislation for the management and sustainability of marine resources strengthened	<ol style="list-style-type: none"> 1. Task force established to assist Government to adopt the proposal to adapt policy and legislation to allow MPA's to keep income they have generated for site management by end of year 2 2. Change in policy and legislation enabling MPA's to keep revenue 	<ol style="list-style-type: none"> 1. Task force working group minutes and work plan 2. Technical documents and base studies resulting from work commissioned 3. Draft proposal for policy and legislation change 	Central government remains supportive of project objectives and incorporates recommendations into policy making

Objectives	Indicators	Means of verification	Assumptions and Risks
	generated on site by end of year 4.		
Output 2: Tools and codes of practice are developed to facilitate the practical application of existing policies and legislation	<ol style="list-style-type: none"> 1. Utilisation of co-management tool in at least 2 MPA's outside the project by year 4 2. At least 3 incidences of use of public consultation code of conduct, outside the demonstration site by year 4 	<ol style="list-style-type: none"> 1. AFRC annual report 2. Progress records from other marine protected areas 	AFRC remain receptive to the use of the tools and codes of conduct outside the project area
Output 3: Mechanisms for strengthening institutional arrangements for the management and sustainability of marine resources identified and promoted at pilot sites.	<ol style="list-style-type: none"> 1. Task force established to take forward recommendations from the project study with regards to a multi-institutional arrangement to improve integrated management of marine resources by end of year 2. 2. Existence of new multi-institutional arrangement by end of year 3. 3. At least 60 stakeholders receive documentation of IMPAM board experience by year 4. 4. Mourouk IMPAM board members visit at least 2 other sites to advise on establishing similar boards by end of year 4 	<ol style="list-style-type: none"> 1. Task force working group minutes and work plan 2. Document of proposed multi-institutional arrangement 3. Records of distribution of IMPAM board experience document 4. Record of visits made by IMPAM board members 	<p>Institutions remain receptive to recommendations and are willing to constitute a multi-institutional arrangement</p> <p>IMPAM board members are willing to share experiences</p>
Output 4: National Responsible Tourism Marine Management Principles developed and operationalised.	<ol style="list-style-type: none"> 1. Working group established and meeting regularly to guide, advise, and make recommendations with regards to the implementation of a national tourism sector set of marine management principles progress the projects objectives by end of year 2. 2. Task force established to take forward the recommendations from the working group for a multi-institutional arrangement with regards to improvement in the policy, legislative as well as institutional measures by end of year 2. 3. Independent monitoring confirms that at least 20 hotels are actively implementing the Tourism sector set of marine management principles throughout Republic of Mauritius by end of year 4 	<ol style="list-style-type: none"> 1. Working group minutes 2. Records of consultation 3. Consultation strategy document and associated meeting minutes 4. Task force minutes of meeting and workplan 5. Independent monitoring report 	<p>The tourism sector remains receptive and willing to participate in consultations.</p> <p>AHRIM/ARTO members remain receptive to the use of marine management principles</p>
Output 5: Awareness increased in fishery sector of the fishery	1. Association des Pecheurs Professionnels de l'Île Maurice,	1. Annual report of Association des Pecheurs Professionnels de l'Île	

Objectives	Indicators	Means of verification	Assumptions and Risks
productivity benefits derived from sound MPA management	Association des Pecheurs Professionnels de l'Ile Rodrigues, Organisation des Pecheurs Professionnels Rodriguais and other individuals and organisations representing the fishermen community agree principles of MPA's and co-management based on experiences at the demonstration site by end of year 3 2. Representatives of the fisheries sector participate in at least 4 meetings annually with project staff to ensure regular dialogue and progress of projects objectives.	Maurice, Association des Pecheurs Professionnels de l'Ile Rodrigues, Organisation des Pecheurs Professionnels Rodriguais and other individuals and organisations representing the fishermen community 2. Records of consultation 3. Consultation strategy document and associated meeting minutes Independent monitoring report.	
Output 6: Increase in marine conservation awareness within key sectors of the society	1. 15 number of personnel involved in marine resource management in Mauritius and Rodrigues trained by end of year 3 2. 7 number of Ministry of Housing and local authority personnel trained by end of year 4 3. Communication network to inform journalists of marine issues is established by year 3 4. Annual award in place for best environmental journalism is in place by year 2	1. Training report and list of attendees 2. Training report of Ministry of Housing staff 3. Annual report 4. Record of award winners	Time is given by line managers for training Journalists remain receptive to reporting about the marine environment
Specific Objective 2: Develop and adapt innovative co-management arrangements for Marine Protected Areas (MPA) at a representative demonstration site.	1. Independent monitoring confirms active involvement of all stakeholder; community members, tour operators, local government in MPA management at demonstration by year 2 2. Independent monitoring confirms that co-management plan is fully operational; zonation plan in place and working, user fees generated, visitors code of conduct in use by year 3 3. Biennial biological surveys confirms that reef condition (measured by fish diversity, coral diversity and relative damage from human and natural causes) at demonstration MPA improves beyond established baseline by year 4	1. List of membership and minutes of IMPAM board meetings 2. Monitoring and Evaluation report	Inter village conflicts pertaining to conservation management can be successfully mediated. Socio-political environment in Mourouk remains supportive of project objectives
Output 1: Integrated Marine Protected Area	1. Existence of IMPAM board, guidelines of operation, evidence of meetings held	1. Minutes of IMPAM board meetings and guidelines of operation	Representiveness of stakeholders on the IMPAM board is achieved

Objectives	Indicators	Means of verification	Assumptions and Risks
board and infrastructure established	by end of year 2 2. Evidence of office and personnel in place by end of year 2	2. Monitoring and Evaluation report	
Output 2: Integrated Marine Protected Area plan developed	1. Participatory management plan developed with full stakeholder endorsement by end of year 2 2. Participatory M&E strategy developed with defined indicators by end of year 2	1. Management plan with stakeholder signatures 2. M&E strategy document	Stakeholders work collaboratively and are well represented on the board
Output 3: Capacity developed and Integrated MPA plan implemented	1. Independent monitoring confirms that MPA zones are being adhered to and infractions are being reported and penalized by year 4. 2. Independent monitoring confirms that resource users are in full compliance with the user fee systems and are engaged in fee adjustment negotiations by year 3. 3. Independent monitoring confirms Tourism plan is fully operational; (visitor centre built, visitors code of conduct, walking trails established) by year 4. 4. At least 30 community members are involved with land based activities by end of year 3 5. Risk assessment study report and response plan developed by end of year 3 6. 6 monthly livelihood, resource use and attitudinal monitoring exercises completed.	1. Vigilance survey, records of fines implemented 2. Records of user fees obtained 3. Tourism plan document, visitors code of conduct, monitoring and evaluation report 4. MPAM board meeting minutes and work plan, memorandums of understanding with land based organisations 5. Report of risk assessment and response plan 6. Project report	Staff trained are retained at the project site Community remain sufficiently motivated to participate in the project Climatic conditions do not affect the lagoon
Output 4: Marine conservation awareness increased at the demonstration site	1. 10 number of tour operators involved in awareness raising activities 2. Attitudinal survey indicates favourable change in attitude towards the marine environment amongst the community and tour operators by year 3 3. Ratio of applications for leases and EIA's made in the project areas and	1. Records of tour operators trained and subsequently involved in awareness raising activities 2. Attitudinal surveys of local communities and tour operators 3. Government records and IMPAM reports 4. Annual report.	Tourists are interested in the interpretative material provided Stakeholders are willing to adapt activities as a result of evaluation Children are communicating knowledge gained to their elders and peers

Objectives	Indicators	Means of verification	Assumptions and Risks
	<p>reviewed by IMPAM board improves annually</p> <p>4. At least 300 children reached by environmental education activities</p>		

Outputs	Activities
Output 1.1 Policy and legislation for the management and sustainability of marine resources strengthened	<i>Activity 1: Strengthen policy and legislation related to the generation of finances for Marine Protected Areas</i>
Output 1.2: Tools and codes of practice are developed to facilitate the practical application of existing policies and legislation	<p><i>Activity 1: Develop a comanagement tool to facilitate the replication of co-managed Marine Protected Areas throughout Mauritius and Rodrigues</i></p> <p><i>Activity 2: Develop a code of conduct to improve public consultation methods in the sustainable management of marine resources</i></p>
Output 1.3: Mechanisms for strengthening institutional arrangements for the management and sustainability of marine resources identified	<p><i>Activity 1: Facilitate a mechanism for a multi-institutional arrangement to improve integrated management of marine resources</i></p> <p><i>Activity 2: Document experiences from the Integrated Marine Protected Area Management Board at the demonstration site to facilitate replication in future MPA's</i></p>
Output 1.4: Tourism outreach and reform	<p><i>Activity 1: Establish a working group with the Ministry of Tourism, AHRIM, ARTO and the Mauritius Tourism Promotion Authority to facilitate working with the Tourism sector in marine conservation issues</i></p> <p><i>Activity 2: Awareness raising of marine conservation within the Tourism Sector.</i></p> <p><i>Activity 3: With the working group identify a long term mechanism for on-going consultation and participation with the Tourism sector.</i></p> <p><i>Activity 4: Develop a tourism sector of marine management principles.</i></p>
Output 1.5:	<i>Activity 1: Establish a working group with the Association des Pecheurs Professionnels de l'Île Maurice,</i>

Outputs	Activities
Fisheries outreach and reform	<p><i>Association des Pecheurs Professionnels de l'Île Rodrigues, Organisation des Pecheurs Professionnels Rodriguais and other individuals and organisations representing the fishermen community to agree principles of MPA's and co-management based on experiences at the project site.</i></p> <p><i>Activity 2: Develop a long term awareness raising strategy to promote awareness of MPA's and benefits on fishery levels..</i></p> <p><i>Activity 3: With the working group identify a long term mechanism for on-going consultation and participation with the Fisheries sector.</i></p> <p><i>Activity 4: Develop a tourism sector of marine management principles.</i></p>
Output 1.6: Increase in marine conservation awareness within key sectors of the society	<p><i>1. Capacity building of personnel involved in marine resource management throughout Mauritius and Rodrigues</i></p> <p><i>2. Raising awareness within land planning agencies</i></p> <p><i>3. Training journalists in marine conservation issues</i></p>
Output 2.1: Integrated Marine Protected Area board and infrastructure established	<p><i>Activity 1- Establish and operationalize a management structure and establish infrastructure</i></p>

Outputs	Activities
<p>Output 2.2: Integrated Marine Protected Area plan developed</p>	<p><i>Activity 1: Data collection necessary for monitoring and evaluation and adaptive management</i></p> <p><i>Activity 2 Identify stakeholders and formulate a stakeholder participation plan and strategy to ensure the views of all stakeholders are represented.</i></p> <p><i>Activity 3: Develop a zonation plan to allow different zones for different marine based activities (using the map developed in 2.1) and strategy for implementation</i></p> <p><i>Activity 4: Develop activities to ensure the sustainable use of marine resources in collaboration with AFRC/FRTU</i></p> <p><i>Activity 5. Identify regulation mechanisms for ensuring enforcement and compliance in the management of marine resources</i></p> <p><i>Activity 6: Identify financial instruments to generate revenue to sustain conservation operations</i></p> <p><i>Activity 7: Assess carrying capacity and develop a tourism strategy for the MPA</i></p> <p><i>Activity 8: Establish links with other agencies for land based activities to reduce pressure the marine environment and ensure that local communities are integrated into activities to provide them with alternative sources of income</i></p> <p><i>Activity 9: Develop a participatory monitoring and evaluation strategy to monitor the projects progress in achievement of the objectives and against the baseline situation.</i></p> <p><i>Activity 10: Finalize the integrated MPA management plan</i></p>
<p>Output 2.3: Capacity developed and Integrated MPA plan implemented</p>	<p><i>Activity 1: Develop a training programme specific to staff involved in the running of the MPA e.g. park manager and associated staff, visitor centre staff, and others associated with tourism activities etc.</i></p> <p><i>Activity 2: Develop capacity specific to local communities to enhance their ability to participate in the integrated MPA.</i></p> <p><i>Activity 3: Develop capacity needs specific to economic operators to maximize their participation in the integrated MPA</i></p> <p><i>Activity 4: Develop capacity of key department heads, personnel from local authorities and other public servants involved in the Marine Protected Area process who would benefit from training</i></p> <p><i>Activity 5: Trial and adapt community managed no take zones and sensitive resource harvesting techniques</i></p> <p><i>Activity 6: Operationalize enforcement regulations and adapt if necessary</i></p>

Outputs	Activities
	<p><i>Activity 7: Implement tariff collection system and trust fund</i></p> <p><i>Activity 8: Implement the tourism plan</i></p> <p><i>Activity 9: Carry out land based activities to reduce pressure on the marine environment</i></p> <p><i>Activity 10: Undertake a risk assessment study and response plan (contingency) for the MPA</i></p> <p><i>Activity 11: Implement participatory M&E strategy</i></p> <p><i>Activity 12: Adaptively manage the demonstration site based on results of research and monitoring.</i></p> <p><i>Activity 13: Undertake an evaluation of the MPA approach and disseminate lessons learnt</i></p>
<p>Output 2.4: Marine conservation awareness increased</p>	<p><i>Activity 1: Design awareness raising programmes for the current resource users</i></p> <p><i>Activity 2: Develop an environmental education strategy for tourists visiting the Marine Protected Area</i></p> <p><i>Activity 3: Devise appropriate coordination mechanisms at the decision level between government organizations and developers to ensure proposed development considers marine biodiversity guidelines</i></p> <p><i>Activity 4: Implement coastal environment education activities for primary schools in Rodrigues</i></p>

ANNEX IV Work Plan

The proposed Work Plan is enclosed hereafter. This work plan indicates the sequence of the activities to be carried out with a view to achieving the desired outputs in a timely manner. The activities of Objective 2 will be implemented beforehand and the activities of Objective 1 will follow afterwards in order to set up and implement the national activities based on the site experience as per the following work plan:

OUTPUTS AND ACTIVITIES	OUTPUTS AND ACTIVITIES (Months from Start of the Project)																	
	3	6	9	12	15	18	21	24	27	30	33	36	39	42	45	48	51	54
<i>Objective 1: Develop an enabling policy and institutional framework for sustainably co-managed Marine Protected Areas throughout the Republic of Mauritius, including Rodrigues</i>																		
Output 1: Policy and legislation for the management and sustainability of marine resources strengthened																		
<i>Activity 1: Strengthen policy and legislation related to the generation of finances for MPA's</i>																		
Output 2: Tools and codes of practice are developed to facilitate the practical application of existing policies and legislation																		
<i>Activity 1: Develop a comanagement tool to facilitate the replication of co-managed MPA's throughout Mauritius and Rodrigues</i>																		
<i>Activity 2: Improve public consultation methods in the sustainable management of marine resources</i>																		
Output 3: Mechanisms for strengthening institutional arrangements for the management and sustainability of marine resources identified																		
<i>Activity 1: Facilitate a mechanism for a multi-institutional arrangement to improve integrated management of marine resources</i>																		
<i>Activity 2: Document and disseminate experiences from the Integrated Coastal Areas Management Board at the demonstration site to facilitate replication in future MPA's</i>																		
Output 4: Tourism outreach and reform																		
<i>Activity 1: Establish a working group with the Ministry of Tourism, AHRIM, ARTO and the Mauritius Tourism Promotion Authority to facilitate working with the Tourism sector in marine conservation issues</i>																		
<i>Activity 2: Awareness raising of marine conservation within the Tourism Sector.</i>																		
<i>Activity 3: With the working group identify a long term mechanism for on-going consultation and participation with the Tourism sector.</i>																		
<i>Activity 4: Develop a tourism sector set of marine management principles</i>																		
Output 5: Fisheries outreach and reform																		
<i>Activity 1: Establish a working group with the Association des Pecheurs Professionnels de l'Ile Maurice, Association des Pecheurs</i>																		

ANNEX V PUBLIC PARTICIPATION OPPORTUNITIES

PROJECT OUTPUTS AND ACTIVITIES	Participation Opportunities
<p>Objective 1: Develop an enabling policy and institutional framework for sustainably co-managed Marine Protected Areas throughout the Republic of Mauritius, including Rodrigues</p>	
<p>Output 1.1: Policy and legislation for the management and sustainability of marine resources strengthened</p>	
<p><i>Activity 1: Strengthen policy and legislation related to the generation of finances for MPA's</i></p> <ul style="list-style-type: none"> Review existing policies and legislation to identify current strengths and weaknesses. Based on the review findings and lessons from the demonstration site, develop proposals for new policies and legislation reform to better ensure the financial sustainability of MPA's. This will be followed up by the team setting up a Task Force with the relevant central Government Ministries to assist the Government in adopting the proposals. 	<p>MinFish, MinEnvir, MinAg (Parks) and other relevant stakeholders at Central Government level, as well as the Rodrigues Regional Assembly will form part of the consultations</p>
<p>Output 1.2: Tools and codes of practice are developed to facilitate the practical application of existing policies and legislation.</p>	
<p><i>Activity 1: Develop a comanagement tool to facilitate the replication of co-managed MPA's throughout Mauritius and Rodrigues</i></p> <ul style="list-style-type: none"> Review experiences from elsewhere and the demonstration site Develop a user friendly tool with recommendations of best practice in developing and implementing co-managed protected marine areas. This will not be limited to the partnerships trialed at the demonstration site [community, private sector and local government]. Ensure the distribution of the tool to key stakeholders, in particular those involved in the ICZM 	<p>MinFish and the Rodrigues Regional Assembly as well as other relevant stakeholders at Central Government level will form part of the consultations</p>
<p><i>Activity 2: Improve public consultation methods in the sustainable management of marine resources</i></p> <ul style="list-style-type: none"> From the experiences at the demonstration site develop a code of conduct for mandatory public consultation in the procedures for setting up and managing MPA's and other resource decisions for the coastal environment. Engage stakeholders from the project steering committee to facilitate the use of these principles and code of conduct in future practice, in particular for the ICZM process. 	<p>Relevant stakeholders including the local communities and the private sector will all be involved in the consultation process</p>
<p>Output 1.3: Mechanisms for strengthening institutional arrangements for the management and sustainability of marine resources identified</p>	
<p><i>Activity 1: Facilitate a mechanism for a multi-institutional arrangement to improve integrated management of marine resources</i></p> <ul style="list-style-type: none"> Review the different mandates of the various agencies, at different levels, responsible for marine issues. Undertake stakeholder consultation to identify the best way of strengthening the institutional arrangements, drawing on the experiences from the project site. From the stakeholder discussions identify a mechanism to bring the different organizations mandated with marine issues together to improve integrated management of marine resources. Establish a task force with key stakeholders to take forward recommendations from the project study to central Government ministries. 	<p>MinFish and the Rodrigues Regional Assembly as well as other relevant stakeholders at Central Government level will form part of the consultations</p>

<p><i>Activity 2: Document and disseminate experiences from the Integrated Coastal Areas Management Board (IMPAM) at the demonstration site to facilitate replication in future MPA's.</i></p> <ul style="list-style-type: none"> • The demonstration will have tested a model drawing together a number of stakeholders at a site level. Experiences will be documented outlining the strengths, weakness and challenges of the approach that was taken. This will be a valuable tool for replication of similar IMPAM boards at other sites in the future. • Disseminate document to key decision makers particularly those involved in the ICZM process. • Identify opportunities for members of the IMPAM board from the project site to contribute their knowledge in the establishment of boards elsewhere based on their experiences at the demonstration site. 	<p>Not applicable</p>
<p>Output 1.4: Tourism outreach and reform</p>	
<p><i>Activity 1: Establish a working group with the Ministry of Tourism, AHRIM, ARTO and the Mauritius Tourism Promotion Authority to facilitate working with the Tourism sector in marine conservation issues</i></p>	<p>Ministry of Tourism, AHRIM, ARTO., MTPA and any other relevant stakeholders at Government, private sector and community level will be invited to participate</p>
<p><i>Activity 2: Awareness raising of marine conservation within the Tourism Sector.</i></p> <p>Using the established institutions, and with guidance from the working group established above, carry out a widespread sector consultation process with the tourism sector to understand their impression of marine conservation, their commercial drivers, cost burdens etc. Such a process will also serve as an awareness raising opportunity to improve the sectors perception of MPA's and the economic benefits to them from MPA management, to help secure their buy-in and reform.</p>	<p>Ministry of Tourism, AHRIM, ARTO., MTPA and any other relevant stakeholders at Government, private sector (including hotel and tour operators) and community level will be invited to participate</p>
<p><i>Activity 3: With the working group identify a long term mechanism for on-going consultation and participation with the Tourism sector.</i></p> <p>Tasks will be identified with the working group and will be important in achieving long term buy in from the tourism sector to contribute to marine conservation. This will work closely with the working group established in Activity 1 and the working group established for drawing up the Tourism Development Plan.</p>	<p>Ministry of Tourism, AHRIM, ARTO., MTPA and any other relevant stakeholders at Government, private sector (including hotel and tour operators) and community level will be invited to participate</p>
<p><i>Activity 4: Develop a tourism sector set of marine management principles</i></p> <ul style="list-style-type: none"> • Review existing environment charter to identify strengths and weaknesses • Based on the review findings and experiences from the demonstration site, and in close coordination with the Ministry of Tourism, AHRIM and ARTO, develop a national tourism sector set of marine management principles, and associated monitoring mechanism. • Establish a working group with the Ministry of Tourism, AHRIM and ARTO to ensure this is utilized throughout Mauritius and Rodrigues and that monitoring is enforced. • With the working group develop incentive schemes and penalties to be imposed on operators that do not adhere to the management principles. • Guidance and advice will be provided by the working group established for drawing up the Tourism Development Plan. • Task force established to take forward the recommendations from the working group for a multi-institutional arrangement with regards to improvement in the policy, legislative as well as institutional measures as related to the implementation of the national tourism sector set of marine management principles and its associated monitoring mechanism, incentives scheme and penalties for non compliance. 	<p>MinTourism and its constituents from the private sector will be involved in the consultations</p>
<p>Output 1.5: Fisheries outreach and reform</p>	
<p><i>Activity 1: Establish a working group with the Association des Pecheurs Professionnels de l'Île Maurice, Association des Pecheurs Professionnels de l'Île Rodrigues, Organisation des Pecheurs Professionnels Rodriguais and other individuals and organisations representing the fishermen community to agree principles of MPA's and co-management based on experiences at the demonstration site.</i></p>	<p>Ministry of Fisheries, APPIM, APPIR, OPPIR and any other governmental and non-governmental organisations and individuals representative of the fishermen community will participate</p>

<p><i>Activity 2: Develop a long term awareness raising strategy to promote awareness of MPA's and benefits on fishery levels.</i></p> <p>Using the established institutions, and with guidance from the working group established above, carry out a widespread sector consultation process with the fisheries sector to understand their impression of marine conservation and MPA's. Such a process will also serve as an awareness raising opportunity to improve the sectors perception of MPA's and the benefits to them from MPA management. Lessons learnt from the demonstration site and elsewhere should be appropriately used to demonstrate the value of no-take and multiple use MPAs to facilitate fishery compliance with new MPA's.</p>	<p>Ministry of Fisheries, APPIM, APPIR, OPPIR and any other governmental and non governmental organisations and individuals representative of the fishermen community will participate</p>
<p><i>Activity 3: With the working group identify a long term mechanism for on-going consultation and participation with the Fisheries sector.</i></p> <p>Tasks will be identified with the working group and will be important in achieving long term buy in from the fisheries sector to contribute to marine conservation.</p>	<p>Ministry of Fisheries, APPIM, APPIR, OPPIR and any other governmental and non-governmental organisations and individuals representative of the fishermen community will participate</p>
<p>Output 1.6: Increase in marine conservation awareness within key sectors of the society</p>	
<p><i>Activity 1: Capacity building of personnel involved in marine resource management throughout Mauritius and Rodrigues</i></p> <ul style="list-style-type: none"> Identify key personnel in Mauritius and Rodrigues (e.g. staff of marine park divisions) who could take advantage of training opportunities to facilitate replication and sustainability of MPA's . Design and implement training according to their needs. This will include on site training at the demonstration site and training with personnel from Rodrigues to ensure experiences from the process of establishing the MPA are shared to facilitate replication. This will be linked to specifically to Output 2.3, Activity 4. Capacity building to include ensuring the training of staff of the marine parks division of the AFRC who are responsible for reviewing EIA reports for proposals having an impact on the marine environment. 	<p>Personnel from the Ministry of Fisheries and the Rodrigues Regional Assembly will be trained</p>
<p><i>Activity 2: Raising awareness within land planning agencies</i></p> <ul style="list-style-type: none"> Work with the Ministry of Housing and local authorities to raise awareness of the importance of the marine environment related to the adjoining land environment which falls under their jurisdiction regarding land planning strategies Identify and implement training to improve the capacity and knowledge of the importance of the marine environment Measure the progress of participants post training to measure 	<p>Personnel from the Ministry of Housing and Lands will be trained</p>
<p><i>Activity 3: Training journalists in marine conservation issues</i></p> <ul style="list-style-type: none"> Organize a workshop for environmental journalists on their role in marine biodiversity conservation Identify a strategy for keeping journalists updated in marine issues Establish an annual award for the best example of environmental journalism which contributes to the conservation of marine biodiversity through informing the public 	<p>Leaders from coastal communities will form part of the Panel of Judges</p>
<p>Objective 2: Identify MPA co-management practice and test at demonstration site.</p>	
<p>Output 2.1: Integrated MPA Management board and infrastructure established</p>	
<p><i>Activity 1- Establish and operationalize a management structure and establish infrastructure</i></p> <ul style="list-style-type: none"> Establish and equip Integrated Marine Protected Area office Recruit personnel (Project Manager, Administrative Assistant, Financial Officer, Driver, TA - not fully resident) Establish the Integrated Marine Protected Area Board - representative of all stakeholders with agreed rules for decision making powers, roles and responsibilities Establish a fora and mechanisms whereby stakeholders may express their concerns and opinions 	<p>All other things being equal, preference will be given to suitably qualified local people for the personnel of the office The RRA, private sector and local communities will be invited to select representatives to serve on the Board</p>
<p>Output 2.2: Integrated MPA plan developed</p>	

<p><i>Activity 1: Data collection necessary for monitoring and evaluation and adaptive management</i></p> <ul style="list-style-type: none"> • Review published literature, datasets and other existing knowledge on the locality to be covered by the Integrated Marine Protected Area Management Plan • Carry out a coastal survey (incl. traditional knowledge) and mapping exercise and archive information on GIS 	<p>Local senior science students will be invited to assist with survey activities.</p> <p>Local knowledge will be recorded from the fishing communities</p>
<p><i>Activity 2: Identify stakeholders and formulate a stakeholder participation plan and strategy to ensure the views of all stakeholders are well represented.</i></p>	<p>the Rodrigues Regional Assembly as well as other relevant stakeholders at Central Government level, local communities and the private sector will form part of the consultation process</p>
<p><i>Activity 3: Develop a zonation plan to allow different zones for different marine based activities (using the map developed in 2.1) and strategy for implementation</i></p> <ul style="list-style-type: none"> • In collaboration with all stakeholders identify specific zones for the different marine based activities - fishing, diving, watersports etc. This will include community-managed 'no take' zones developed in Activity 2.4. • Prepare zonation proposals and discuss in open stakeholder forum • Select and implement the most effective zonation plan with agreed limits on numbers of participants and behaviour. • Design a conflict resolution mechanism 	<p>RRA. Local leaders will be trained to assist with the broad consultation process which will make use of all opportunities to obtain input from all who wish to participate</p> <p>Discussion with the private sector and the local communities will be facilitated with the aim of reaching a consensus</p>
<p><i>Activity 4: Develop activities to ensure the sustainable use of marine resources in collaboration with AFRC/FRTU</i></p> <ul style="list-style-type: none"> • Provide and communicate information on to communities on the benefits of community-managed 'no take' zones as part of the zonation strategy. • Assist communities to assess resource use, fisheries and resource condition (integrated into activity 1) • Assist communities to identify and carry out baseline surveys in proposed 'no take' zones • Establish a framework for managing 'no take' zones. • Investigate alternative ways of anchoring boats, catching octopus and deploying baskets that are less damaging to the reef 	<p>RRA. Full participation of local fishing communities and their leaders as well as the private sector</p>
<p><i>Activity 5. Identify regulation mechanisms for ensuring enforcement and compliance in the management of marine resources</i></p> <ul style="list-style-type: none"> • Identify equipment and personnel required to ensure enforcement of and compliance with the zonation plan • Identify and develop appropriate regulations and means of enforcement for sustainably managing marine resources; this will include a penalty system to impose fines for non compliance with the zonation plan (identifying the 'right fee') as well as to the tourism sector set of marine management principles as referred to under the Activity 7-Output 2.2. 	<p>RRA. Full participation of the local communities and the private sector</p>
<p><i>Activity 6: Identify financial instruments to generate revenue to sustain conservation operations</i></p> <ul style="list-style-type: none"> • Establish a user fee system based on best practice review of similar tariff systems elsewhere • Assess willingness to pay and optimum user fees. This will take into account cost recovery for management of the MPA. • Explore the setting up of trust fund to receive all income arising from the MPA and disburse it for the protection and management activities • Negotiate with RRA with regard to revenue sharing to ensure all of the funds raised are channelled for use in the MPA • Agree charter for managing the trust and identify appropriate operational mechanisms • Development and implementation of incentives schemes for the adherence to the tourism sector set of marine management principles at the demonstration site (as referred under Activity 7- Output 2.2) 	<p>RRA, the private sector, local communities and other stakeholders as appropriate will be invited to nominate Trustees to serve on the Board of Trustees</p>

<p><i>Activity 7: Assess carrying capacity and develop a tourism plan for the MPA.</i></p> <ul style="list-style-type: none"> • Assess the nature, growth and environmental impacts of tourists to the demonstration site and determine tourist carrying capacity • Carryout a cost-benefit study to determine the optimum number of tourists taking into account ecological sustainability, management costs and revenue earning potential • Develop and implement a tourism sector set of marine management principles and its monitoring within the project area • Recommendations of the study will be proposed to the RRA so that future limits to the numbers of visitors can be secured. • Develop a visitors code of conduct • Design visitors centre • Identify sites for underwater and walking trails • Make provisions for waste • Plan maintenance schedules 	<p>RRA, Consult with local community; operators in the local tourists/industry and the private sector</p>
<p><i>Activity 8: Establish links with other agencies for land based activities to reduce pressure the marine environment and ensure that local communities are integrated into this plan to provide them with alternative sources of income.</i></p> <p>This will include;</p> <ul style="list-style-type: none"> • Anti erosion project to advise on land use practices and reduce the sediment load reaching the lagoon • Ecological rehabilitation of Ile Hermitage, Ile Chat du Pierrot and Ile Plate 	<p>RRA. Full participation of local fishing communities and their leaders Not applicable directly, however, all other things being equal, preference for employment will be given to locals</p>
<p><i>Activity 9: Develop a participatory M&E strategy to monitor the projects progress in achievement of the objectives and against the baseline situation</i></p> <ul style="list-style-type: none"> • Define appropriate indicators to monitor changes in marine biodiversity • Identify opportunities for stakeholder involvement in the M&E strategy and identify specific training needs to be developed in Output 2.3 • Develop a work plan, with appropriate time scales, for implementing the M&E strategy 	<p>RRA. As far as possible, consensus will be sought among administrators, private sector, local communities and other stakeholders</p>
<p><i>Activity10: Finalize the Integrated MPA plan</i></p> <ul style="list-style-type: none"> • Circulate the draft and undertake a wide consultation process based on the stakeholder participation and technical advice from the TAG • Finalize reflecting advice received from all stakeholders. • Distribute a user friendly version of the plan widely. 	<p>RRA. Not applicable directly, but the board, which will formally adopt the plan, will have representatives of both the private sector and the local communities</p>
<p>Output 2.3: Capacity developed and Integrated MPA plan implemented</p>	
<p><i>Activity 1: Develop a training programme specific to staff involved in the running of the MPA e.g. park manager and associated staff, visitor centre staff, and others associated with tourism activities e.g guides etc..</i></p> <p>There will be a focus upon</p> <ul style="list-style-type: none"> • Enforcing regulations and compliance (e.g. rangers are aware of procedures and impose fines consistently) • Managing financial instruments (collection of user fees) • Train in use of GIS and monitoring and evaluation process • Raising awareness of the importance of the marine environment • Working with communities • Training for involvement in M&E activities 	<p>RRA. Rangers and other interested local leaders will be trained</p>

<p><i>Activity 2: Develop capacity specific to local communities to enhance their ability to participate in the integrated MPA, (linked to Output 2.2 activity 4)</i></p> <ul style="list-style-type: none"> • Identify participants • Design capacity development activities • Implement activities <p>There will be a particular focus upon</p> <ul style="list-style-type: none"> • Enhancing their ability to participate in the IMPAM board, • Involvement in zonation; raising awareness of the benefits of set asides, design of set asides, implementation, monitoring fish stocks and adaptive management • Awareness raising of regulatory systems • Training for involvement in ecotourism activities • Training for involvement in M&E activities <p>Progress of participants post training will be monitored to identify the impacts it has had</p>	<p>RRA. Full participation of local fishing communities and their leaders</p>
<p><i>Activity 3: Develop capacity specific to economic operators to maximize their participation and involvement in the integrated MPA</i></p> <ul style="list-style-type: none"> • Identify participants • Design capacity development activities • Implement activities <p>Activities for training may include</p> <ul style="list-style-type: none"> • Working with local communities in ecotourism activities • Ensuring tourism activities are sensitive to marine biodiversity conservation objectives • Benefits and ways of using marine biodiversity as a draw card for tourism activities • Abilities in the role of raising awareness of marine issues with visitors • Training for involvement in M&E activities <p>Progress of participants post training will be monitored to identify the impacts it has had</p>	<p>RRA. Full participation of the private sector operators</p>
<p><i>Activity 4: Develop capacity of key department heads, personnel from local authorities and other public servants involved in the MPA process who would benefit from training</i></p> <ul style="list-style-type: none"> • Identify most eligible potential participants • Carry out a needs assessment to determine main capacity needs and how most impact can be derived • Design and implement training <p>Progress of participants post training will be monitored to identify the impacts it has had</p>	<p>MinFish and the Rodrigues Regional Assembly as well as other relevant stakeholders at Central Government level</p>
<p><i>Activity 5: Trial and adapt community managed no take zones and sensitive resource harvesting techniques</i></p> <ul style="list-style-type: none"> • Develop a community based monitoring system to measure progress • Provide assistance in adaptive management 	<p>Min Fish and RRA with full participation of the local communities and the private sector</p>
<p><i>Activity 6: Operationalize enforcement regulations and adapt if necessary</i></p> <ul style="list-style-type: none"> • Establish and train personnel and ensure provision of logistic support for effective enforcement • Secure necessary equipment • Install and maintain perimeter mooring buoys • Apply penalty system, monitor pilot phase and redesign if necessary 	<p>Min Fish and RRA with full participation of the local communities and the private sector</p>
<p><i>Activity 7: Implement tariff collection system and trust fund</i></p> <ul style="list-style-type: none"> • Establish and pilot user fee collection system, monitor a pilot phase and redesign as necessary • Implement the trust fund system (charter and operational mechanism), monitor a pilot phase and redesign as necessary 	<p>RRA. The private sector, local communities and other stakeholders as appropriate will be invited to nominate trustees to serve on the Board of Trustees</p>
<p><i>Activity 8: Implement the tourism plan</i></p> <ul style="list-style-type: none"> • Build and equip visitors centre • Test visitors code of conduct and adapt accordingly • Establish trails (walking and underwater) 	<p>Consult with local community, Operators in the tourism industry and the private sector</p>

<p><i>Activity 9: Carry out land based activities to reduce pressure on the marine environment</i></p> <ul style="list-style-type: none"> • Work with the anti-erosion project to carry out land-use practices to reduce the sediment load reaching the lagoon • Undertake ecological rehabilitation of Ile Hermitage, Ile au Chat and Ile Plate, such as the removal of exotic vegetation and control of introduced exotics; encourage the nesting of turtles 	<p>RRA. Full participation of local farming communities and their leaders</p>
<p><i>Activity 10: Undertake a risk assessment study and response plan (contingency) for the MPA</i></p>	<p>RRA and key coastal actors The Plan will assign responsibilities, including to local people</p>
<p><i>Activity 11: Implement participatory M&E strategy</i></p> <ul style="list-style-type: none"> • Based on results from Output 2.2 activity 4 (developed by the community) assess changes in socio-economic conditions, resource use and attitudes of local communities • Communicate results to all stakeholders 	<p>A local subcontractor will be commissioned to undertake the assessment which will be based fully on the participation of local communities</p>
<p><i>Activity 12: Adaptively manage the demonstration site based on results of research and monitoring</i></p>	<p>Min Fish and RRA with full participation of the local communities and the private sector</p>
<p><i>Activity 13: Undertake an evaluation of the MPA approach and disseminate lessons learnt</i></p> <ul style="list-style-type: none"> • Evaluate the IMPAM approach and effectiveness • Document the management and monitoring process and lessons learnt to allow replication to other sites. • Distribute to stakeholders, the steering committee and other identified parties important for the replication process 	<p>The private sector, local communities, tourists/visitors and other stakeholders as appropriate will be invited to express their opinion and recommend improvements</p>
<p>Output 2.4: Marine conservation awareness increased</p>	
<p><i>Activity 1: Design awareness raising programmes for the current resource users</i></p> <ul style="list-style-type: none"> • Work with community groups and NGO's to develop and disseminate culturally appropriate outreach materials about the MPA and their role • Work with Government, decision makers, economic operators, local communities to increase awareness of and participation in the MPA (this may involve seminars, outreach materials, workshops etc) 	<p>Min Fish and RRA with full participation of the local communities and the private sector</p>
<p><i>Activity 2: Develop an environmental education strategy for tourists visiting the MPA</i></p> <ul style="list-style-type: none"> • Consult extensively with tour operators to identify their role in the awareness raising strategy e.g. briefing to visitors and divers • Design and develop appropriate interpretative materials for the MPA i.e. maps, information boards, brochures, information stands in the visitors centre, interpretation for trails etc. 	<p>Not applicable directly, except that locals will form part of a "think-tank" to decide on design and content of the brochures</p>
<p><i>Activity 3 Devise appropriate coordination mechanisms at the decision level between government organizations and developers to ensure proposed development considers marine biodiversity guidelines</i></p> <ul style="list-style-type: none"> • Ensure local authorities and land planners participate in the IMPAM board • Establish procedures for the review and approval of the application for a lease of a portion of state land for the construction of an undertaking within the project area by the IMPAM board • Establish procedures for the review of the application for an EIA license for the construction of an undertaking within the project area by the IMPAM board 	<p>Min Fish and RRA with full participation of the local communities and the private sector</p>
<p><i>Activity 4: Implement coastal environment education activities for primary schools in Rodrigues</i></p> <ul style="list-style-type: none"> • Identify mechanisms of involving primary children themselves in the development of the EE activities • Develop user friendly education materials and websites to promote awareness of the marine environment. • Investigate the viability of integrating the activities into the existing education syllabus 	<p>Locals will form part of a "think tank" to decide the contents of the activities</p>

ANNEX VI Monitoring and Evaluation Plan

The details of the Monitoring and Evaluation are given in Section XVI of the document. The following paragraphs describe the additional monitoring and evaluation instruments used for the project.

Ongoing project monitoring of the national components will be provided in accordance with established UNDP procedures and will be provided by the UNDP County Office with support from UNDP/ GEF.

1. Reporting

The Project Management Unit will be responsible for the preparation and submission of the following reports:

(a) *Periodic Status Reports*

As and when called for by the executing agencies, the Steering Committee or UNDP, the Project Manager will prepare Status Reports, focusing on specific issues or areas of activity as stipulated by the querant. The request for a Status Report will be in written form, and will clearly state the issue or activities which need to be reported on. These reports can be used as a form of specific oversight in key areas, or as troubleshooting exercises to evaluate and overcome obstacles and difficulties encountered. The parties are requested to minimise their requests for Status Reports, and when such are necessary will allow reasonable timeframes for the preparation of these Reports.

(b) *Technical Reports*

Technical Reports are detailed documents covering specific areas of analysis or scientific specialisations within the overall project. As part of the Inception Report the TA and/or the Project Manager will prepare a draft Reports List, detailing the technical reports that are expected to be prepared on key areas of activity during the course of the Project, and tentative due dates. Where necessary this Reports List will be revised and updated, and included in subsequent APRs. Technical Reports may also be prepared by external consultants as Final Reports for their technical inputs, and should be comprehensive, specialised analyses of clearly-defined areas of research within the framework of the project and its sites.

(c) *Project Publications*

Project Publications will form a key method of crystallising and disseminating the results and achievements of the Project. These publications will be scientific or informational texts on the activities and achievements of the Project, in the form of books, journal articles or multimedia publications. These Publications can be based on Technical Reports, depending upon the relevance, scientific worth, etc. of these Reports, or may be summaries or compilations of a series of Technical Reports and other research. The TA will determine if specific Technical Reports merit formal publication, and will also (in consultation with the government and other parties and with the help of external specialists and staff where necessary) plan and produce these Publications in a consistent and recognisable format and identity. These Publications will form the most visible public output of the Project, and as such should be prepared and presented to the highest scientific and technical standards.

(d) *Project Terminal Report*

During the last three months of the project the Project Manager will prepare the Project Terminal

Report. This comprehensive report will summarise all activities, achievements and outputs of the Project, lessons learnt, objectives met and missed, structures and systems implemented, etc. and will be the definitive statement of the Project's activities over the five-year duration. 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 activities.

(e) ***Other Publications and Publicity Activities***

In order to ensure international dissemination of project results, ***a high-quality publication of results*** will be prepared, based upon the Project Terminal Report and previous Project Publications. All publications and publicity will clearly carry the GEF logo, as well as the Government and UNDP logos.

2. Monitoring & Evaluation

Final Evaluation

An independent Final Evaluation will take place three months prior to the terminal tripartite review meeting, and will focus on the same issues as the mid-term evaluation. The final evaluation will also look at signs of potential impact and sustainability of results, including the contribution to capacity development and the achievement of global environmental goals. The Final Evaluation should also provide recommendations for follow-up activities. The organisation, terms of reference and timing of the final evaluation will be decided after consultation between the parties to the project document.

Learning and Knowledge Sharing

- ◆ To identify and participate in scientific, policy-based and/or any other networks, which may be of benefit to project implementation through lessons learned.
- ◆ To identify, analyse, share and communicate lessons learned that may be beneficial in the design and implementation of similar future projects. The need to identify and analyse lessons learned is an on-going process, and the need to communicate such lessons is on an as-needed basis, but not less frequently than once every 12 months. UNDP/GEF shall provide a format for categorising and reporting lessons learned.
- ◆ To ensure that the Term of Reference for consultants recruited by the project incorporate mechanisms that capture and share lessons learned through their inputs to the project, and to ensure that the results are reflected in the reporting format described above.

Indicative workplan and budget for Monitoring and Evaluation

Type of M&E activity	Lead responsible party in bold	Time frame
APR/PIR	The Government, UNDP Country Office , Executing Agencies, Project Team, UNDP/GEF Task Manager ³ , and Target Groups	Every year, at latest by June of that year
TPR and TPR report	The Government, UNDP Country Office , Executing Agencies, Project Team, UNDP/GEF Task Manager, and Target Groups	Once every six months, upon receipt of APR
Progress reports	Project Manager	To be determined by Executing Agencies
Mid-term External Evaluation	Project team, UNDP/GEF headquarters , UNDP/GEF Task Manager, UNDP Country Office, Executing Agencies	Third Year.
Final External Evaluation	Project team, UNDP/GEF headquarters , UNDP/GEF Task Manager, UNDP Country Office, Executing Agencies	At the end of project implementation, Ex-post: about two years following project completion
Terminal Report	UNDP Country Office , UNDP/GEF Task Manager, Project Team	At least one month before the end of the project
Audit	Executing Agencies , UNDP Country Office, Project Team	Yearly
Visits to field sites	UNDP Country Office , Executing Agencies	Yearly
Lessons learnt	UNDP-GEF , GEFSEC, Project Team, Executing Agencies	Yearly

³ UNDP/GEF Task Managers is a broad term that includes regional advisors, sub-regional coordinators, and GEF project specialists based in the region or in HQ.

ANNEX VII TERMS OF REFERENCE

Project Steering Committee (PSC)

The PSC will be Chaired by the Chief Commissioner of the Rodrigues Regional Assembly and Vice-Chaired by a representative of the Ministry of Fisheries.

The membership of the Project Steering Committee will ensure broad stakeholder coverage. It will include:

- The Chief Commissioner of the Executive Council of the Rodrigues Regional Assembly as Chair and RRA being the Executing Agency for the activities under Objective 2 of the project
- A representative of the Ministry of Fisheries as Vice-Chair. (Ministry of Fisheries being the Executing Agency for the activities under Objective 2 of the project)
- The Ministry of Economic Development, Financial Services and Corporate Affairs as Government Coordinating Agency
- The Ministry of Environment
- The Albion Fisheries Research Centre of the Ministry of Fisheries
- The Ministry of Local Government and Rural and Urban Development
- The Ministry of Tourism
- The Ministry of Housing and Lands
- The Ministry of Agriculture, Food Technology and Natural Resources
- UNDP as GEF Implementing Agency
- The Mauritius Oceanography Institute
- AHRIM
- ARTO
- The Mauritius Tourism Promotion Authority
- Relevant representatives of the Private Sector and NGOs may be invited to attend PSC meetings whenever required

Operational procedures will be defined at the first meeting and it is expected that sub-committees (such as a technical committee) will be established to facilitate ease of working. The PSC will meet at least once every six months or whenever necessary at the same time as the APR meeting to avoid duplication and ensure broad stakeholder participation. This will be important in ensuring the functionality of the steering committee despite its size.

The PSC will, *inter alia*:

- Provide guidance, advice and support to the project implementers and approve the work plans
- Validate outputs
- Resolve conflicts
- Remove bottlenecks and advise on steps to be taken to move forward
- Recommend actions to be taken at the level of the Cabinet of Ministers or the Task Force as appropriate

However, the responsibility for the day-to-day management of the project will remain within the Project Management Unit.

Technical Advisory Group (TAG)

Technical advice will be provided to the PMU from a Technical Advisory Group (TAG). This will consist of a variety of agencies and individuals who will be selected by the PMU on an ad-hoc basis based on their experience. These agencies and individuals may include:

- The Albion Fisheries Research Centre of the Ministry of Fisheries
- The Fisheries Research and Training Unit of the Rodrigues Regional Assembly
- The United Nations Development Programme
- The Mauritius Oceanography Institute
- Relevant Academic Institutions, NGOs, Private Sector Organisations and individuals having an adequate knowledge on specific issues to be resolved by the TAG

The TAG will not hold regular meetings but relevant members will be called together in sub groups to advise the PMU on specific issues as and when necessary.

The TAG will:

- Advise on specific matters brought to its attention by the PM
- Provide independent technical guidance
- Advise on existing knowledge and best practices if available

ANNEX X KEY REFERENCE MATERIAL

Department of Environment (2001) *Task Force on Islets : Findings and Recommendations*. Department of Environment. Mauritius.

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Gray, John S (1997) *Marine Biodiversity : patterns, threats and conservation needs*. GESAMP (IMO/FAO/UNESCO-IOC/WMO/WHO/IAEA/UN/UNEP Joint Group of Experts on the Scientific Aspects of Marine Environmental Protection) Reports and Studies No.62.

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National Parks and Conservation Service (2001) *Final Draft : National Biodiversity Strategy and Action Plan for the Republic of Mauritius*. Ministry of Agriculture, Food Technology and Natural Resources, in collaboration with UNEP and the GEF. Mauritius.

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pp 969-977.

Russ, G.R. and Alcala, A.C. 1996. Do Marine Reserves Export Adult Fish Biomass? Evidence From Apo Islands, Central Philippines. *Marine Ecology Progress Series* Vol. 132: 1-9.

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UNEP (1998) *Biodiversity Resources in Small Island Developing States*. Report to the Sixth Session of the Commission on Sustainable Development, May 1998.

The following WWW sites were also consulted :

United Nations Development Programme (UNDP), GEF Unit

www.undp.org/gef/

UNDP Biodiversity Planning Support Programme

www.undp.org/bpsp

Global Environment Facility (GEF) official site

www.gefweb.org/index.html

Convention on Biological Diversity (CBD) official site

www.biodiv.org/

The World Conservation Union

www.iucn.org

The World Conservation Monitoring Centre

www.unep-wcmc.org

The Small Island Development States Network

www.sidsnet.org

Ramsar Convention on Wetlands of International Importance

www.ramsar.org/profiles_mauritius.htm

ANNEX XI ACRONYM LIST

AFRC	Albion Fisheries Research Centre
AHRIM	Association des Restaurateurs et des Hoteliers de l'Ile Maurice
APR	Annual Project Report
ARTO	Association Rodriguaise des Tours Operateurs
CBO	Community Based Organisation
CCF	Country Cooperation Framework
CITES	Convention on International Trade of in Endangered Species of Wild Fauna and Flora
TA	Technical Advisor
DEO	Divisional Environment Officer
EEZ	Exclusive Economic Zone
EIA	Environmental Impact Assessment
EIP	Environment Investment Programme
FRTU	Fisheries Research and Training Unit
GDP	Gross Domestic Product
GEF	Global Environment Facility
GIS	Geographical Information System
ICZM	Integrated Coastal Zone Management
IMPAM	Integrated Marine Protected Area Management
IUCN	International Union for the Conservation of Nature and Natural Resources
M&E	Monitoring and Evaluation
MMCS	Mauritius Marine Conservation Society
MUG	Mauritius Underwater Group
MPA	Marine Protected Area
MSDA	Mauritius Scuba Diving Association
MSP	Medium Sized Project
MSY	Maximum Sustainable Yield
NBSAP	National Biodiversity Strategy and Action Plan
NEAP	National Environmental Action Plan
NES	National Environmental Strategies
NEX	Nationally Executed
NGO	Non Governmental Organisation
OP	Operational Programme
PDF	Project Development Fund
PIR	Project Implementation Review
PMU	Project Management Unit
PSC	Project Steering Committee
RRA	Rodrigues Regional Assembly
RUG	Rodrigues Underwater Group
SGP	Small Grants Programme
TAG	Technical Advisory Group
TPR	Tripartite Review Meeting
UNDAF	United Nations Development Assistance Framework
UNDP	United Nations Development Programme