

**PROPOSAL FOR REVIEW**

<b>Project Title:</b>	<b>Island Biodiversity and Participatory Conservation in the Federal Islamic Republic of the Comoros</b>
<b>GEF Focal Area:</b>	Biodiversity
<b>Country Eligibility:</b>	Convention Ratified September 29, 1994.
<b>Total Project Costs:</b>	US \$ 3,279,000
<b>GEF Financing:</b>	US \$ 2,442,000
<b>Country Contribution:</b>	US \$ 242,000
<b>Cofinancing/Parallel Financing:</b>	US \$ 595,000 (UNDP)
<b>GEF Implementing Agency:</b>	UNDP
<b>Executing Agency:</b>	Government of Comoros - Ministry of Rural Development, Fisheries, and the Environment (MDRPE)
<b>Estimated Approval Date:</b>	January 1, 1996
<b>Project Duration:</b>	5 years
<b>GEF Preparation Costs:</b>	None (US \$ 35,000 UNDP)
<b>Government Endorsement:</b>	February 6, 1995

## COUNTRY/SECTOR BACKGROUND/CONTEXT

1. The archipelago of the Comoros, located in the western Indian Ocean to the northwest of Madagascar, consists of four islands of volcanic origin: Grande Comore, Anjouan, Moheli and Mayotte, of which the last one remains under French administration. Endemic species and their habitats are facing severe and unprecedented threats due to human population pressure and unsustainable resource exploitation. With the realization that ecological degradation and resource loss have negatively affected the islands' economy and biological heritage, biodiversity conservation and sustainable use are now high on the list of both the government's and the people's priorities. Given the government's lack of financial resources however, biodiversity conservation will require an innovative, cost-effective participatory approach.
2. The Comoros hold some of the least studied yet most threatened biotas of the Indian Ocean. According to available data, more than 33% of vascular plants are endemic, including 43 species of orchids, (Adjonohoun *et al.*, 1982; Ahama and Mohamed, 1989; CNDRS, 1992, 1993). The status of these species is largely unknown, though many are threatened by deforestation and the rapid colonization of invasive and introduced plant species, whose impact remains to be assessed. Of the fauna, endemism reaches 25% and 75% for nesting avifauna at the specific and subspecific levels, respectively (Louette, 1988; Louette *et al.*, 1988). Contained as well on the list of endemic species are three species of bat, (including the Livingstone fruit bat—*Pteropus livingstoni*) (Carroll, 1993), at least two species of reptiles (Meirte, *in* Ledan, 1993), several dozen terrestrial soft water mollusks, and butterflies (Clark *et al.*, 1992). In the marine environment, of global ecological and scientific interest is the threatened Coelacanth (*Latimeria chalumnae*), known only from the fossil record until rediscovered in 1938 (Fricke *et al.*, 1991). Other globally threatened species found within the archipelago include two species of lemurs, the dugong (*Dugong dugon*), and sea turtles (*Eretmochelys imbricata* and *Chelonia mydas*) (Frazier, 1985; Mortimer, 1993).
3. In addition to their large numbers of endemic species, the islands boast a multitude of habitat types, both marine and terrestrial (Takhtajan, 1986). Terrestrial ecosystems include montane heath above the forest zone (1,800 + m.) dominated by *Phillipia comorensis*, closed and moist high-altitude forests (1,200 to 1,800 m.), closed evergreen forests (600 to 1,200 m.), grass and bush savannas, pioneer plant communities on lava flows, lowland xerophytic forest on the coast, and crater lakes. In addition to their use as habitat for the islands' plant and animal species, such terrestrial ecosystems are of critical importance for migratory avifauna from the Palearctic region. Littoral and marine ecosystems are also remarkably varied, consisting of mangroves, coral reefs (fringing and shoal), and water plant communities. Despite this wealth of varied habitats, there are to date no protected zones in the Comoros, with Boundouni lake on Mohéli only recently being listed in the Ramsar Convention.
4. The wealth of the country's biodiversity stands in contrast to the poverty of its people, with an estimated per capita income of \$520. The population of 484,000 (1994) is growing at an estimated annual rate of 2.7 % (UNDP, 1994). The population, with one of the highest densities in Africa (260 persons/km<sup>2</sup>), is primarily rural and depends largely upon the production of vanilla, cloves, copra and essential oils from ylang-ylang for export earnings. Local food production cannot meet demand and must be supplemented by imported food, including food aid.

5. Population pressure and poverty have led to a vicious circle of over-exploitation, environmental degradation, and further poverty. On land, the rate of deforestation is of serious concern, brought on by increasing fuelwood needs, environmentally-damaging agricultural techniques, and a lack of forest policy and regulation. Between 1950 and 1993, natural forests disappeared at a rate of over 500 hectares annually. If this rate continues, within the next 15 years the forests will have completely vanished, taking with them forest-dwelling species such as the Livingstone fruit bat. This excessive deforestation also accelerates natural erosion, leading to sedimentation of terrestrial soils on coral reefs, decreased soil fertility, the drying up of streams and springs, the destruction of potential tourism sites, and the disappearance of natural habitats and species.

6. Unsustainable resource exploitation extends to the coastal and marine environments. Sand and coral are collected for construction purposes, which weakens coastal habitats (mangroves and beaches) and increases their vulnerability to marine erosion. At sea, traditional fishing techniques, such as poison and dynamite, are rudimentary but destructive and overused, resulting in overfishing along the coast. In contrast, the high seas are largely under-exploited, but local fishermen have neither the means nor the techniques required to tap these resources. Motorization, fish concentrating devices (FCDs) and trolling techniques are accessible only within the framework of village cooperatives or with external funding. Since such assistance is currently unavailable to most fishermen, many fish on the external ridge, catching the occasional coelacanth and endangering the remaining population.

7. Efforts to reverse these trends gained momentum at the beginning of the 1990s, spearheaded by several organizations, including UNDP, UNEP, FAO, and the World Bank, as well as several countries under bilateral arrangements (France, Belgium, Canada, and the European Union). An important step forward in environmental planning in the Comoros came with the UNDP-funded project entitled "Support to National Capacity Building Activities in the Field of the Environment", which was executed by UNESCO and IUCN. This project led to the formulation of a National Conservation Strategy, whose main activities included: 1) the environment and resource assessment conducted in 1993, which served as a basis for the National Environmental Policy; 2) a national workshop in December 1993 with the participation of seven government ministers, representatives from all islands and social sectors, and international agencies. This led to the adoption of the National Environmental Policy by the cabinet, and the establishment of priorities for an Environmental Action Plan (PAE); and 3) the approval of the PAE at the Donors Round Table in Geneva under UNDP auspices in October 1994. The Environmental Action Plan calls for: 1) Knowing and promoting knowledge of the national heritage; 2) Instituting efficient public services, agencies (both central and decentralized); and adopting appropriate legislation; 3) Training specialists and raising environmental awareness among all segments of the population; and 4) Ensuring a concerted, rational management of the national heritage.

8. Within the same period, numerous instruments required for the conservation of the Comoros' natural heritage were created, including: 1) the Interministerial Advisory Committee on the Environment (CICE) and its regional committees (CRCEs); and 2) the General Directorate for the Environment (DGE) with its regional services (SREs) and four main departments—Regulations and Controls, National Planning and Development, Education and Communications, and Applied Research and Natural Resources. Several other legislative, scientific and education initiatives were launched, including 1) ratification of the International Conventions on Biological Diversity, the Law

of the Sea, Wetlands of International Importance (the Ramsar Convention), International Trade in Endangered Species (CITES), the World Heritage Convention, and the Regional Convention for the Protection, Management and Development of the Marine and Coastal environment of East Africa; 2) the adoption in 1994 of the Framework Law for the Environment (LCE), covering in particular the protection of fauna, flora, ecosystems and habitats, the creation of protected zones, the requirement of impact studies, and the creation of the Environmental Management Fund (FGE); 3) the identification of the major species, ecosystems and habitats in the country to ensure the conservation of national biodiversity (with the help of numerous projects from international agencies, research centers, and NGOs); and 4) support to international NGOs to raise awareness and involve village communities in the conservation of the environment in general and biodiversity in particular.

9. The GEF project described herein follows directly from the planning and baseline activities already undertaken, and will support the implementation of the national biodiversity strategy components of the PAE. The project will complement both ongoing and planned projects including UNDP's Capacity 21 initiatives, the World Bank's Agriculture and Environment project, and at a regional level UNEP's Regional Coastal and Marine project, the European Union/Indian Ocean Commissions Coastal Zone and Endemic flora project, and the GEF interagency Western Indian Ocean Marine Conservation Programme. It will assist the government to coordinate the growing number of biodiversity projects within a sound institutional management framework. It will also aim to integrate national priorities with local-level realities, taking advantage of traditional participatory village-level decision-making processes to further engage communities in the sustainable management of the islands' ecosystems and the conservation of their species.

#### **PROJECT OBJECTIVES**

10. The goal of this project is to develop capacity in the Comoros Islands to effectively manage biological diversity, through the implementation of the biodiversity components of the National Environmental Policy (PNE) and the Environmental Action Plan (PAE). All sectors of society, including communities, local NGOs and government institutions, will be included in these efforts. At the international level there will be close cooperation between this UNDP/GEF project and the World Bank's proposed Agriculture and Environment project. The seven project objectives, to be achieved in coordination with the above sectors and agencies, are:

1. To create a participatory institutional framework to oversee biodiversity conservation and management at all levels.
2. To build the capacity for biodiversity management at the local, regional, and national levels.
3. To mobilize financial mechanisms at the national and local levels to ensure the sustainability of biodiversity conservation efforts.
4. To establish a national network of marine and terrestrial protected areas in accordance with the priority sites as nationally identified.
5. To design and implement action plans for the conservation of species with global significance both inside and outside the national network of protected areas.
6. To strengthen public commitment to biodiversity conservation through information and awareness-raising activities.
7. To initiate environmentally sustainable economic development alternatives to reduce pressure on endangered species and degraded ecosystems.

## PROJECT DESCRIPTION

### *Objective 1. Creating a Participatory Institutional Framework for Biodiversity Conservation*

11. While the formulation of a National Environmental Action Plan and the creation of institutional structures such as the CICE to oversee its implementation are signs of substantial progress, much remains to be done. National and regional institutions must gain the capacity to implement their plans, while local organizations must be created and/or supported to manage related village-level initiatives. One of the first steps will be to assist the DGE to carry out its mandate in biodiversity conservation by supporting the designation of an official to oversee Protected Areas and Biodiversity. Then, to build on the structures in place and to encourage cooperation and coordination between the national, provincial and local levels, a National Biodiversity Committee (CNB) will be established, along with Regional Biodiversity Committees (CRBs) for each island. These will provide both advice and coordination for biodiversity activities in general in the Comoros. The CNB will be composed of representatives from indigenous NGOs and research institutions, the Biodiversity Officer from the DGE, and the executive committee of the CICE, with the participation (on invitation) of international agencies/ organizations, and bilateral missions. Similar Protected Area Committees (CAPs), will be created at the local level which will have direct responsibility for managing each protected area. The CAPs will consist of local community representatives, traditional leaders, representatives from the private sector and other concerned local associations, local government officials, and the DGE Protected Areas Coordinator. Regular meetings will be held between local, provincial, and national levels to ensure cooperation and coordination among all parties. Finally, a Project Steering Committee (CDP) will be established specifically for the GEF project and will be composed of members from the CNB, donor organizations (UNDP, UNEP, the World Bank, FAO, etc.) and international NGOs directly involved in project implementation.

### *Objective 2. Capacity Building for Biodiversity Conservation*

12. This part of the project includes activities designed to build the sound institutional capacity and the conducive legislative framework necessary to ensure effective implementation of biodiversity and protected areas activities under the National Environmental Action Plan. First, community, non-governmental and government officials from local, regional and national levels of the DGE, SREs, CNB, CRBs and CAPs will be trained in the selection, delimitation, establishment, planning, management and monitoring of protected areas, as well as in species conservation techniques. In addition, special training will occur at the village level, focusing upon ecosystem restoration, biodiversity conservation, and the rational planning and management of each site's natural resources. Third, special enforcement and protection agents selected by the local communities will be trained in the implementation of protected area operational and management plans. National Gendarmerie, the Maritime Gendarmerie, and the Customs office will also participate in these training activities. Finally, the project will assist the MDRPE to formulate appropriate legislation and policies in biodiversity conservation. These will support the categorization of protected areas and their uses, forest management, etc.

### *Objective 3. Operationalize the Framework Law's Environmental Management Fund to Ensure Financial Sustainability for Biodiversity Conservation Activities*

13. The project will support the operationalization of the Comoros' Environmental Management Fund (FGE), established under the Framework Law on the Environment. This fund will be used to cover some of the costs associated with implementing the law itself, as well as recently ratified international

environmental conventions. The operationalization of this self-sufficient nationally-overseen financial source for environmental activities is especially attractive since external funds for biodiversity projects are short-term. The GEF project will help to develop an appropriate administrative framework and mechanisms for disbursement. It will also offer training to designated management staff charged with disbursing the funds. It is anticipated that monies for the FGE will come from tourism revenue (taxes on air travel, hotel accommodation, etc.), as well as fines and voluntary contributions.

14. While the FGE will fill the financial gap at the national level, local level biodiversity management costs must also find a permanent funding source. The GEF project will establish a system of local revolving funds, supported in part from the national fund and in part from locally-generated tourism revenues (tours and excursions, access fees, etc.). Local income generated through tourism may be directed towards the cost of local level management of the protected areas. Local Protected Areas Committees (CAPs) will manage the revolving funds.

*Objective 4. Establishing a National Protected Areas Network*

15. Given the lack of government resources, actual establishment of the national protected areas network will rely to a large extent on village-level management. The GEF project will assist the government in a number of activities to establish this decentralized approach, including negotiations with local communities and NGOs for the delimitation and the zoning of activities, as well as participatory planning sessions to prepare, adopt and implement individualized management plans.

16. Review of existing biodiversity information and discussions held at the national seminar in 1993 led to the identification and prioritization of the major sites for biodiversity protection. These include two primarily marine and coral reef sites and three terrestrial sites as follows:

- The marine and littoral ecosystems of the southern coast of Mohéli, including Niamoucheli and Boundouni lake (site designated under the Ramsar Convention);
- The peninsula of Binbini and the islet of La Selle near Anjouan;
- The natural forest on the crater of Mohéli;
- The forested region of Karthala on Grande Comore;
- The relict forests on Anjouan.

17. While the above locations have been prioritized for protection and conservation activities, other areas deemed to be important for species protection may be added to the network as additional biodiversity information emerges. This network of locally run national protected areas will complement the village-level protected areas proposed by the World Bank Agriculture and Environment project. Consultative discussions have been carried out with local communities around proposed protected areas by the UNDP mission. The communities agreed to participate in the establishment of protected areas. Exactly what access to resources that the community will give up will be negotiated as part of the establishment of the protected areas. Failure to achieve agreement will lead to withdrawal of GEF financial support for that particular site.

*Objective 5. Action Plans for Species Conservation*

18. While the establishment of a national protected areas network is a crucial first step to protect many of the Comoros' endangered or threatened species, additional conservation activities will be necessary to restore populations of some species to viable levels and individual species actions plans

will be developed for species both within and outside the national protected areas system. Currently three species action plans are already under development:

19. Conservation of the Livingstone Fruit Bat--has been led by two NGOs, the Jersey Wildlife Preservation Trust and Action Comores. Jersey Wildlife has established a captive breeding program for the Livingstone fruit bat in the hopes of strengthening their numbers in the wild (now estimated at less than 400 individuals). Part of the success of this project has come with the public education work done by the indigenous NGO, Ulanga, as well as Action Comoros' data collection project, which provides local residents with additional income.

20. Conservation of the Coelacanth--is being led by the Max Planck Institute with some support from the French government and technical support from the World Bank. Project components include further research on the species and efforts to raise the public's awareness of the species' ecological significance.

21. Conservation of the Scotts Owl-- will involve consolidation of protected sites for nesting, targeted public awareness activities, and, depending on the final outcome of action plan development, reintroduction of individuals.

22. This GEF project will support further work with the Livingstone Fruit Bat, the further development of the Scotts Owl Plan, as well as identification of other critically endangered species of flora and fauna and the preparation of conservation action plans.

*Objective 6. Strengthening Public Commitment*

23. While information on the predicament of endangered species is spreading through local education projects currently being implemented by organizations such as Ulanga and the Peace Corps, such efforts must be mainstreamed to reach a larger audience. The project will support these groups to plan and implement a broader coordinated public awareness campaign to increase the general public's knowledge of the importance of biodiversity and its conservation. The campaign will be aimed at all levels and facets of society, from fishermen and farmers, in particular women who in addition to often being farmers are also responsible for the gathering and utilization of wood fuel and the collection of sand, to school children. In addition the project will assist the Ministry of Education and the DGE and CNDRS to train educators in biodiversity conservation and develop a formal national environmental education curriculum for use in primary and secondary schools. The purpose of the campaign is to build a strong base of popular support for biodiversity conservation in the Comoros and is designed to follow the example of a successful IUCN environmental awareness project carried out on the small Caribbean island St. Lucia

*Objective 7. Initiating Sustainable Economic Alternatives*

24. Biodiversity conservation plans may be implemented, but without economic alternatives for farmers, fishermen and others that depend on terrestrial and marine resources for their livelihood, the prospects for successful conservation are slim. In order to discourage damaging exploitation-intentional or otherwise- of threatened species and fragile ecosystems, and to reinforce the newly established national protected areas network, the project will provide funds to organized community groups seeking to implement economically feasible and environmentally friendly alternative income generating projects. Money will be available to support eco-tourism initiatives, alternative fishing

techniques, stone crushing for construction, and other activities not covered within the World Bank's agricultural development activities. Emphasis will be placed on the development of eco-tourism at the local level, with support provided to the training of guides, production of materials, and the like. Eco-tourism has great potential for development, given the islands' plethora of natural attractions, relative accessibility, supportive national policies, and tourism's general growth in the Indian Ocean region and South Africa.

25. To encourage applications for funding, orientations will be held for community members and groups. Similar "micro-realization" projects are being conducted in the Comoros, in particular by the EU, the French cooperation agency, and the Canadian cooperation agency (CECI). Their potential for success lies in the planning of an orientation program for community members, as well as the design of a user-friendly funding mechanism.

#### **RATIONALE FOR GEF FINANCING**

26. The government of the Islamic Federal Republic of the Comoros ratified the Convention on Biological Diversity on 29 September 1994. The project builds on recent initiatives by the government to establish institutions and instruments for the protection and conservation of biodiversity. The project is in a unique position to assist the government in carrying forward these initiatives by providing support for capacity building, a biodiversity information system, the implementation of conservation action plans, environmentally friendly alternative economic activities, and a well-coordinated environmental education campaign. Concrete mechanisms for establishing and managing a network of national protected areas will be established through institution-building activities, creation of a conducive legislative and policy framework, and the participation of local stakeholders. This project will act as a financial and technical catalyst that will mobilize existing biodiversity plans by producing concrete activities and results.

27. The Comoros biogeographic region is of global significance in view of its high biological and ecologic diversity, its impressive degree of endemism, and the economic potential of many of its genetic resources. But reversing unsustainable environmental exploitation and restoring degraded ecosystems to their full potential is key not only to the preservation of the Comoros' globally significant plant and animal species, but also for the economic development of the archipelago. Without this project and associated parallel activities, population pressure and environmental degradation will leave the islands increasingly impoverished and dependent on food aid and other forms of external assistance to meet their survival needs.

28. Despite the current socioeconomic difficulties, the government attaches great importance to the concept of sustainable human development (Mitsamiouli Declaration, 1994). Unfortunately however, it is unable to provide all the financial resources required for the implementation of the National Environment Action Plan, the Framework Law for the Environment, and the biodiversity strategies contained therein.

#### **SUSTAINABILITY AND PARTICIPATION**

29. Government commitment to this project specifically and to biodiversity conservation generally is strong. The government has demonstrated this by adopting the PNE, preparing the PAE, and



strengthening the administrative structures required for their implementation. The adoption of the Framework Law for the Environment, the ratification of most of the major international environmental conventions, and proof of financial commitment by the setting up of a national Environmental Fund further attest to government commitment. As the project falls within the mandates of the MDRPE, the CICE, and the DGE, it will contribute to the strengthening of these structures, leading to greater sustainability.

30. In addition to the high level of government commitment, there is a growing environmental awareness among rural communities which have mobilized village associations and local NGOs to engage in conservation measures. Indigenous associations and non-governmental organizations, such as *Ulanga*, have successfully carried out numerous environmental initiatives at the grassroots level, and have great potential for further action and coordination. At the village level, the social structure facilitates such grassroot actions. Nationwide, leverage is assured through the *Coordination Nationale des Associations pour le Développement* (CNAD), which is represented on the CECI. The project's participatory approach will allow communities and local associations to be involved beyond the project's lifespan. Communities will be free to choose from among different biodiversity management alternatives, and will be further empowered through training and greater economic opportunities. Furthermore, they will be involved in the project's overall coordination through the CAPs, liaising regularly with the National and Regional Biodiversity Committees and the Project Steering Committee.

31. The economic feasibility of the project is ensured in the long run by the mobilization of the Environmental Management Fund (FGE) at the national level and by the establishment of revolving funds locally. The FGE, provided for in the Framework Law on the Environment, will be used for long-term internal financing to meet the management requirements of the protected areas.

32. The overall project approach is participatory as it depends on local community commitment to establish and manage protected areas. As a Small Island Developing State with limited resources, the Comoros cannot pursue any form of top-down protected area management and expect it to succeed. Project preparation has involved extensive and detailed discussions with local communities, NGOs and government agencies over a two year period.

#### **LESSONS LEARNED AND TECHNICAL REVIEW**

33. Traditional approaches to biodiversity conservation in other areas of Africa which have emphasized central management capacities and exclusionary protection with an absence of local participation, cannot succeed in the Comoros. IUCN has played a major role in the development of this project and has drawn particularly from its extensive technical experience in protected area management and biodiversity conservation in Small Island States, particularly in the Caribbean and the Southern Pacific, as well as the Indian Ocean, Africa and elsewhere. The project's aim--to conserve biodiversity through the implementation of the PNE and PAE--will not be realized unless local representative bodies are given full partnership in the decision-making processes. While there is already an indication of concern and local commitment to the idea of biodiversity conservation, economic pressures may negatively impact the protected areas unless there are viable economic options that reduce pressure on critical biodiversity resources. As stated in Objective 7, the project will support alternative income generating projects proposed by community members, but will

incorporate the EU's experience by conducting orientations and necessary training on the funds and how to access them for community members.

34. Full technical reviews (see Annex 3) of the draft Project Brief were undertaken by Dr. Paula Williams and Dr. Jean-Francois Dupon of the STAP roster. Both reviewers were supportive of the project approach. The main criticisms - the need to increase efforts to ensure local participation and concerns about "enforcement" by central government, reflect a lack of clarity in the draft. This has been amended to emphasize the fact that it is the local communities themselves, through Protected Area Committees (CAPs), who will manage the protected areas. Local enforcement will be carried out through the existing village structures which will call in legal enforcement only when the problem exceeds their own jurisdiction, as for example in the case of inter-island violators.

#### **PROJECT FINANCING AND BUDGET (\$ US - 5 YEARS)**

35. See annex 1.

#### **INCREMENTAL COSTS**

36. The Comoros supports significant and important biological diversity and the government is committed to its protection. However, as a Small Island Developing State with limited resources, particularly given the reduced competitiveness of its commercial crops, a rapidly increasing population, and the recent currency devaluation, the country is not currently able to fully finance the biodiversity conservation activities it wishes to undertake. Its in-kind contribution of personnel, equipment and facilities is estimated to be \$242,000, together with the \$595,000 to be provided by UNDP is considered to represent the baseline - what the government would do on its own to protect biological diversity in the Comoros. The additional costs of ensuring the protection of the globally significant biodiversity of the Comoros are those being sought from the GEF, ie. \$2,442,000, and this represents the full incremental cost. The GEF contribution is equal to the full Incremental Cost and the Incremental Cost represents 75% of the total project cost.

#### *Cost Effectiveness*

37. Given the government's lack of financial resources, cost-effectiveness is essential. The project is cost-effective because it will facilitate coordination and cooperation among and between government departments and local communities at all levels through the development of a participatory institutional framework for biodiversity protection. By coordinating efforts, duplication and redundancy will be avoided. Further, by enlisting the cooperation of local communities and existing government agencies, and by avoiding the establishment of any new institutions or government posts, this project establishes a highly cost-effective approach to protected areas in that it avoids the high recurrent costs that have halted previous efforts to establish a protected areas network in the Comoros. Finally, by establishing local and national mechanisms for financing on-going biodiversity conservation efforts, the project will strengthen the country's self-sufficiency and reduces donor dependency in the long term.

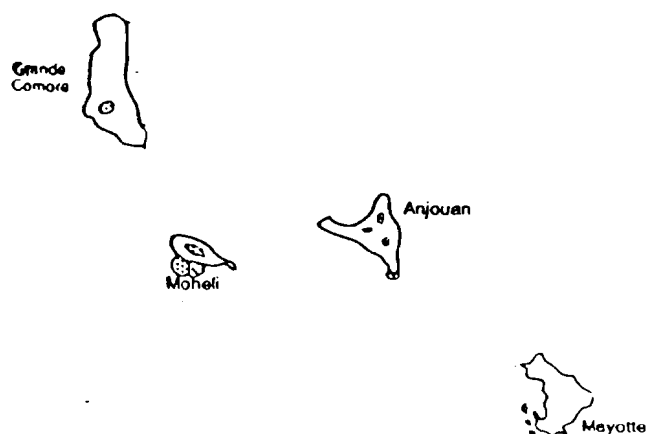
## ISSUES, ACTIONS, AND RISKS

38. The first issue of concern is local resource ownership and reform of the country's land tenure system. This is currently in progress, and promises greater security of ownership at the grassroots level, which may encourage fuller involvement of community members in the planning and implementation of protected area management plans. Secondly however, is the question of economic security, which must be strengthened if the national protected areas system is to be effective. The project will address this issue through facilitating the development of eco-tourism and alternative income-generating activities at the grassroots level. At the national level, the long term continuation of biodiversity conservation in the Comoros rests upon the financial resources of the Environmental Management Fund. Long term efforts however, must also be supported by conducive national policies and programs in the areas of population control, public health, agriculture, and rural development.

## INSTITUTIONAL FRAMEWORK AND PROJECT IMPLEMENTATION

39. The project will be executed and implemented by the Ministry of Rural Development, Fisheries, and the Environment (MDRPE), and more specifically by the General Directorate for the Environment (DGE) and its regional services (SREs), who will take responsibility for establishing the national protected areas network, drafting legislation for their designation, and with village assistance, preparing management plans. The National Scientific Documentation and Research Centre (CNDRS) will provide technical back-up, design the biodiversity information system, and coordinate the participation of other national research institutions and international scientific missions. The Interministerial Advisory Committee for the Environment (CICE), the National and Regional Biodiversity Committees (CNB and CRBs), and the Protected Areas Committees (CAPs) will provide consultation and coordination at all levels of government and society. A Project Steering Committee (CDP) will be set up specifically to monitor and coordinate the GEF project activities and this will include representatives of other closely related ongoing or scheduled projects, in particular the World Bank's Agriculture and Environment project, the UNEP projects, and the European Union.

## Map of the Comoros showing proposed Protected Areas



**Annex 1. Project Financing and Budget (\$ US - 5 years)**

<b>PROJECT BUDGET</b>	<b>GEF</b>	<b>UNDP</b>	<b>Gov't</b>	<b>TOTAL</b>
1. Participatory Institutional Framework	200,000	200,000	30,000	430,000
2. Capacity Building	400,000	295,000	30,000	725,000
3. Mobilizing the FGE and local revolving funds	150,000		40,000	190,000
4. Establishing a National Protected Areas Network	710,000	100,000	40,000	850,000
5. Species Action Plans	300,000		40,000	340,000
6. Public Education	170,000		30,000	200,000
7. Economic Development Alternatives	290,000		10,000	300,000
Sub-total	2,220,000	595,000	220,000	3,035,000
Contingency (10%)	222,000		22,000	244,000
<b>TOTAL PROJECT BUDGET</b>	<b>2,442,000</b>	<b>595,000</b>	<b>242,000</b>	<b>3,279,000</b>

**Budget Showing GEF contribution by Item and Year**

<b>Years</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>Total</b>
<b>Personnel</b>						
International Consultants / 18 months	60,000	50,000	50,000	50,000	60,000	270,000
United Nations Volunteer / 1	30,000	30,000	30,000	30,000	30,000	150,000
National Consultants and others	21,000	21,000	21,000	21,000	21,000	105,000
<b>Operations</b>	50,000	50,000	50,000	50,000	50,000	250,000
<b>Subcontracts</b> (evaluations/audits)	-	30,000	-	40,000	50,000	120,000
<b>Training</b>	80,000	80,000	100,000	70,000	20,000	350,000
<b>Equipment</b> vehicles, boats, communications, crusher, office equipment	100,000	60,000	20,000	20,000	20,000	220,000
<b>Activities</b> Negotiation, inventories, economic alternatives, education, etc.	100,000	150,000	150,000	150,000	80,000	630,000
<b>Administrative support</b>	25,000	25,000	25,000	25,000	25,000	125,000
<b>Sub-Total</b>	466,000	496,000	446,000	456,000	356,000	2,220,000
Contingencies (10%)	46,600	49,600	44,600	45,600	35,600	222,000
<b>Total</b>	512,600	545,600	490,600	501,600	391,600	2,442,000

## **Annex 2: STAP Technical Reviews**

### **Technical review of GEF proposal "Island Biodiversity and Participation: Protected Areas Network for the Comoros"**

#### **1. General review:**

1. The project is specific in outlining institutional arrangements. These arrangements seem to be well established and could prove to be the best chance of success for the project.
2. The earlier establishment of appropriate governmental bodies, authorities, institutional arrangements and regulations to define and implement environmental policies seems to guarantee the general soundness of the project.
3. The GEF project is to be complemented by a variety of other projects currently developed or to be developed shortly by other Agencies in environmental fields or related fields.
4. The project proposal is relevant to global environmental concerns. In the case of the Comoros, the question is: How is it possible to ensure the sustainable development of a very poor country, guaranteeing at the same time the conservation of its rich but threatened Biodiversity? In terms of world Biodiversity, the significance of tropical islands is well established. Islands are unique laboratories of evolution, but fragile laboratories. As such, they deserve a special attention as was confirmed by the Rio Conference in 1992.
5. The priority of the project, generally speaking, is well established by the ecological significance of tropical islands, and particularly in the case of Comoros, thanks to the spectacular specificity of its indigenous fauna and flora (eg. *Latimeria Chalumnae* and *Philippia Comorensis*), be it marine or terrestrial. These species are today badly threatened. I personally visited Comoros thirty years ago and could watch at this time the local damages of human's activities on the magnificent flora of the Karthaba, up to the summit of this volcano. Since then, the population was more than doubled.
6. The second priority is the development. Should the current trend prove impossible to curb, then the sustainable development of this very poor country would be definitely jeopardized, and what is left today of its natural potential would be wiped out forever.
7. Having to comment mostly on the scientific aspects of the project, I have to regret that history of the Archipelago resulted in the separation of Mayotte from what must

be considered as an homogeneous islands group, sharing natural similarity and identical Biodiversity issues that would justify a common policy of conservation and environmental management. As a result of its political status as well as its GNP/C level, Mayotte is not eligible for GEF funding. Let me mention that another striking example of this situation is offered by New Caledonia in the South Pacific. Although one of the most remarkable hot spots of Islands Biodiversity (Endemicity ratio of vascular plants may exceeds 80%), New Caledonia could not be included in the South Pacific Regional Environment Program (SPREP)'s Biodiversity project recently funded by GEF, even though this territory is a member of SPREP.

## **2. Relevance to GEF:**

The proposed project would be an important achievement in the conservation of biodiversity. The Comoros Islands are part of a remarkable regional grouping of archipelagoes from Mascarene to Seychelles, including Madagascar, in terms of insular terrestrial ecology and marine biology. This rich biodiversity is threatened today by population pressure and must be protected. While the production of economic resources is not sufficient to spare the natural potential, marine and land Ecosystems could be rapidly damaged beyond recovery.

Unique endemism of other islands of this part of the world, such as Rodrigues, Mauritius and Reunion were historically ruined by human permanent occupation shortly after being colonized, in less than one century. The striking living environments of the big island of Madagascar itself experienced great damages, although on a longer span of time, until today.

## **3. Objectives:**

Objectives of the project, as defined by the Brief, are relevant and valid. They may however be considered as ambitious. The Project is designed to implement a conservation policy while, at the same time, creating alternative resources for the sustainable development of an Island State plagued by the lack of mineral resources and having to face a dynamic population growth.

Nevertheless, at this stage, the project objectives seem adequately focussed. Points 1 to 5 have reasonable chances to be achieved under two conditions:

1. Involvement and motivation, at every level of institutions and rural communities, should be as strong as expected.
2. Various projects from other funding Agencies on related issues should experience a real success if the project is to develop working connections with them.

One may wonder how Objective 6 could be achieved, given the weakness of the local scientific and technical communities.

On Objective 7, the question is: will the alternative resources obtained from the implementation of the conservation policy, eco-development and eco-tourism projects allow the project to carry on while

fulfilling new needs resulting from the end of environmental abuses (agricultural encroachment on forests, bushfires, destructive fishing) and from demographic expansion? In this respect, the real power and capacity of CNAD is questioned.

#### **4. Approach:**

Approach of the project as defined by the Brief, is clearly formulated. It seems to be appropriate and technically sound insofar that the principles will be accepted by the village communities. A great effort of education is supposed to make a majority of people environmentally conscious. This effort should be facilitated by:

- a. The comprehensive system of central and local justifications.
- b. The apparently strong village communities and Associations.

Concertation, education, as well as the expected success of the related development projects by other agencies should make the definition, promotion and implementation of a conservation policy easier. Training to environmental management will be accepted if the production of alternative resources can reasonably be expected and are produced at an acceptable rate. A few problems seem to have been overlooked:

- a. The question of natural hazards: The Comoros are volcanism and tropical cyclone prone. These risks and their recurrence should be considered in the identification of the protected areas in order to alleviate potential catastrophic damages on unique species or ecosystems. The possibility is however considered by the Brief when the program on the Livingstone Bat is mentioned.

Another risk to be considered is the possibility of damages to protected lowland coastal areas as a result of the sea level rise, should the climatic global change be confirmed in the next century.

- b. Socio-economic issues related to the implementation of the conservation policy should be addressed more closely. Village communities are described as highly coherent, highly disciplined groups, prone to take and implement collective decisions. Has this been ascertained? Nothing is mentioned about the gender role, a crucial point in an Islamic society where women seem to enjoy a special status.

What is known about the rivalry of one island against the neighbor, of villages to be involved in the delimitation of protected areas, of islands against the Grande Comore, of the real - historical - degree of independence, resulting in relative autonomy of an island like Anjouan? Has the role of the Muslim religion, and leaders as possible factors of success (or failure) of the policy of education and awareness be properly estimated?

- c. Finally, one may regret that the question of a possible association of Mayotte, as part of the island group socio-geographical unit was apparently neither discussed nor

explored and solutions proposed, even though they suppose political discussions.

The choice of the pilot-projects is relevant and a recommended approach particularly appropriate for Moheli. Details were missing for Anjouan and Grande Comore in documents provided.

## **5. Background Information:**

It seems to be the weak point of the proposal. Information provided seems to be relevant far from being comprehensive. Flora and fauna lists have to be completed, for instance in the field of Entomology, various orders of marine fauna with possible biological use. No mention is made of the question of possibly damaging introduction of alien species in the indigenous flora or fauna, if introduced species and other plantation species are mentioned with some domestic animals and cultivated foodplants. Which solutions do exist or have been imagined to control and/or eradicate dangerous introductions turned into pests?

About natural hazards, an inventory of risk-prone areas should be conducted prior any identification and limitation of areas to be protected, including coastal lowlands exposed to the effects of global change.

## **6. Funding Level:**

The political status of the FIRC, its economic level (GNP/C=520 US\$), the priorities that were defined at the first conference of the Convention on Biodiversity, and the significance of the natural environment of this country fully justify the funding level of the project.

Funding might be considered to be high. It is actually not significantly higher than the initial funding by GEF of the BD project designed to create protected areas with local community managements in the South Pacific Countries at the beginning of the 90's. This project is supervised by SPREP and 14 countries are involved with a population of about 2 million. Papua New Guinea is funded separately. Us and French territories are excluded. Initial funding was 10 million US\$.

Given the very low level of the Comoros resources, the local contribution is small. One may be surprised, however, by the weakness of the in-kind contribution of the Government (barely more than one third of the sum to be given for personnel seconded to the project). As far as the GEF contribution is concerned, a little more than half of the total sum will go to personnel and activities expenses, a normal ratio. The same observation can be made on Training and Equipments, whose share amount to about one third of the total. It is suggested that training allocation should be beefed up, considering the local needs and level.

The stimulation of the local economy is expected from the implementation of the project in a difficult local context. Central and local government awareness, active participation of the rural communities and associations to be involved are positive factors to be confirmed on the long run. Nothing is said by the Brief about the initial operation of the Fund For Environment (FFE) to be created as a result of the Constitutive Law on Environment (LOE). Nothing more is said of the new resources to be expected from other related projects, be they direct funding or resulting resources.



## **7. Innovation:**

Innovative aspects of the project, in my opinion are:

- a. The initial association of a wide range of appropriate governmental structures to the Project under the supervision of the MRDFE (ICCE, RCCE).
- b. The initial existence of specific institutional framework (CLE, APE).
- c. The initial existence or early planned creation of coordinating authorities or groups at various levels (GDE, RSE, NCP, RCP, NCDSR).
- d. The early and strong involvement of local communities and NGO's awareness of some groups (ULANGA) is encouraging.
- e. The effort to avoid duplications, particularly by considering closely the objectives and expected results of related projects developed by other agencies.
- f. The coordination of the project with Governmental action from other Ministries than MRDFE in the areas of health, population policies, etc..., that may contribute to the success of environmental policies.
- g. A real concern to create operating vertical and horizontal exchanges between people and/or groups involved in the project, be it in preliminary discussions, coordination of actions or decision-making processes.

## **8. Strengths/Weaknesses:**

The project's strength results mostly from the above mentioned innovative aspects (strong administrative and institutional local underpinning), providing that red tape can be reduced to an acceptable level. Decision making levels of the various committees should be clarified in this respect. Weaknesses might be:

- a. Status of the land, revision of the land laws may prove a long and tedious process as usual, because of the intrication of Muslim, colonial and customary rules.
- b. Although it is acknowledged by the Brief, the lack of updated Data and/or partial missing of basic data should not be neglected. What could be produced, in this respect, by the project itself, should not be over estimated (e.g. the benefits quoted by the brief "in terms of the potential of bio-technologies, scientific and medical research"). Taxonomy projects or the research of potentially useful substances in flora and fauna are long and tedious.
- c. A related concern is the weakness of the local scientific community and infrastructure. Even if one considers that the scientific and technical leadership of the local NCDSR will only be effective as mentioned, in collaboration with

international and "and other local research institutions". Very few is said of the later. (see objective 6: "IRDA, IFERE, autres laboratoires" all unidentified. See also p. 18/41, French text, about "les autres organismes concernés par la recherche."). NCDSR's research capacity will most probably have to be improved by the appropriate training of existing (and new) scientists to deal with the tasks resulting from the implementation of the project. Existing and proposed investment (Canadian Museum of Nature, 1 UNV) may prove insufficient to guarantee full scientific soundness.

- d. The definition and collection of biological and socio-economic indicators used to monitor the program of various actions should be clarified. Who will define, who will collect, who will interpret the indicators?
- e. Some of the local conditions, left unmentioned by the Brief might prove to be basic weaknesses and deserve attention:
  - National Integration: The creation of local bodies is to be praised, but great differences (social, economical, even political) still do exist between islands. Local powers might be reluctant to accept central governments' (or what could be perceived as) decisions, given the strong local identity.
  - The question of gender: Comoros women, in a rather strict Muslim society seem to enjoy a higher status than in other Islamic countries. What would be their role in the definition and implementation of the project?

### **Annex 3: Incremental Costs Analysis**

#### **1. Broad Development Goals**

Under the framework of its National Environmental Policy the National Environmental Action Plan of the Federal Islamic Republic of the Comoros, approved in October 1994, calls for:

- (i) Knowing and promoting knowledge of the national heritage;
- (ii) Instituting efficient public services, agencies (both central and decentralized); and adopting appropriate legislation for the environment;
- (iii) Training specialists and raising environmental awareness among all segments of the population; and
- (iv) Ensuring a concerted, rational management of the national heritage.

#### **2. Baseline**

The Comoros started making significant efforts to address its environmental problems, and to ensure the protection of its important biological sites, in the mid 1980's. For example, as early as 1987, an FAO mission examined the possibility of establishing a national marine park to protect the coral reefs along the southern coast of Moheli. However, due to the absence of a suitable policy environment little progress was made until the early 1990's when a UNDP-funded project entitled "Support to National Capacity Building Activities in the Field of the Environment", executed by UNESCO and IUCN, initiated a process leading to the formulation of a National Conservation Strategy. This in turn led to the development and adoption of a National Environmental Policy and the preparation of an Environmental Action Plan.

Within the same period, numerous instruments required for the conservation of the Comoros' natural heritage were created, including:

- 1) the Interministerial Advisory Committee on the Environment (CICE); and
- 2) the General Directorate for the Environment (DGE).

Several other legislative, scientific and education initiatives were also launched, including: 1) ratification of the International Conventions on Biological Diversity, the Law of the Sea, Wetlands of International Importance (the Ramsar Convention), International Trade in Endangered Species (CITES), the World Heritage Convention, and the Regional Convention for the Protection, Management and Development of the Marine and Coastal environment of East Africa;

- 2) the adoption in 1994 of the Framework Law for the Environment (LCE) and the creation of the Environmental Management Fund (FGE);
- 3) the identification of the major species, ecosystems and habitats in the country to ensure the conservation of national biodiversity; and
- 4) support to international NGOs to raise awareness and involve village communities in the conservation of the environment in general and biodiversity in particular.

Within the DGE the Comoros government has assigned one individual to be responsible for the coordination of a system of national parks. Its in-kind contribution of personnel,

equipment and facilities is estimated to be \$242,000, together with the \$595,000 to be provided by UNDP, is considered to represent the baseline - what the government would do on its own to protect biological diversity in the Comoros.

### **3. Global Environmental Objective**

The global environmental objective to be achieved is the protection of some of the least studied yet most threatened biotas of the Indian Ocean including: 43 species of endemic orchids, fauna and nesting avifauna with rates of endemism of 25% and 75% respectively, one Ramsar site, coral reefs included in the recent World Bank/IUCN study of important coral reefs of the world, and various endangered and threatened species including the scientifically unique and world renowned *Coelocanth*.

### **4. GEF Alternative**

The main challenge confronting the design of the GEF project was how to establish a series of protected areas, and protect highly localized species outside these protected areas, in the absence of a central government able to furnish technical expertise, infrastructure, and operating costs to manage a traditional protected areas system. This is the same challenge that had confronted earlier efforts examined by FAO and others and to which a solution had not been found.

The GEF alternative is to establish a national protected area system based on local cooperation and management. Through education, negotiation, and a very limited amount of local funding derived from a national environment fund and ecotourism revenues, local community managed protected areas and endangered species protection programmes are envisaged. Discussion has taken place with the communities concerned who have expressed a willingness to try the approach. A key factor in project success will be the efforts of closely related projects run by the EU and the World Bank which are intended to improve agricultural and resource management practises.

### **5. System Boundary**

The three islands of the Federal Islamic Republic of the Comoros are part of a four island group which includes Mayotte, the latter still being under French control. Politically and economically the activities of the project will affect the whole three island nation in that ecotourism interest should be increased. However, this is not likely to be a very large source of revenues and it will be offset by a reduction in access to certain resources for the local communities living around the five protected area sites and those who find themselves living in an area of major import for a species action programme.

Ecologically the terrestrial systems are limited to the islands, however, the coral reef and marine systems form a part of the larger Indian Ocean. The issues associated with the conservation of the wider Indian Ocean are being addressed through a variety of related programmes, both GEF and non-GEF funded, in particular the Coastal Zone and Endemic Flora project of the Indian Ocean Commission, funded by the EU, the Coastal Areas Planning Project, funded by UNEP, and the Western Indian Ocean Marine Biodiversity Programme, currently under development by GEF (UNDP with UNEP and the World Bank).

## 6. Incidental Domestic Benefits

Incidental domestic benefits will accrue to two groups:

(i) those living immediately around the five protected area sites and those who find themselves living in an area of major import for a species action programme. In compensation for suffering reduced access to certain resources they are likely to find enhanced benefits in terms of support for alternative revenue generating activities through improved agriculture or microprojects as delivered by the French and World Bank programmes. They may also gain very limited revenue earning potential from ecotourism opportunities.

(ii) those individuals employed in the tourism sector which should experience a limited amount of growth.

## 7. Costs

Total project costs associated with establishing a national protected areas system and species action plans are \$3,279,000. Of these the Comoros government will provide \$242,000 while UNDP will provide an additional \$595,000 through its Capacity 21 programme.

## 8. Incremental Cost Matrix

	Costs	Domestic Benefits & Disbenefits	Global Environmental Benefits & Disbenefits
Full Cost of GEF Alternative	\$ 3,279,000	Limited ecotourism benefits nationally and to some local communities. Restricted access to resources for some communities.	Unique species and ecosystems of Comoros maintained.
Cost of Baseline Activities	Government \$ 242,000 UNDP \$ 595,000 Total \$ 837,000	No increase in ecotourism due to absence of attractive features. No limitations on natural resource access for any communities.	Insufficient effort to achieve protected area establishment or species conservation. Unique species and ecosystems largely lost.
Incremental Costs	Proj. Cost \$ 3,279,000 Baseline \$ 837,000 Incr. Cost \$2,442,000	Limited ecotourism benefits nationally and to some local communities. Restricted access to resources for some communities.	Unique species and ecosystems of Comoros maintained.

## 9. Agreement

The agreements on levels of resource access limitations for each local community will be negotiated with each community as a part of establishing the protected areas or species action plans.

**Acronyms**

CAP	Protected Areas Committees
CBD	Convention on Biological Diversity
CDP	Project Steering Committee
CICE	Interministerial Advisory Committee for the Environment
CNAD	National Coordination for Development Associations
CNB	National Biodiversity Committee
CRB	Regional Biodiversity Committee
CRCE	Regional Advisory Committees for the Environment
DGE	General Directorate for Environment
EU	European Union
FAO	Food and Agriculture Organization of the United Nations
FGE	Environmental Management Fund
GEF	Global Environment Facility
GIS	Geographic Information System
IFERE	Institute for Training, Education and Research
IRDA	Institute for for Agricultural Research and Development
IUCN	World Conservation Union
LCE	Framework Law on Environment
MDRPE	Ministry of Rural Development, Fisheries and Environment
PAE	Environmental Action Plan
PNE	National Environment Policy
RFIC	Islamic Federal Republic of the Comoros
SRE	Regional Environmental Services
UNDP	United Nations Development Programme
UNESCO	United Nations Education, Scientific and Cultural Organization
UNICEF	United Nations Children's Fund
UNV	United Nations Volunteers
WHO	World Health Organization
WTO	World Tourism Organization
WWF	World Wildlife Fund

### **Associated Programs**

**UNDP**, in cooperation with **UNESCO** and **IUCN**, supported national environmental programming between 1992 and 1994, which led to the creation of CICE, the structuring of the DGE, the training of personnel, the adoption of the Framework Law on the Environment, and the adoption of several international environmental conventions. The planned **UNDP Capacity 21** project, entitled "Sustainable Development and Environmental Management Capacity", will build on these foundations. Its main activities will include assisting the government of the Comoros in the creation of CRCEs, the internal reorganization of the DGE, the strengthening of SREs, and the training of associated management staff.

**UNEP** is executing the Comoros component of the EAF5-EAF6 project "Protection and Development of Marine and Coastal Areas in East Africa", which is being implemented by **FAO**. In conjunction with **WFP**, **UNEP** is also implementing *in-situ* and *ex-situ* training activities, concerning more specifically coastal area management and GIS use. **UNEP** is also launching a second phase of its "Eastern African coastal and marine environment resources database and atlas project" (EAF/14). The projects first phase focused only on Kenya but the tested methodologies for summarizing and distributing information on the coastal resources in a format accessible to planners and decision makers, as well as the wider community, will be extended to other Indian Ocean countries including the Comoros in 1995 and 1996. The project will involve the establishment of a GIS.

**FAO** is implementing projects, both with its own funds and with **UNDP** support, regarding forest conservation in connection with changes in agricultural practices. The initial activities under this project consisted of surveys and assessments of the remaining forest formations.

**The World Bank**, in cooperation with the **FAO Investment Centre**, is currently planning an "Agriculture-Environment" project, whose main activities will include institutional support for the MDRPE, agricultural rehabilitation, environmental protection through the creation of village protected areas and the design and implementation of an environmental information system. Once the diagnostic phase is complete, the project itself should begin in 1996.

**The European Union** is implementing various environmental and biodiversity conservation projects in the Comoros, including:

- A project supporting the Indian Ocean Commission countries within the framework of the seventh European Development Fund (FED/COI/ENV). This project, which began in April 1995, has two components: coastal and marine environment, and terrestrial environment and endemic flora. Its aim is to set up databases on the coastal and marine environments (ecology and oceanography, socioeconomic assessment of biological resource use, pollution and degradation of the flora) by networking with **UNEP's** Infoterra system. The project is aimed at ensuring the conservation of flora biodiversity at the genetic level through the creation of regional botanical conservancies.
- A fisheries project, to be completed in 1995, but with plans to continue. One of the outputs--the creation of fish concentrating devices (FCDs)--alleviates fishing pressures on the reefs and on the external shoal, thereby indirectly reducing the catches of coelacanths.
- A funding project, which set up monies available to local communities for the implementation of micro-projects supporting the conservation and sustainable exploitation of natural

resources. The funds made available were largely under-utilized, as the beneficiaries did not have sufficient capacities to design, submit, and manage such projects.

France, through its cooperation mission and the Caisse française de développement (CFD), has been involved for several years in an integrated rural development project on the island of Mohéli. This project combines several types of activities to support the environment, in particular agroforestry for soil conservation and streamflow control. This project is due to end in 1995, but the feasibility of a new phase is currently under discussion between France and the Government of the Comoros.

Two Canadian organizations are involved in conservation activities, namely:

- The Canadian Museum of Nature, which signed a cooperation agreement in Nassau in 1994 with the Comoros to produce a "National Monograph on Biodiversity" and which represents one of the obligations undertaken by the Comoros under the Biodiversity Convention.
- The *Centre canadien d'études et de coopération internationale* (CECI), which is currently implementing an integrated community development program, and which has former experience in the Comoros with a project in environmental education. Key to its success in the country has been its participatory approach at the village level.

The Jersey Wildlife Protection Trust and Fauna and Flora International, under agreement with CNDRS, have been conducting a project aimed at the conservation of the Livingstone fruit bat (*Pteropus livingstonii*) for several years. The species is endemic to the Comoros and is threatened as a result of the destruction of its high altitude forest habitat. Other organizations participating in the project include the University of Bristol and another British organization, Action Comoros. Action Comoros is also involved in activities concerning other species (butterflies, lemurs).

The Max Planck Institute in Germany has conducted missions to the Comoros to study the coelacanth (*Latimeria chalumnae*). It is collected baseline data and is preparing a plan for the conservation of the species.

The Peace Corps is providing volunteers for educational programmes, including environmental education. They are participating actively in awareness raising among the village populations.

CARE International, due to financial problems and other priorities, just recently terminated its operations in the Comoros.