

MADAGASCAR
Third Environment Program Support Project

Project Appraisal Document

Africa Regional Office
AFTS1

Date: February 3, 2004 Sector Manager/Director: Richard G. Scobey Country Manager/Director: Hafez M. H. Ghanem Project ID: P074235 Lending Instrument: Specific Investment Loan (SIL)	Team Leader: Martien Van Nieuwkoop Sector(s): Forestry (90%), Renewable energy (10%) Theme(s): Biodiversity (P), Environmental policies and institutions (P), Other environment and natural resources management (P)
Global Supplemental ID: P074236 Sector Manager/Director: Richard G. Scobey Lending Instrument: Specific Investment Loan (SIL) Focal Area: B - Biodiversity Supplement Fully Blended? Yes	Team Leader: Martien Van Nieuwkoop Sector(s): Forestry (100%) Theme(s): Biodiversity (P) , Environmental policies and institutions (P)
Project Financing Data	
<input type="checkbox"/> Loan <input type="checkbox"/> Credit <input checked="" type="checkbox"/> Grant <input type="checkbox"/> Guarantee <input type="checkbox"/> Other:	
<u>For Loans/Credits/Others:</u>	
Amount (US\$m):	
Financing Plan (US\$m):	Source
	<div style="display: flex; justify-content: space-between;">LocalForeignTotal</div>
BORROWER/RECIPIENT	29.20 0.00 29.20
US: AGENCY FOR INTERNATIONAL DEVELOPMENT (USAID)	19.50 8.20 27.70
FRANCE, GOV. OF (EXCEPT FOR MIN. OF FOREIGN AFFAIRS-MOFA)	5.70 2.40 8.10
SWITZERLAND, GOV. OF (EXCEPT FOR FOFEA)	3.60 1.50 5.10
IDA GRANT FOR POOREST COUNTRY	28.20 11.80 40.00
GERMANY: KREDITANSTALT FUR WIEDERAUFBAU (KFW)	8.80 3.60 12.40
UN DEVELOPMENT PROGRAMME	4.40 1.90 6.30
NON-GOVERNMENT ORGANIZATION (NGO) OF BORROWING COUNTRY	7.80 3.30 11.10
GLOBAL ENVIRONMENT FACILITY	6.50 2.50 9.00
Total:	113.70 35.20 148.90
Co-financing for GEF Supported Activities: US\$135.40 million	
Borrower/Recipient: GOVERNMENT OF MADAGASCAR Responsible agency: MINISTRY OF THE ENVIRONMENT, WATER AND FORESTS MINISTERE DE L'ENVIRONNEMENT ET DES EAUX ET FORETS Address: Antananarivo Contact Person: Sylvain Rabotoarison, Minister Tel: 261-20-22-25999 Fax: 261-20-22-30693 Email: minenv@dts.mg Other Agency(ies): OFFICE NATIONAL DE L'ENVIRONNEMENT Address: Antananarivo	

Contact Person: Jean Chrysostôme Rakotoary, Directeur Général

Tel: 261-20-22 25999

Fax: 261-20-22-30693

Email: jcrakoto@pnae.mg

Association Nationale de Gestion des Aires Protégées

Address: Antananarivo

Contact Person: Guy Suzon Ramangason

Tel: 261-20-22-41538

Fax:

Email: angap@dts.mg

P074235 Estimated Disbursements (Bank FY/US\$m):

FY	2004	2005	2006	2007	2008	2009			
Annual	2.00	8.00	8.00	8.00	8.00	6.00			
Cumulative	2.00	10.00	18.00	26.00	34.00	40.00			

P074236 (GEF) Estimated Disbursements (Bank FY/US\$m):

FY	2004	2005	2006	2007	2008	2009			
Annual	1.00	1.50	1.50	2.00	2.00	1.00			
Cumulative	1.00	2.50	4.00	6.00	8.00	9.00			

Project implementation period: 2004-2009 (five years)

Expected effectiveness date: 06/01/2004 **Expected closing date:** 05/31/2009

OPCS PAD Form: Rev. March, 2000

A. Project Development Objective

1. Project development objective: (see Annex 1)

The Government of Madagascar (GoM) adopted an ambitious 15-year investment program in 1989 known as the Madagascar Environment Action Plan (PAE or NEAP) with the following goal: ‘natural resources are conserved and wisely utilized in support of sustainable economic development and a better quality of life’. The Plan was to be executed in three phases (EP I/ II/ III), each with discrete objectives.

The first phase of NEAP was initiated in 1991 in the face of a limited conservation baseline with the support of a broad coalition of bilateral donors (Germany, France, Switzerland, USA), international agencies (WB-IDA, UNDP) and NGOs (Conservation International, WWF, Wildlife Conservation Society). Activities in this phase aimed at nurturing policy and regulatory reform and creating the basic institutional framework for protected area management and for ecologically compatible development. The second phase of NEAP, initiated in 1997, expanded the field coverage of conservation activities, while further strengthening institutional capacities, and developing the policy framework to improve conditions for sustainability.

The third and final phase of NEAP (EP III)—which will be supported through this project—aims at improving the protection and sustainable management of critical biodiversity resources at the field level, mainstreaming conservation into macroeconomic management and sector programs and establishing sustainable financing mechanisms. IDA/GEF financing is geared towards assisting the GoM in the implementation of selective elements of EP III, for which two subsidiary Development Objectives have been specified:

- Development Objective 1: The biodiversity and renewable natural resources of representative eco-regions is conserved and managed on a sustainable footing with active multi-stakeholder participation; and
- Development Objective 2: The framework for sustainable environmental management is further strengthened through the incorporation of said management objectives into public policy making and investments.

The project is complementary to, and builds upon, support provided by other partners and co-financiers under a sector-wide approach.

2. Global objective: (see Annex 1)

The global objective of the project is to contribute to the preservation of the quality of regional and global commons through improved natural resources management and biodiversity protection in critical ecological regions, defined as national protected areas and their corresponding buffer zones and corridors.

Madagascar is one of 17 recognized megadiversity countries that collectively harbor up to three quarters of the world’s biological diversity. The Island has been identified as one of the highest global biodiversity conservation priorities, owing to its combination of high diversity and endemism, and the degree of anthropogenic threat to its ecosystems. Although Madagascar occupies only about 1.9% of the land area of the African region, it is home to about 25% of all African plants and has more orchids than the entire African mainland. Its rich fauna diversity is unique; remarkably Madagascar harbors endemism at the higher taxonomic level (genus and family level). It is a repository for 5 endemic botanic families and 5 endemic primate families. Of the 280 bird species recorded (204 species breed in Madagascar), 110 species are listed as endemic. Of the 346 reptile species recorded, 314 are endemic. Only two other eco-regions in the world, i.e., Caribbean and Meso-America, can match Madagascar’s diversity in reptiles.

The ecosystems of Madagascar include fragments of the once extensive lowland humid tropical forests in the east, the still widespread, mid-altitude humid tropical forests centered on the eastern escarpment, high altitude mountain ecosystems, the greatly diminished range of dry forests in the west and the highly unique spiny forests of the southwest. The southern portion of the country extends into the temperate zone. WWF has identified 7 critical Madagascar eco-regions, ranking amongst the richest globally on account of their biodiversity and high endemism. These include Madagascar Forests and Shrublands, in the Moist Broadleaf forest biome in the East, Madagascar Dry Forests in the West, Madagascar Spiny Thicket in the South and South West, Madagascar Mangroves, and the West Madagascar Marine System, including coral reefs and sea grass beds (WWF Global 2000). These ecosystems, with their irreplaceable fauna and flora are highly vulnerable to anthropogenic pressures, and have suffered considerable degradation since the Island was first settled by humans some 1,800 years ago. Pressures on remaining ecosystems, particularly fragile terrestrial habitats have accelerated over the past 50 years. Absent substantial and sustained management intervention, there is a real risk that numerous endemic species will eventually be forced into extinction, leading to the forfeiture of unique global environmental benefits.

3. Key performance indicators: (see Annex 1)

The following key performance indicators have been identified for the project.

- Increased Proportion of terrestrial, marine and forest ecosystems under conservation and sustainable management: (i) 6 million ha of natural forests; and (ii) 100,000 ha of coastal zone and marine resources
- Increased areas of ecosystems included in the national protected areas system managed by ANGAP: from 1.468.111 ha in year 1 to 2.253.848 ha in year 5;
- Increased Protected areas management efficiency index (from 41% to 60%)
- Rate of degradation of forest and wetland resources is less than half the 1993-2000 degradation rate.
- Operationalization of the Malagasy Protected Areas and Biodiversity Foundation and endowment of the Trust Fund to be managed by the Foundation.
- Harmonization of sector specific legislation, environmental legal framework and international conventions through 18 strategic EIAs
- Improved voice of communes in PA management through operational CROs in 27 protected areas and 80% of CROs complying with their rights and obligations as defined in PA management plans.

B. Strategic Context

1. Sector-related Country Assistance Strategy (CAS) goal supported by the project: (see Annex 1)

Document number: 27063-MAG **Date of latest CAS discussion:** November 18, 2003

The proposed project is folded into the new CAS for Madagascar (page 23). The project is consistent with the main goal of the CAS aimed at assisting Madagascar in accelerating poverty reduction. Following the close linkage between poverty and environmental degradation, the CAS recognizes that "Madagascar's unique biodiversity resources offer interesting revenue generating potential, which, if realized, could contribute to the reduction of poverty as well as the conservation of these resources". To unleash potential in this arena, there is a need to set access to biodiversity resources on a more rational and transparent footing as well as to develop revenue generating from non-extractive forest products and environmental services, of which eco-tourism, hydrological services, carbon storage and non-timber forest products are the most promising." Consequently, the need to "continuing to place the environment at the center of our strategy" is listed as one of the five guiding principles, derived from the lessons and experiences of the previous CAS, that are at the heart of the new strategy. Following this principle, the proposed CAS lending scenario makes room for the Third Environment Program Support Project (FY04) as an operation that

"seeks to improve forest management, to protect biodiversity and to put in place sustainable financing mechanisms for the environment". In line with sector-specific goals, it is expected that the project would reduce poverty by contributing to broad-based economic growth, sustainable natural resources management and improving governance. The CAS recognizes that "considering that Madagascar is a mega-diversity country, this project is also of crucial importance to attain the sustainable environmental management objectives as specified under the MDGs". The proposed project components are in line with the orientation specified in the CAS. Similarly, the CAS monitoring indicators related to the environment are based on the impact indicators of the proposed project.

In view of Madagascar's eligibility for grant financing in FY04 under IDA's Thirteenth Replenishment in the poorest country category, the CAS proposes to use the entirety of the country's IDA13 grant allocation for 2004 for the proposed third environment project. Doing so reflects the project's capability as an instrument to effectively address issues of rural poverty by building on the positive linkages between poverty and environment, particularly through the generation of hydrological benefits. At the same time, with Madagascar being a mega diversity country, it recognizes that the project would generate global benefits associated with improved biodiversity conservation. In line with this notion, the project proposes to use Grant resources for ensuring proper management of Madagascar's protected areas system and bringing forest and biodiversity assets outside protected areas under effective conservation regimes. In line with existing IUCN norms, the latter reflects Madagascar's commitment to bring 10% (up from 3%) of its territory under effective conservation regimes, as expressed by the President of the Republic at the World Parks Congress in Durban in September 2003,

1a. Global Operational strategy/Program objective addressed by the project:

In recognition of the global significance of the country's biodiversity and the need for its urgent protection, the GoM was the first government in Africa to elaborate a NEAP. Madagascar ratified the Convention on Biological Diversity on March 4th 1996. The proposed project (EPIII) directly addresses all three of the main objectives of the Convention on Biological Diversity – conservation of biodiversity through protected areas, conservation through sustainable use of biological resources and equitable sharing of benefits derived from the use of biodiversity.

The proposed project addresses the objectives of the GEF Operational Programs (OP) 1: Arid and semi-arid zone ecosystems, OP2: coastal, marine and freshwater ecosystems and OP3: forest ecosystems, in the biodiversity focal area. Overall, the project meets the eligibility criteria for GEF funding by taking an ecosystem approach to conservation management. In particular it is consistent with the objectives of the three OPs by supporting threat remediation activities at discrete PA sites of high global significance, and promoting the broad-based participation of local communities resident on lands adjacent to project supported PAs in site management activities. Furthermore, the project will facilitate the development and adoption of sustainable natural resource management practices for wild natural biodiversity resources in PA support zones. This will be facilitated through pilot activities aimed at removing barriers to sustainable resource utilization in ecosystems where gaps in know-how are foreclosing integrated management.

The project is also aligned with GEF Strategic Priority #1: Catalyzing Sustainability of Protected Areas and, Priority # II: Mainstreaming biodiversity in production landscapes and sectors. GEF support will make a significant contribution to strengthening the national system of protected areas, building on the success of PA management support under EP II, and accompanying sustainable use management demonstrations. The key objective is to consolidate and strengthen management of the PA system with a view towards assuring its long-term sustainability. The project will, *inter alia*, provide support to ensure

the sustainable utilization of biological resources, to protect the ecological integrity of critical landscapes buffering protected areas, to build capacities for assuring stakeholder participation and to strengthen benefit sharing arrangements. The proposed activities are consistent with eligible activities under this Strategic Priority, including broad-based capacity building, strengthening community-government-private sector partnerships for PA management, and identifying and strengthening financial mechanisms to assure sustainability. The project also focuses upon integrating the conservation priorities and sustainable use in forestry, tourism, agriculture and fisheries by catalyzing mainstreaming through support for institutional capacity building of government, policy and institutional structures. Activities have been carefully designed to maximize the catalytic role and impact of GEF investment (whether through the WB or UNDP), and to avoid diffusion in effort.

2. Main sector issues and Government strategy:

The reality of rural Madagascar is characterized by widespread, extreme poverty and significant pressure on the country's unique biodiversity and natural resources. Seventy percent of the population is poor. Close to 80% of the poor live in rural areas. Their livelihoods almost exclusively depend on agriculture and related natural resource-based activities, suggesting an intimate linkage between poverty and natural resource degradation.

Root Causes of Natural Resources Degradation

The root causes of natural resources degradation are many and often inter-related. First, low and stagnant productivity in combination with a rapidly growing population generates pressures for agricultural expansion through forest conversion under slash-and burn production systems. At the same time, environmental degradation, and associated top soil erosion, is reducing agricultural productivity and increasing rural poverty. Second, further contributing to natural resource degradation are poorly defined property rights and a breakdown in traditional regulatory mechanisms caused by increasing human migration within the country. Third, more productive agricultural practices that could have helped mitigate natural resource destruction have been hampered by the lack of: (i) basic infrastructure; (ii) market integration; (iii) resource inputs; and (iv) adequate access to credit. Fourth, the widespread use of charcoal and fuelwood for domestic energy purposes is another root cause of deforestation. It is estimated that 85% of domestic energy needs are covered from these sources, which translates into an annual demand of about 10 million tons of wood. Fifth, poorly regulated commercial exploitation of forests for timber, due to weaknesses in central policies and institutions, and a failure to invoke the cooperation of all stakeholders, particularly those at local and regional levels, also contribute to deforestation. Sixth, poor governance in the forestry sector has been conducive in generating a climate under which illegal logging and species collection practices could flourish. Transparency International rated Madagascar 98th out of 102 countries on its corruption perception index in 2002; under the new Government this has improved to 88 in 2003. Seventh, weak institutional capacity, especially so at the field level, seriously hampers surveillance and law enforcement efforts. The budget of the Forest Department is about US\$400,000 per year for which it is called upon to manage about 6-7 million ha of natural forests as well as to effectuate forest and bush fire control in the entire country. The situation in the rural sector was further exacerbated by the political crisis that brought the country to a halt during the first semester of 2002. Terms of trade of the rural sector have been affected negatively by falling producer prices and rising consumer prices of basic life necessities. In addition, the political crisis has increased already mounting governance problems surrounding the management of natural resources as evidenced e.g. by illegal exports of endangered species, illegal logging and lack of transparency regarding the allocation of fishing rights.

As a result of these factors, it is estimated that Madagascar lost about 12 million ha of forest between 1960

and 2000, effectively reducing forest cover by 50 percent in just 40 years. Following the launch of the National Environment Action Plan in the late 1980s, deforestation rates have since declined from over 400,000 ha/year in 1975-1985 to around 100,000 - 200,000 ha/year during the 1990s. Based on satellite imagery, it is estimated that the total area of natural forest in Madagascar declined from 9.4 million ha in 1993 to 8.5 million ha in 2000, reflecting a national average rate of deforestation of about 0.86 percent per year.

Achievements and Challenges

In order to reduce natural resource degradation trends, a national environmental action plan was launched in the late 1980s, which is generally considered one of the most ambitious and comprehensive environmental programs to date in Africa. The NEAP was given legal power by adopting the National Environment Charter and the National Environmental Policy in 1990 (Law 90-033, December 21, 1990). The Plan, recognizes the link between environmental protection and economic development and includes six elements: (i) protecting and managing the national heritage of biodiversity, with a special emphasis on parks, reserves and gazetted natural forests, in conjunction with the sustainable development of their surrounding areas; (ii) improving the living conditions of the population through the protection and management of natural resources in rural areas with an emphasis on watershed protection, reforestation and agro-forestry; (iii) promoting environmental education, training and communication; (iv) developing mapping and remote sensing tools to meet the demand for natural resources and land management; (v) developing environmental research capacities for terrestrial, coastal and marine ecosystems; and (vi) establishing mechanisms for managing and monitoring the environment. The NEAP was designed from its inception as a fifteen year investment program divided into three five-year phases. The first five year phase aimed at creating a proper policy, regulatory and institutional framework so as to generate the conditions for genuine country ownership of the environmental agenda which prior to the NEAP used to be set and driven by the donor community. The second phase of the NEAP aimed at consolidating the programs initiated under the first phase by putting the established national institutions firmly in the driver's seat. The third phase, which is currently being launched and supported by the proposed project, is focused on consolidating the varied past efforts and establishing sustainable financing mechanisms for the environment.

Major achievements of the NEAP up until to date include: (i) the enactment of enabling legislation for the protection of country's natural resources and the promotion of proper environmental management; (ii) the set-up of environmental institutions (such as the park service ANGAP) for the implementation of environmental activities and programs; (iii) the development and implementation of community-based approaches for natural resources management; (iv) the emerging evidence of positive field-level impacts in terms of reduced deforestation rates; and (v) the establishment of a platform for sustained donor support and coordination for the environment in Madagascar.

At the same time, as indicated in the Bank's Rural and Environment Sector Review (2003), there are numerous areas where the NEAP could improve its track record. The application of policies and regulations remains a challenge due to weak institutional capacity and serious governance problems, particularly in the forestry sector. Resources under the NEAP have been disproportionately invested in parallel structures at the central level, while too little has been invested to strengthen institutional capacity on the ground. Lack of rigorous priority setting has also led to a situation in which NEAP tends to drift somewhere between conservation and rural development, sometimes seeking to fill gaps that other programs such as the PADR now seeks to fill. Consequently, there is the notion that the operational programs of the NEAP have spread themselves too thinly, thereby contributing to the widespread feeling that more could have been achieved than actually has been. The challenge for mainstreaming of the

environmental agenda is reflected in: (i) the relatively modest budget allocations for the sector; (ii) the existing limited knowledge and awareness of the Malagasy population concerning environmental issues; and (iii) the slow development of market mechanisms for the valuation of environmental services.

This latter point is of particular importance as the third phase of the NEAP is specifically geared towards putting in place sustainable financing mechanisms for the environment. Progress in this field has been limited. Park entrance fees now cover about 7% of ANGAP's costs. ONE has been able to generate some revenues from environmental permit related fees, but these are insufficient to even cover variable costs. However, economic analysis shows that biodiversity conservation, eco-tourism and watershed protection benefits associated with investing in the environment in Madagascar along the lines proposed under the third phase of the NEAP exceed management and opportunity costs. Consequently, the potential to put in place sustainable financing mechanisms for the environment does exist and the challenge is to find ways and means to increase benefit capture of the environmental institutions concerned. In view of international experience, there is however a need to be realistic about the immediate revenue generating capacity of sustainable financing mechanisms.

Government Agenda and Strategy

Conservation as Guiding Principle for Natural Resources Management. The government of Madagascar has undergone a substantial restructuring in January 2003 that is highly significant for the rural / environmental sector. Key changes have been: (i) integration of economic programs, land use planning, transport and public works into a single 'super-ministry' under the vice Prime Minister; (ii) combination of Agriculture with Livestock and Fisheries into a single ministry; and (iii) combination of Waters & Forests with Environment into a single ministry. These changes are important to the rural/environment sector for various reasons: (i) the fusion of economic programs, land use planning, transport and public works will facilitate an integrated approach to national spatial development planning and represent an important opportunity for the sector to incorporate rural and environmental dimensions into national spatial planning; (ii) the combination of agriculture, livestock and fisheries regroups the 'food producing' sectors and should facilitate a greater emphasis within the fisheries sector on food security, rural development and poverty reduction as a complement to the established orientation on generating revenues from fisheries exports and licenses; and (iii) fusion of forests and water with environment may be seen as a radical move to create a transformed forests sector oriented towards conservation and biodiversity as opposed to extractive production. This should greatly facilitate the development of conservation programs outside protected areas, improved sector governance and the efficient capture and distribution of benefits from biodiversity. In line with this observation, the President of the Republic announced at the World Parks' Congress in Durban in September 2003, that Madagascar, in line with IUCN norms, would increase the area under effective conservation arrangements from 1.5 million ha to 6.0 million ha. Doing so reflected the GoM overall strategy adopted under the PRSP which was finalized in July, 2003, calling for ensuring environmental sustainability as specified under the Millennium goals so as to consolidate Madagascar's unique position as a mega-biodiversity country. Indicators of the PRSP reflect that success of the strategy will among other be measured against progress in reducing the actual deforestation rate, thereby underscoring that sustainable natural resources management is regarded as a strategic national interest.

Renewed commitment to NEAP. The Government recognizes that the strategic approach adopted at the time of the NEAP remains valid today; that is: (i) the time scale of decades; (ii) the process of learning and adapting from stage to stage; (iii) mainstreaming environmental concerns as far as possible into sectorial policies and investments; (iv) creating and maintaining a system of conservation areas which are ecologically representative; (v) ensuring sustainable management of Madagascar's unique terrestrial, coastal and marine ecosystems; and (vii) targeting complementary development activities to reduce

pressures on the natural resources base. For this purpose, the Minister of the Environment, Water and Forests has prepared a Letter of Environmental Policy that confirms the GoM's commitment to the NEAP, while at the same time providing an actualized context of the Plan that was put in place more than ten years ago. The Letter lays out an overview of the environmental problems that Madagascar faces today, indicates achievements as well as lessons learned from NEAP's previous phases, presents a sector specific vision for 2015, confirms the design of EP-III, specifies key program implementation principles, details how monitoring and evaluation of results will be achieved, and identifies critical factors for success. The following key messages can be distilled from the Letter. First, although considerable progress has been made, there is a need for sustained efforts to improve biodiversity conservation and sustainable natural resources management. Second, to improve program effectiveness it is recognized that there is a need for greater focus on those themes and geographical areas where the NEAP has a clear comparative advantage, while improving coordination with other sector programs. Third, to set the stage for better results on the ground, the need for greater institutional presence on the ground along with effective participation mechanisms for local stakeholders and civil society is emphasized. Fourth, to improve institutional efficiency and accountability, the Letter stresses the need for result-based implementation mechanisms as well as the need for dedicated efforts to improve sector governance. Fifth, the Letter makes the point that law enforcement efforts are a necessary complement of providing incentives and support to improve sustainable natural resources management.

Parallel to the GoM's commitment to the NEAP is also its renewed support for the Rural Development Action Plan (PADR), which was launched in 2001. This Action Plan provides the framework for the implementation of the country's rural development policy and coordinates policies and public investment programs as pursued by the participating sector ministries. The GOM is committed to pursue implementation of the PADR as, among other, reflected by its intention to strengthen the role of Regional Working Groups for Rural Development (GTDRs). These Groups, which include representatives from grassroots membership organizations, ONGs, private sector, local government and regional offices of the sector ministries, have been set-up as regional champions to translate the overall orientations of the Plan into concrete actions that are adjusted to the specific agro-ecological conditions of each of the distinguished 23 agro-ecological regions in the country. The importance of the PADR for the NEAP is that the focus of the PADR on increasing rural productivity through agricultural systems intensification, allows the NEAP to focus itself more on core environmental functions and natural resource conservation in areas of high priority biodiversity. Doing so would reduce excessive dispersion of activities as was the case under previous phases of the NEAP. Close coordination between the PADR and NEAP is of crucial importance to achieve the objectives of both, which is the reason why the MAEP and MinEnvEF have signed a specific protocol for this purpose.

Overall Focus on Governance Provides Unique Sector Opportunity. The Government's intense focus on improving governance, provides a unique window of opportunity to deal with this issue in the forestry sector in a manner that was not possible previously. In line with this, the Ministry of the Environment Water and Forests (MinEnvEF) has successfully moved forward in carrying-out an Action Plan to improve governance that was agreed under the previous GoM. This Action Plan included among others, the following actions: (i) publication of permits so as to increase transparency; (ii) transfer of 70% of the permit fees to the regions so as to provide better incentives for law enforcement to local stakeholders; (iii) cancellation of permits with fee payment arrears; (iv) measures to enforce fauna management rules adopted under CITES and publication of CITES monitoring reports; and (iv) the use of GPS units to better delineate permit boundaries. As part of the project preparation process, the MinEnvEF has sustained its efforts to improve governance by: (i) keeping collection quota for CITES and non-CITES species at zero in 2003; (ii) banning the export of non-processed precious wood; (iii) cancelling permits of non-paying holders; (iv) effectuating a moratorium on the allocation of new forest exploitation permits; (v) carrying-out

an intensive forest fire and slash-and-burn control program; and (vi) launching initiatives for the auto-regulation of private sector operators. It is agreed that these measures pave the way for the implementation of structural measures to improve governance in the sector that have been included in the design of the program in support of the third phase of the NEAP.

Streamlined Sector Institutional Framework for Greater Effectiveness on the Ground. The newly created MinEnvEF has quickly moved forward in developing an institutional vision that reflects the notion of conservation as the guiding principle for natural resources management in Madagascar. In line with this vision, it is envisaged that the MinEnvEF will structure itself in a manner that will enable it to carry out core public sector functions related to policy making and regulatory measures. Core operational responsibilities will be concentrated in specialized semi-public institutions for respectively: (i) protected areas management; (ii) forest ecosystems management; and (iii) application of environmental impact legislation. To improve synergy with other programs notably in the transport, agriculture, tourism, and energy sectors, the institutional structure provides for strong institutional coordination capacity. Last, but not least, the structure includes specific arrangements to operationalize support for sustainable natural resources management at the commune level through the creation of a dedicated funding mechanism.

3. Sector issues to be addressed by the project and strategic choices:

Building on the Government's strategy and agenda, the project would assist the GOM in addressing the root causes of natural resource degradation in those themes and geographical areas where EP-III has a clear advantage. In line with this notion, the project would specifically address the following sector issues: (i) need to expand area under effective conservation management; (ii) need to improve governance in the forestry sector; (iii) need for focused complementary efforts that provide alternatives to forces that drive pressure on natural forests; (iv) need to put in place a streamlined institutional structure and increase capacity; (v) need to align conservation agenda with economic interests through sustainable financing over the long term. The project would not specifically address sector constraints that stand in the way to increase agricultural productivity through production systems intensification, as it is felt that these are better addressed under the PADR through dedicated operations such as the Bank financed Rural Development Support Project and EU financed rural development activities in the provinces of Fianarantsoa and Toliara. Although envisaged under the third phase of the NEAP, the project would not support addressing urban pollution problems as it is felt that doing so would spread the operation too thinly, thereby jeopardizing its effectiveness and impact.

Expansion of Area under Effective Conservation Management

Protected Areas. The Madagascar Protected Area Management Authority, ANGAP, has built a solid reputation as a relatively effective manager of the country's system of national parks and reserves. Through effective donor coordination under earlier phases of NEAP, ANGAP has developed into a stable, organized and functional organization, which is responsible for the management of 46 protected areas covering roughly 3% of the country's total area and 15% of its existing forests. The network of Madagascar's protected area system is composed of 18 National Parks, 5 "Integral" Nature Reserves and 23 Special Reserves. Nevertheless, the PA system faces a number of challenges that will be addressed under the project. *First*, not all ecosystems are currently adequately represented in the national protected areas system, particularly coastal zone and marine ecosystems and also some key terrestrial ecosystems. Consequently, there is a need to improve the representativeness of the system under EP III. ANGAP has prepared a five-year action plan for the management and expansion of the existing Protected Area System, the "Plan GRAP", to be implemented between 2001 and 2006. The action plan provides a comprehensive overview of the existing PA network, and the proposed expansion program. The expansion program is

organized by priorities specified for each of the six ecoregions and the three transitional zones characterizing the country. ANGAP is progressively taking direct management responsibility for protected areas that were initially being managed by service providers, either on a stand alone basis or as part of conservation projects. *Second*, although the management of protected areas is relatively effective, there is room for improvement. ANGAP's current IUCN-based index for effective management stands at 41%. Areas that specifically require attention include : (i) strengthening management and implementation capacity at the field level; (ii) establishing more effective measures to reduce encroachment; and (iii) developing tourism potential. *Third*, relations between ANGAP and neighboring communities are generally good. However, they tend to be maintained at the level of consultation, thereby falling short of providing decision-making power to local stakeholders whose life one way or the other is affected by the creation of PAs. Consequently, there is a need to lift participation of local stakeholders up to a higher level by exploring and strengthening mechanisms for joint decision-making between communities and ANGAP, while strengthening community based natural resource management systems that provide a conservation-compatible means of assuring local livelihoods.

Natural Forests. Most of Madagascar's biodiversity occurs in forest areas. While 13% of the area of these forests is located within a relatively well-managed protected area network, the vast majority of forests (national gazetted forests, and a mosaic of non gazetted forests in the rural landscape) are unmanaged or poorly managed, constituting a de-facto free access resource. In line with the Government's objective to increase the area of natural forest under effective conservation arrangements, a two-pronged approach to move away from the actual situation of de-facto free access would be pursued. *First*, there would be an aggressive move towards the creation of so-called conservation sites, covering an area of about 4 million ha by the end of EP-III. Conservation sites are delimited zones with a legal status for which the classification is based on ecological and socioeconomic criteria. They are intended to provide a complement to the network of more formally protected areas. Their existence is considered an ecological and economic necessity given their importance for the conservation of biodiversity, their current and future importance for eco-tourism and for the hydrological services they provide for people, agriculture and industry. Along these lines, the potential management goals for conservation sites have been identified as the following: (i) to complete the representativity of national network of protected areas; (ii) to conserve species only found outside the national network; (iii) to conserve viable populations of keystone wide-ranging species; (iv) to contribute to connectivity and genetic bridges between protected areas; (v) to conserve important habitats; (vi) to provide essential ecological services; and (vii) to provide economic benefits. *Second*, based on the lessons and experiences generated during the second phase of the NEAP and with the PPIM (Energy 2) in Mahajanga, where a woodfuel masterplan was developed, the management transfer of forest resources to communes would be scaled-up significantly. Doing so would imply, as envisaged under EP-III: (i) a simplification and streamlining of existing management transfer procedures as recognized under the current GELOSE (*Gestion Locale Sécurisée*) and GCF (*Gestion Communautaire Forestiere*) legislation; (ii) elaboration and diffusion of step-wise guidelines of which a start was made in February 2003 through the publication of a guide for simplified land use management plans (*Plan d'Amenagement et de Gestion Simplifie*); and (iii) integration of identification and definition of income-generating activities in the management transfer process.

Governance

Over the years Madagascar has been able to streamline environment into many of the sector policies, and develop institutions capable of dealing with many important aspects of environmental governance. However, a widening disconnect has emerged between stated policies and regulations, and the capacity to monitor and ensure enforcement of the new frameworks on the ground. Lack of transparency and efficiency in particularly the forest sector and to a lesser extent the application of MECIE legislation has

been a constant, yet unresolved, topic of debate during the second phase of the NEAP. Based on this experience, EP-III departs from an explicit recognition that poor governance and law enforcement is undermining costly ongoing environmental management programs, and discourages most qualified long-term investors from doing business with Madagascar in the field of biodiversity and environmental services. In this context, the following issues of transparency, accountability and improved governance will be addressed. *First*, improved forest control to ensure adequate application and enforcement of decrees defining forest products exploitation in and around sensitive areas, and restricting the export of logs of high value timbers. *Second*, the set up of a transparent system for the issuance of new cutting permits along with a system of checks and balances that include the participation of ONE, regional and local authorities and community-based organizations, as required by existing MECIE legislation and forest policy. *Third*, improving the management of the national and regional forestry (FFN and FFR) funds, by ensuring a transparent monitoring of the collection system, establishing a mechanism for disbursing funds at all levels, merger of the AFARB (action en faveur de l'arbre) and FFN/FFR accounts such that they are all used to support sustainable forest management. *Fourth*, the creation of independent forest observatories (OSF) at the national and regional levels; these observatories would contribute to the monitoring of forest resources' management and the collection of forest taxes. In addition, there is a need for better communication to inform communities, civil society, etc. of their rights with respect to forestry management. *Fifth*, the need to significantly modify the size of forest permits (land units where regulated commercial exploitation takes place) so as to stimulate the emergence of more accountable forest investors that work with regulatory agencies in public-private partnerships arrangements. *Sixth*, better control of slash-and-burn practices and forest fires through comprehensive enforcement campaigns in collaboration with communal fire control committees. *Seventh*, improve compliance with MECIE legislation by lowering transaction costs through the establishment of a one-stop-shop in ONE.

Complementary Efforts to Reduce Pressure on Natural Forests

Woodfuels constitute for more than 85% of Madagascar's total energy balance and are an important deforestation factor. The latter is particularly the case in the provinces of Mahajanga, Toliara and Antsiranana where woodfuels are produced from natural forests. In light of this, it no surprise that deforestation rates of spiny forests located in the Southern and Western regions of Madagascar are the highest among all types of existing forest ecosystems. Given that woodfuels are expected to continue to play an important role to meet Madagascar's energy needs for a long time to come, there is a need for measures that reduce the pressure of woodfuel use on natural forests. In this context, the project would address the following issues. *First*, it would aim to introduce measures that would make the production of woodfuel more efficient by supporting promotion of more sustainable forest management practices and more efficient carbonation techniques. *Second*, it would aim at reducing demand for woodfuels through the development and dissemination of more efficient end-use cooking stoves. *Third*, it would aim at reducing demand for woodfuels through the development and promotion of substitution fuels. *Fourth*, it would aim to increase the available forest area for woodfuel production through support for reforestation programs associated with food/cash-for-work programs that are aimed at establishing communal forest reserves (*Reserves Forestiers pour le Reboisement*).

Sector Institutions

Under the previous phases of the NEAP a large and relatively complex institutional framework for environment has evolved, including: (i) ONE; (ii) ANGAP; (iii) ANAE; (iv) SAGE; and (v) CNE. The Ministry of the Environment was created rather late in the process as the overarching authority on environmental affairs. Unclear division of responsibilities between ONE and the Ministry, coupled with the weak institutional capacity of environmental units in sector Ministries has seriously hampered efforts to

mainstream the environment into public policy making and investment decisions. The Evaluation of the World Bank's Assistance for Madagascar's Environment Programs (2000) questioned the sustainability of the established intricate institutional latticework at the central level and noted an inherent paradox with the principal operating logic of these institutions which states that natural resources can best be managed through demand-driven, decentralized management. Following this evaluation, a process of institutional consolidation has been set in motion under which SAGE was spun off from ONE and ANAE was put at somewhat more arms length from the NEAP.

With the merger of the Ministry of Water and Forests and the Ministry of the Environment into a single Ministry of Environment, Water and Forests (MinEnvEF) in January 2003, the stage has been set for further consolidation of the institutional sector framework that would lead to: (i) appropriate division of responsibilities between the Ministry and ONE which is subsequently reflected in the functional structure of both the organizations; (ii) clarification of the division of responsibilities between the MinEnvEF and environmental units in the sector Ministries and the development of a capacity building program for these units that reflects the agreed division of responsibilities; and (iii) definition of the division of roles and functions between the central and decentralized levels aligned with a corresponding institutional consolidation program for the central and an institutional strengthening program for the decentralized level. To move the institutional structure into that direction an institutional development plan has been prepared as part of the project preparation process which was subsequently endorsed by the GoM. The project would support the transition of the actual structure to the envisaged institutional framework in the following areas: (i) strengthening presence of MinEnvEF at the field level; (ii) facilitating the establishment of specialized institutions responsible for the operational aspects of core environmental functions; (iii) adjusting MinEnvEF's structure in line with policy-making and regulatory functions; and (iv) enabling effective interaction between MinEnvEF and environment units located in other sector ministries.

Sustainable Financing

One of the principal objectives of the NEAP's third phase covering the period 2002 to 2007, aims at reinforcing the accomplishments of the previous phases and thus providing the basis for sustainable financing of the environmental program in Madagascar. Sustainability over the long-term will be secured and is based upon four pillars, namely a cost reduction strategy and action plan, an increased management efficiency index, sufficient fund raising to contribute to the endowment and leveraging donor financing. Recognizing the urgent need for biodiversity conservation that is acknowledged as one of the country's most valuable assets, the GoM has made efforts in allocating funds to this sector. However, it is also recognized that the country for the foreseeable future will not be able to generate sustainable funding for environmental protection purposes. Hence, the GoM is requesting continuing international support. In order to reduce dependency on donor financing for the environment, the project would launch a massive effort to increase revenue generating capacity of environmental services in Madagascar. In this context, the project would facilitate the development of the eco-tourism industry through expansion and improvement of park infrastructure and facilities. A start would be made with the development of reforestation initiatives for carbon sequestration purposes. Financing of the protected areas system would be set on a more sustainable footing by operationalizing the Malagasy Protected Areas and Biodiversity Foundation. EPIII may also support exploring the development of revenue generating capacity associated with bioprospecting rights in the context of the recently established Alliance of Megabiodiversity Countries. Last but not least, the project would put in motion policy initiatives that are aimed at improving positive and reducing negative environmental externalities that are associated with the way taxes are raised and at the levels they are set as a mean to put financing of the environment on a more sustainable footing.

GEF incremental assistance will help focus upon mainstreaming the lessons learnt and capacities, into

government, civil society and private sector initiatives and, further consolidating policy reform and capacity building. All efforts will be geared towards consolidating country-led actions that would continue the relay after EP III. Donor assistance to individual projects and programs will likely continue after EP III, but will then be part of a country-led and coordinated programmatic framework, reflecting the consistent commitment of government, civil society and private sector to environment management.

C. Project Description Summary

1. Project components (see Annex 2 for a detailed description and Annex 3 for a detailed cost breakdown):

In order to translate the third phase of the NEAP into operational terms, the MinEnvEF along with donors and other stakeholders have elaborated and agreed on a comprehensive investment program (EP-III). Following a participatory process, a sector-wide approach has been developed comprising the following elements: (i) Letter of Environment Policy that provides the political umbrella and conceptual orientation; (ii) Results Framework that specifies objectives, results and activities, along with corresponding impact, output and input indicators; (iii) agreed Financing Plan with participating donors based on commitments to achievement of specific outputs defined in the Results Framework; (iv) M&E framework under which all stakeholders are committed to define success of their contributions based on agreed impact indicators in the Results Framework; and (v) narrower definition of program intervention areas to reflect the need for greater focus and avoid dispersion of activities.

The project would support the third phase of the NEAP, commonly called EP-III. The agreed Results Framework of EP-III is presented in Annex 1A. The goal of EP-III is stated as follows: “natural resources are conserved and wisely utilized in support of sustainable economic development and a better quality of life”. It distinguishes seven results that are stated as: (1) sustainable development activities are developed; (2) forest ecosystems and water resources are sustainably managed; (3) sensitive ecosystems are conserved and made valuable as protected areas and “conservation sites”; (4) the potential of coastal and marine ecosystems is sustainably managed; (5) a positive change in behavior vis à vis the environment is observed; (6) the financial basis for sustainable financing of rational management of natural resources and the environment is established; and (7) better environmental policies and governance are developed;

IDA and GEF financing in support of EP III have been carefully programmed and focused to maximize the catalytic role of interventions and assure sustained impact. Activities have been designed taking into account the planned investment in baseline activities by other donors. Accordingly, the proposed project to be financed by IDA and GEF would support selected elements of EP-III by focusing on results (1), (2), and a number of activities under (5), (6) and (7), that will be grouped under the heading of "environmental mainstreaming. Based on this orientation, the project is organized into three components, including: (i) forest ecosystems management; (ii) protected areas management; and (iii) environmental mainstreaming. GEF financing administered by the Bank would be concentrated upon component (ii): protected areas management.

IDA/GEF financing would not focus on result (1) of the EP-III Results Framework as it is felt that the on-going IDA-financed Rural Development Support Project could assist the EP-III in this field. IDA/GEF financing would also not cover result (4) as it has been agreed that GEF financing administered by UNDP would be concentrated in this area.

Component 1: Forest Ecosystem Management (IDA: US\$ 18.0 million)

1.1. Governance (US\$ 6.0 million): IDA financing would support formulation and implementation of (i) forest zoning, (ii) forest control and (iii) setting up of an information system. IDA financed activities would improve governance in the forest sector by strengthening the concession rights allocation framework and fee collection system and strengthening institutional arrangements for regulatory enforcement, including support to the Forest Observatory (*Observatoire du Secteur Forestier*, OSF). The project would contribute to the enhancement of forest management at the local level by supporting the formulation and implementation of forest zoning and management plans; activities are expected to reduce threats linked to agricultural practices in the forest sector, decrease illegal forest exploitation by commercial firms and community-enterprises and improve fire management.

1.2. Conservation sites (US\$ 4.0 million): IDA financing would support the creation and management of conservation sites, setting up economic and regulatory standards and other economic and regulatory tools. Creating conservation sites would allow both the preservation of biodiversity outside the network of protected areas and the maintenance of watersheds. These conservation sites will contribute towards achieving the 2015 goal of maintaining the forest cover at the current level and will focus specifically upon areas outside the PA network to ensure better geographic coverage and a holistic approach to ecosystem conservation. The project would put in place guidelines and provide financial and technical resources for management of the sites.

1.3. Management transfer (IDA: US\$ 4.5 million): The key focus of this activity would be the transfer of forestry management rights to local communities under GELOSE/GCF contracts and maximizing financial benefits for the communities under these contracts guided by sustainable management plans. In particular IDA would fund efforts to accelerate and scale-up such transfer of forestry management rights to provide a utilitarian incentive for improved management. It will also involve improvements to biodiversity product market chains associated with management transfers (using enhanced carbonization techniques under management transfers included in the household energy related activities).

1.4. Reforestation (IDA: US\$ 1.0 million): IDA would provide funding for the creation of Land Reserves for Reforestation (*Réserves Foncières pour le Reboisement* or RFRs) at the level of communes through the Support Funds to Environment Management of Communes (FAGEC). It would support reforestation and forestry management activities for carbon sequestration purposes and where possible associate itself with food/cash-for-work programs. Activities will also contribute to develop ecological corridors and reduce threats linked to agricultural practices in the forest sector, decrease illegal forest exploitation by commercial firms and community-enterprises and improve fire management.

1.5. Household energy (IDA: US\$ 2.5 million): Activities have been designed for improving the efficiency of energy production (charcoal from biomass). In particular, IDA financing would support an increase in the technical output of carbonization, decrease in charcoal consumption through scaling-up the use efficient stoves that are eco-labeled and, producing & promoting substitution fuels. IDA would support the introduction of improved fuel wood management utilization practices as well as communication and extension activities aimed at inducing local populations to discontinue unsustainable woodfuel production practices. The project would put in place guidelines and provide financial and technical resources for management of the sites. New financial instruments to uncover and capture the economic benefits of conservation will be established, including recreational uses, hydrological services and carbon markets. IDA would support the promotion of energy alternatives through organizing pilot activities in order to convince private sector actors to invest in such activities.

Component 2: Protected Area System Management (IDA: US\$ 13.5 million, GEF: US\$ 9 million)

The Protected Area network of Madagascar managed by ANGAP aims to consist of 36 Management Units (Unité de Gestion - UG), corresponding to 46 Protected Areas. This component is concerned with supporting 22 UG, corresponding to 27 Protected Areas. The GEF will lend support to 15 UG, while the remaining 7 will be supported by IDA (refer to project files and Annex 16 for sites description, and selection process). The component includes the 4 following sub-components.

2.1. Reducing Pressures, Capacity building, Awareness and Civil Society involvement around selected PAs (IDA: US\$ 0.79 million; GEF: US\$ 0.46 million): IDA and GEF would aim to increase participation of local communities in the management of protected areas by strengthening and expanding the mandate of the Regional Orientation Committees (CROs), setting up of COGES/CODEAP (village associations) and their capacity building and partnerships with NGOs. It would also provide management, technical and planning assistance, and on the ground support to the program of activities aiming to promote alternative actions for reducing pressures around selected protected areas through (i) actions having direct links with pressures and with conservation targets; (ii) operationalization of decentralized management principles recommended in the manual for management of PRDEAP funds (park entrance fees).

2.2. Enhance complementarity value, alignment and eco-regional representativeness of the Protected Area System (GEF: US\$ 1.10 million; IDA: US\$ 0.90 million): GEF and IDA resources will finance the implementation of the COAP and the Plan "GRAP" (five-year action plan for management and expansion of existing PA system), aimed at ensuring the representativeness of ecosystems under the national protected area system. Support will be provided to integrate conservation management planning in PAs and support zones at an eco-regional level, such as reclassification of certain PAs, identification and creation of new PAs, and reconfiguration of the boundaries of certain PAs, where warranted to reflect current land uses and ensure ecological integrity. Specifically the activities will be aimed at: (i) status change of 4 protected areas, (ii) reclassification of boundaries of 6 existing protected areas; (iii) creating 1 terrestrial PA and 2 marine parks; and (iv) re-delineating 9 protected areas.

2.3. Conservation Management programs to consolidate the PA system (GEF: US\$ 4.58 million; IDA: US\$ 3.17 million): The project through IDA/GEF will finance (i) Ecological monitoring and application of measures for conservation of terrestrial and marine ecosystems; (ii) surveillance and control; (iii) setup of conservation infrastructure and operationalisation of zoning; and (iv) targeted research programs aimed at developing a better understanding of practices for biodiversity conservation and management. In order to improve conservation management of the protected area system, a focus will be placed on prioritizing actions and developing referential documents. The investments in the PAs will be guided by a participatory management plan, a need-based threat analysis and an extensive stakeholder participation plan. Support is expected to more specifically focus upon activities to remove barriers to conservation and management activities such as capacity building support, planning, targeted research programs, zoning and a contribution to surveillance and control, but also to finance investments to infrastructure and equipment.

2.4. Sustainable use of PAs System and improve governance of ANGAP (GEF: US\$ 2.40 million; IDA: US\$ 1.60 million): IDA/GEF would provide support to improve recreational facilities including critical visitor infrastructure and services, revise tourism fees to capture the consumer surplus and increase revenues from park entrance fees to stimulate the local (eco)-tourist industry and strengthen guiding services. To improve guide services and harmonize guide status under a standard partnership contract, the following activities will be carried out: open the market for guide services to regional and national service providers and by inciting competition in order to raise local service provision; involve the private sector in tourist guide training and service provision service provision; involve the private sector in guide based training and service provision through the creation of partnership and collaboration with the Ministry of Tourism in the licensing of professional guides. Project support will focus upon efforts to overcome

barriers to the advancement of eco-tourism in existing and new PA sites selected for GEF/ WB support. It is expected that focus will be on 6 Management Units (UG), corresponding to 8 protected areas. These barriers include: absence of suitable tourism products, including trails and interpretation facilities; lack of articulation of PAs in tourism markets; and development of protocols and infrastructure to engender responsible tourism. This support is expected to increase visitation and gate fee returns, contributing to an improvement in financial sustainability. This sub-component will also provide financing for technical assistance and capacity building to further improve ANGAP's governance by focussing on the development and implementation of a cost reduction action plan, improving financial and administrative management, and providing strategic and technical support to prioritize the investments (in particular related to ecotourism) in alignment with the PA management plans and the new business plans, and supporting quality reviews of the implementation of the M&E system designed during preparation. Support will also be provided to develop and implement the replication plan.

2.5. Endowment of the new Malagasy Protected Areas and Biodiversity Foundation for long term funding (GEF:0; IDA:US\$ 7.50 million): This activity aims to strengthen the national financial capacity to support the PA system over the long-term. The key mechanism will be to contribute to the endowment of the dedicated trust fund to finance a portion of the long-term operational costs of PA management in Madagascar. The Foundation, to be created under the new Malagasy Foundation Law, will manage the conservation Trust Fund. The Foundation is expected to be created by June 2004, and established initially with pledged seed money from the Government, WWF and CI respectively, and will receive also support from KfW. Other donors have also already expressed strong interest in the Trust Fund. An additional GEF contribution to match IDA, WWF, CI and others contributions towards an endowment fund will be requested at mid-term review once specific benchmarks and a track record of the Trust fund has been demonstrated. Key benchmark indicators include effectiveness of the Board; quality of the Executive Secretariat of the Fund; effectiveness of Asset manager; disbursement conditions of the investments; commencement of grant making activities and; effectiveness of the institutional structure to carry out defined activities under the Trust Fund. The objective of the project is to generate US\$ 50 million by the end of EP III. IDA will contribute US\$7.5 million towards the endowment that will be managed by the Foundation.

Component 3: Environmental Mainstreaming (IDA: US\$ 8.5 million)

3.1 Environmental Information, Education and Communication (IDA: US\$ 1.5 million) As far as Environmental Information is concerned, the project will support ONE in the operationalization of Environmental MIS (TBEs) particularly to the regional level, thereby establishing a system of environmental information. As far as Environmental Education and Communication is concerned, IDA will finance a selective number of activities that reflect the comparative advantage of the institutions that are associated with the EP III, including (i) the preparation of educational materials; (ii) providing relevant environmental information on-line and developing environmental information packages and training materials for opinion-makers, EP III target communes as well as the mass-media, (iii) support the DGE in carrying-out environmental training and dissemination activities.

3.2. Environmental Legislation, Policy-Making and Regulations (IDA: US\$ 2 million): IDA financing will be available to enable the DGE to carry out a total of 18 strategic environmental assessment (SEAs). This will permit the DGE to ensure the coherence of sector legislation with the environmental legal framework as reflected in both national legislation as well as Madagascar's participation in international conventions and treaties. It will also support the establishment of a unit in the DGE to carry-out upstream environmental analysis of proposed legislation and policy measures. Last, but not least, it would provide capacity building and institutional strengthening for the development of carbon finance transactions in

Madagascar, and other sustainable financing mechanisms for the environment in Madagascar, such as other payments for ecological services.

3.3. Environmental Compliance (IDA: US\$3.0 million): IDA financing will particularly aim to improve the application of MECIE legislation by supporting efforts that would increase the speed of the EIA process, reduce costs, while ensuring minimally acceptable quality. IDA financing will be available to position ONE to effectively assume its role to operate a EIA one-stop-shop for MECIE legislation compliance and put in place a result-based and service-oriented approach. This will entail support for: (i) institutional capacity building aimed at ensuring compliance with ISO 9001 quality standards; (ii) decentralization of the MECIE process by strengthening the CRMs as provincial platforms of information and expertise; and (iii) promotion of environmental auto-regulatory mechanisms such as ISO 14000, MSC, FSC and GAA.

3.4. Environmental Management and Coordination (IDA: US\$ 2.0 million): IDA will support the MinEnvEF: (i) to put in place a financial management system that would enable the Ministry to position itself for budget support programs after EP III; (ii) following recommendations from SOATEG, to establish a M&E evaluation system that would enable tracking of EP III results and impacts; and (iii) based on the results of institutional assessment carried out by BIDEV, implement agreed institutional reforms that would strengthen its presence on the ground as well as reinforce its coordination mechanism with other public sector programs and the donor community. In addition, IDA financing would be available to support the institutional strengthening process of environmental units in the sector ministries.

Component	Indicative Costs (US\$M)	% of Total	Bank financing (US\$M)	% of Bank financing	GEF financing (US\$M)	% of GEF financing
Sustainable Development	38.70	26.0	0.00	0.0	0.00	0.0
Forest Ecosystems Management	34.40	23.1	18.00	45.0	0.00	0.0
Protected Areas Management	45.90	30.8	13.50	33.8	9.00	100.0
Marine and Coastal Zone Ecosystems Management	2.40	1.6	0.00	0.0	0.00	0.0
Environmental Mainstreaming	27.50	18.5	8.50	21.3	0.00	0.0
Total Project Costs	148.90	100.0	40.00	100.0	9.00	100.0
Total Financing Required	148.90	100.0	40.00	100.0	9.00	100.0

2. Key policy and institutional reforms supported by the project:

Most of the groundwork concerning the establishment of a relatively sound and coherent policy and institutional framework for the environment has already been laid under the previous phases of the NEAP. Consequently, the policy and institutional reform agenda of the project is relatively limited in scope and primarily aimed at: (i) further mainstreaming environmental policies; (ii) improving sector governance; and (iii) putting financing for the environment on a more sustainable footing.

Further mainstreaming environmental policies

Important pieces of the policy agenda would include the incorporation of more explicit environmental considerations into land management and tenure policies, energy policy as well as water management policies. Efforts under the project would focus on defining and putting in place an optimal mix of carrots and sticks that would provide incentives for the conservation and sustainable management of land, energy and water resources. To promote mainstreaming of environmental policies from a process point of view, the

mandate of environmental units in sector ministries would be enhanced so as to integrate EIAs into the review process of legislative proposals. Compliance with existing MECIE legislation would be facilitated by reducing transactions costs through the creation of a one-stop-shop in ONE. In view of the actual situation there is a need that sector ministries make specific and sufficient budget allocations to ensure that public investments fully comply with MECIE legislation.

Improving Sector Governance

Following the creation of a single Ministry of Environment, Water and Forest (MinEnvEF), the GoM has moved rapidly to develop an integrated vision of the institutional framework for the sector. The project would support implementation of this framework that seeks: (i) to focus MinEnvEF's mandate on core public sector responsibilities associated with policy-making and regulatory functions; (ii) to locate core operational environment functions in specialized institutions for protected areas management, forest management and EIA management; (iii) to strengthen MinEnvEF's coordination capacity with other sector ministries and programs; and (iv) to concentrate support for sustainable NRM at the commune level into a specialized fund (*Fonds de Appui au Gestion Environnementale Communale*, FAGEC).

As far as forest-related issues are concerned, the project would pursue a reform agenda that could provide the foundation for putting the sector on a more accountable and sustainable footing. This agenda would include the following elements: (i) an institutional reform to re-focus the mandate, programs and funding of key institutions dealing with forests in line with the agreed institutional framework; (ii) completion, discussion and dissemination of the zoning plan with local governing bodies and local communities, demarcation and effective preservation of areas to be managed permanently under forests; (iii) recasting the rules for using or management of production forests and forests where land conversion to other uses is an option; (iv) design of transparent, competitive systems for selecting companies interested in commercial forest operations; (v) undertaking a review, simplification and consistency check of regulations, including modalities to actually enforce rights and obligations, apply penalties effectively; (vi) development of a transparent plan to discontinue current logging contracts and other forest use concessions over a period of three years, and to allocate newly-designed permits to qualified candidates; (vii) a forest taxation reform and creation of a joint forest revenue security program by the Ministries in charge of Forests and Finance; (viii) acceleration and quality improvement of current management transfer schemes (GELOSE, GCF and alike); and (ix) setting up of an information system to better help decision making.

As far as transitional measures for good governance in the forest sector are concerned, there is a need for the following. First, the GoM would maintain a ban on the export of non-processed precious wood and a moratorium on the allocation of new permits, until a transparent, competitive allocation system based on licensing agreements has been put in place. Second, the GoM would set collection and export quota for CITES wildlife trade at zero until: (i) there is sufficient institutional capacity to effectively monitor wildlife collection and export permits; and (ii) there is a cost recovery system in place under which permit fees pay for the required allocation and monitoring system.

Putting financing for the environment on a more sustainable footing

The project would seek regulatory reforms that would improve competitiveness and transparency into the allocation of forestry management and logging rights. It would improve the fee collection record of logging permits through outsourcing. It would reduce transaction costs associated with surveillance and control of logging permits through improved economies of scale achieved by an increase in the minimum size of the permits. The project would pursue discussions on reforms that would lead to a better alignment between taxation mechanisms and tax rates on the one hand and incentives for the conservation and sustainable use

of natural resources on the other hand. Examples may include: (i) allocation of reasonable share of revenues from tourist visas to ANGAP; (ii) establishment of a commune tax on charcoal, favoring sustainably produced charcoal; and (iii) fiscal measures that could promote accelerated adoption of substitute fuels for charcoal and fuelwood. Last but not least, the project would help establishing and contribute to the proposed Trust Fund to be managed by the Foundation for Protected areas and Biodiversity in Madagascar so as to put in place a sustainable financing mechanism for biodiversity conservation and protected areas management in the country. Additionally, the project will support the development and implementation of a result based cost reduction action plan within ANGAP, and has agreed upon a 50:50 ratio of operating and investment costs with regards to IDA and GEF funding to avoid issues such as little investments and high operating costs faced during the course of implementation of the EP-II.

3. Benefits and target population:

The main benefits of EP-III relate to maintenance of ecosystem functions and services, conservation of flora and faunal species and of genetic biodiversity for both local and global benefits, coastal protection, carbon sequestration and amenity values for tourism and recreation. The project's strategy seeks to diminish human pressures in PAs, PA support zones and natural forests by demonstrating sound alternatives to the present unsustainable production practices, thereby promoting sustainable economic activities for the local populations. Alternative revenue generating activities targeting forest edge and coastal communities neighboring PAs will be developed as part of the management of these areas. Thus, better management will have a positive impact on the livelihoods of the people living in and around the PAs. Women will particularly benefit from the focus on gender balance in management activities. Local communities and other stakeholders will benefit from the capacity-building measures to be undertaken in the proposed project.

Local benefits and beneficiaries

Communities that are neighboring national parks would benefit from increased revenue sharing transfers by ANGAP of park entrance fee receipts. They would benefit from increased employment opportunities in the tourist industry as well as the multiplier effects of an expanding tourist sector through diversification of the local economy. Communities located in critical eco-regions would be able to capture benefits associated with soil, water and biodiversity conservation subprojects financed under the program. Improved governance in the forestry sector would improve fee collection records, thereby increasing revenue transfers to communities under the National Forestry Fund. Transfer of forestry management rights under GELOSE/GCF contracts would generate benefits for rural communities that are located at the agricultural frontier. Improved local planning capacity as reflected in PCDs and marine and coastal zone management plans would set NRM on a more sustainable footing, thereby stabilizing revenue streams of communities that depend on their use and exploitation in the medium to long run. Improved wood-fuel use, coupled with the introduction of substitution fuels, would reduce the risk of respiratory diseases, thereby positively impacting the health status of rural households. Research and development of non-wood forestry products is expected to generate concrete opportunities for income diversification that would benefit communities in rural areas.

National benefits and beneficiaries

Improved park visitor infrastructure and services would contribute to accelerated growth of the tourist sector which would benefit the diversified range of operators in the value-chain as well as generate employment opportunities for the population at large. Improved governance in the forestry sector would

increase fee collection of logging permits which would subsequently benefit the fiscal position of the GOM at all levels. Soil erosion control measures carried out under the program could provide valuable benefits to downstream users of watersheds (e.g farmers, hydroelectric power generators and water consumers). Streamlining of environmental institutions would generate efficiency gains with positive fiscal impacts for the public sector. Improved compliance of public and private investments with EIAs and corresponding mitigation measures would generate benefits in terms of foregone negative external effects. Biodiversity conservation in itself would represent potential benefits through option values that could be captured by putting in place a system of bioprospecting rights. Eco-certification schemes to be promoted under the project could provide value-added for consumers. Reforestation schemes for carbon sequestration purposes could start providing a valuable contribution to the national economy.

Global benefits and beneficiaries

Improved biodiversity conservation in Madagascar would generate benefits for the international community through protection of existence values, future use option values (e.g. medicinal plants awaiting discovery), and carbon sequestration benefits. Consolidating or increasing forest cover would provide benefits to the international community in terms of available carbon emission capture capacity to control global warming and its possible effects. In addition, international tourists visiting Madagascar would benefit from improved infrastructure and other ecotourism related services, life-fulfilling functions provided by the country's unique biodiversity resources.

4. Institutional and implementation arrangements:

Implementation Period

The project would be implemented over a 5 year period from 2004-2009. Project effectiveness is expected by June 2004. A mid-term review would be conducted before December 31, 2006. The project is expected to be completed by May 31, 2009.

Recipient and Executing Agencies

The Recipient of the IDA Grant and GEF Trust Fund Grant to finance the project would be the Republic of Madagascar represented by the Ministry of Economics, Finance and Budget. The Ministry of the Environment, Water and Forests would coordinate execution of the project. The Department of Water and Forests (DGEF) would take a lead role in the execution of the Forest Ecosystems Management component. The Department of the Environment (DGE) would take a lead role as far as the policy and regulatory functions associated with the Environmental Mainstreaming component are concerned, while the National Office of the Environment (ONE) would take direct responsibility for selected items of the environmental mainstreaming agenda, including: (i) environmental information, education and communication; and (ii) operational aspects of reducing transaction costs and improving compliance with EA legislation in Madagascar. The National Association for the Management of Protected Areas (ANGAP) would take a lead in implementing the Protected Areas Management component of the project. Proposed reforestation activities under the project might be channeled through the *Fond de Appui au Gestion des Actions Environnementales* (FAGEC), following the intention of the GoM to create this fund.

Malagasy Foundation for Protected Areas and Biodiversity

A Trust Fund Steering Committee (TFSC) appointed by the Minister of the Environment in 2001 is currently working on the establishment of a Trust Fund for Biodiversity Protection in Madagascar. This prospective trust fund will be managed by a Foundation which is expected to be operational by July 2004. The Foundation represents one of the pillars of the larger sustainable financing agenda that is pursued under the Environment Program. The Foundation is expected to lead to mobilization of substantial funding

necessary to gradually cover the core costs of the protected areas network and its expansion, selected projects in support zones, and the sustainable development of priority ecological corridors. The proposed “Malagasy Foundation for Protected Areas and Biodiversity”, would be established as a foundation under a new Foundation Law to be submitted to Congress in April 2004. Although the Foundation would be legally registered in Madagascar, most of its assets would be invested offshore. It is expected that the proposed Madagascar Protected Areas Foundation would be established initially with pledged seed money from WWF, CI and the GoM under debt-for-nature swap with KfW. This provides the basis for specific fund-raising activities that address the public and private sector. The project would help operationalize the Foundation by using it as a pass-through as soon as possible (after year 1), and prior to endowment which will be provided later. The project would help establishing the Trust Fund for Biodiversity Protection through an envisaged IDA contribution of US\$7.5 million to the Foundation.

Policy Guidance

Overall policy coordination of the NEAP is currently provided by the existing Interministerial Environment Committee (IEC), chaired by the Minister of the Environment. The IEC is guided by independent advice from a consultative National Environment Council. The need for greater integration of the NEAP with other sector programs such as the PADR, PST etc., the strong focus on rural development in the recently completed PRSP, as well as the new ministerial structure that has been put in place since January 2003, has fueled discussions within the Government and donor community to put in place a mechanism for policy guidance that is based on a more holistic view of rural space. Rather than having Interministerial Committees organized along sector lines, this might well lead to a single Interministerial Committee for Rural Development and Environment that works in partnership with the donor community. Proposals along these lines have been developed and it is expected that a final decision will be taken sometime in the Spring of 2004. Consolidation of the intersectoral arbitrage functions, currently carried out by the IEC, should be ensured in the new structure.

Project Oversight

A Joint Committee, consisting of relevant government agencies and donors, presided by the Minister of the Environment, Water and Forests and co-presided by a representative of the EP3 donor community, would be responsible to coordinate program activities under the third phase of the NEAP. Rather than coordinating inputs and resources as was done under EP2, the Joint Committee would: (i) ensure that government and donor investments are defined and implemented in close relation to the agreed results agreement of EP3; and (ii) monitor progress towards the agreed results of EP3.

Project Management

A Project Implementation Support Unit (PISU) would be responsible to assist ONE, DGEF, DGE and ANGAP in the execution of the project at the operational level. The Unit would be established within the Department of Project Coordination in the Ministry of the Environment, Water and Forests. The PISU would consist of a team of dedicated professionals with relevant disciplinary backgrounds for the purposes of the Project. They would include a coordinator, procurement and financial management specialists, an internal auditor, as well as M&E specialists. The PISU would have the following functions: (i) consolidate annual operating plans and ensure their execution once approved; (ii) elaborate semestral monitoring reports with approved annual operating plans as reference; (iii) elaborate and propose modifications to project manuals and guidelines; (iv) coordinate execution of approved procurement plans; (v) arrange for the contracting of the external auditors of the project; (vi) manage a system of result-based disbursements from the Special Account to ONE, DGEF, DGE and ANGAP based on results agreements of these institutions with the Minister of the Environment, Water and Forests; (vii) ensure compliance with agreed norms and procedures specified in the Grant Agreement; and (viii) interact with the World Bank regarding

all project related themes, including the preparation and presentation of reports and no-objection requests and the coordination of all supervision missions.

Procurement

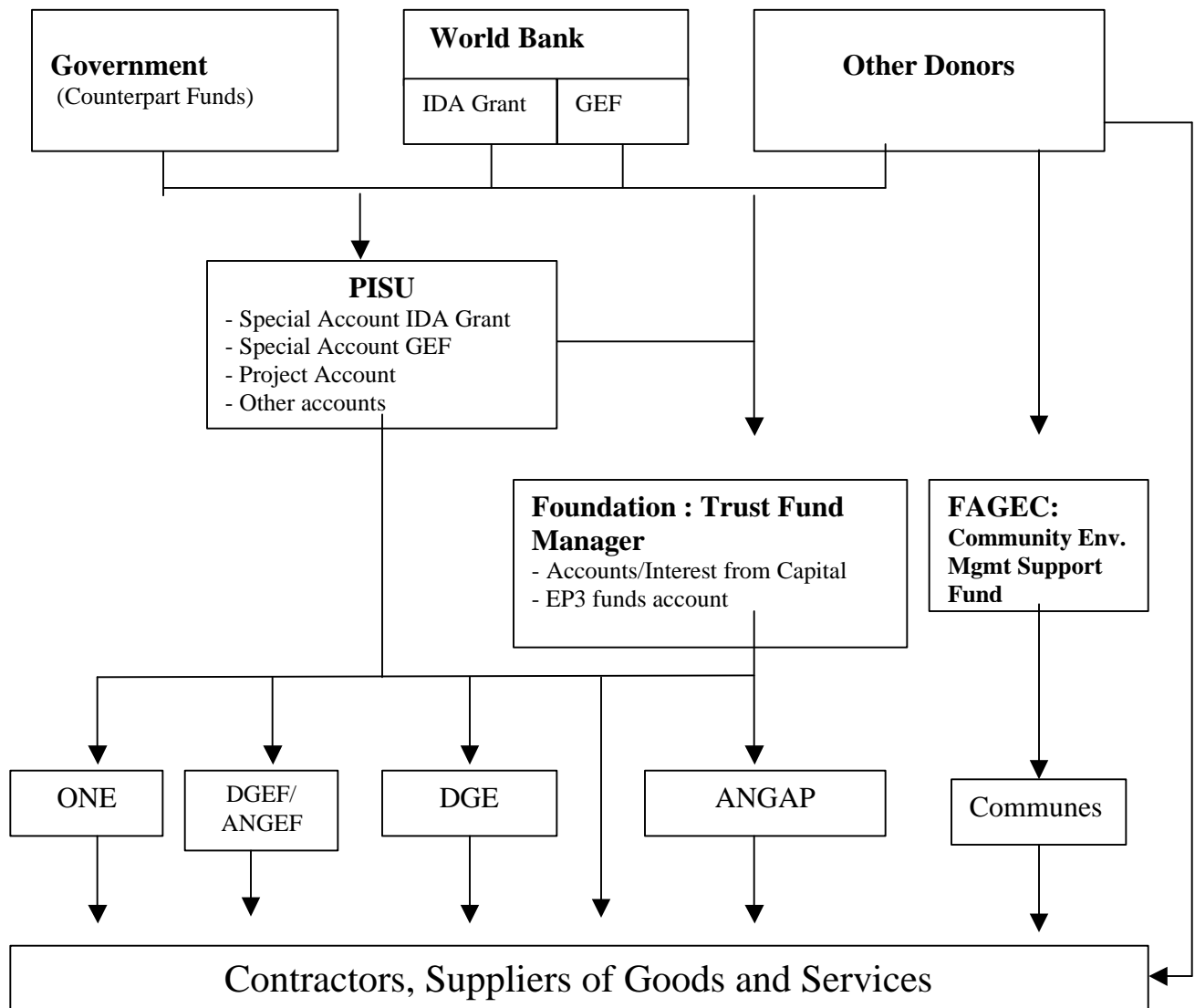
Technical aspects of the procurement process (drafting TDRs, technical specifications etc.) would be the direct responsibility of the executing agencies. On its turn, the PISU would be responsible for carrying-out the procurement process, following Bank guidelines and procedures.

Accounting, Financial Reporting and Auditing Arrangements

The Ministry of the Environment, Water and Forest would be responsible for all financial management aspects of the Project with assistance from the PCT. During the project preparation process a financial management assessment has been conducted in accordance with OP/BP 10.02 and Financial Management Sector Board Guidelines in order to: i) determine whether these entities have acceptable financial management arrangements (accounting and budgeting systems, internal controls, reporting and auditing); ii) define the required support to the Ministry of the Environment and the Ministry of Water and Forests to effectively assume all required financial management functions. Based on this assessment an action plan has been agreed that would bring the financial management capacity of the Ministry of the Environment and the Ministry of Water and Forests in line with Bank requirements.

Funds Flow (see Annex 6B)

The flow of funds from IDA, GEF, the government and other donors is presented as follows :



Monitoring and Evaluation

A M&E system has been developed as part of the project preparation process with available PHRD resources. Operational responsibility of monitoring and evaluation arrangements of project activities would be the responsibility of the implementing agencies. The PISU would be responsible to integrate M&E results at the EP-III program level and differentiate according to financing source. A dedicated team of donors and executing agencies comprising the Steering Committee, will meet at least once a year to monitor programme development and to reorient the program as needed. ONE would play an important role in providing the PISU with environmental data and information as part of its responsibility to prepare *Tableaux de Bord Environnementaux* at different levels (national, provincial, regional). External reviews to assess the outcome of the M&E scheme will be carried out every 6 months. A mid-term evaluation will

be undertaken to evaluate progress and recommend mid-term corrections. A final evaluation similar to that at mid-term will be performed relative to the output and outcome performance indicators, to evaluate the impacts of and lessons learned from the entire duration of the 15-year NEAP. Details about the M&E system are provided in Annex 15.

Donor Coordination

Rather than a joint program, as was the case under the second phase of the NEAP, the third phase would be supported by a series of parallel projects financed by IDA/GEF, UNDP/GEF, USAID, FAC, KfW, GTZ, Tany Meva, WCS, WWF and CI. Doing so would enable a more direct linkage between financing source and results on the ground, while avoiding the need for coordination among donors at the activity level, which has proven to be difficult under EP2. To ensure a Sector Wide Approach, a joint GoM-donor results framework has been developed that lays out the expected outputs of EP3. Participating donors in EP-III have committed themselves to organize their investments in such a manner that they would contribute to the realization of these outputs. At the same time, participating donors have agreed to be held accountable for the contribution of their investments to the expected results of EP3 by having their programs subject to EP3's common M&E system. The Joint Committee would provide a joint GoM-Donor platform to discuss progress of EP3 based on the agreed results framework, while the Donor Secretariat (SMB), set-up under EP2, would continue to play an important role to ensure smooth functioning of the Joint Committee. Although the Sector Wide Approach focuses on coordinating efforts at the output level mainly, the establishment of the Trust Fund for Biodiversity Protection by the Madagascar Protected Areas Foundation, as well as the envisaged FAGEC, provides an opportunity for donors to pool their resources for a common goal in a significant manner as it is envisaged to raise US\$50 million for the trust fund by the end of EP-III.

Intervention Area

With the aim to better focus activities as well as to better take into account efforts of other public sector investment programs (notably those under the PADR and PST), the geographical intervention area of EP-III has been defined following a formal prioritization process. Prioritization criteria include: (i) biodiversity importance; (ii) threat levels; (iii) expected costs and benefits; (iv) opportunities for local collaboration; and (v) intervention areas of other public investment programs. Based on these criteria, EP-III will concentrate its field-based activities in 530 communes, covering a population of about 4.9 million people (41% of Madagascar total population) and an area of 32 million ha (55 % of total territory). The Protected Area network of Madagascar managed by ANGAP aims to consist of 36 Management Units (Unité de Gestion - UG), corresponding to 46 Protected Areas. The IDA and GEF contribution to ANGAP's protected area system will be selective under EP-III. It will support a total of 22 UG, corresponding to 27 Protected Areas. The GEF will lend support to 15 UG, while the remaining 7 will be supported by IDA (refer to Annex 16 for site description, and selection process).

D. Project Rationale

1. Project alternatives considered and reasons for rejection:

Four other project alternatives were considered but were rejected largely because they addressed the envisaged development objective of the project in a non-integrated manner.

The first alternative consisted of a project that would support the proposed third phase of the NEAP as a financier of last resort as has been the case under the on-going second phase. This alternative was rejected following the conclusion of the QAG that the support of the Bank to the second phase of the NEAP has

been spread too thinly, thereby complicating the achievement of expected impacts. In addition, being the financier of last resort also complicates establishing a clear linkage between Bank financing and results on the ground.

The second alternative consisted of a project that would focus solely on the management of protected areas. Because of ANGAP's relative institutional strength, this alternative is attractive as it would ensure relative effective and efficient implementation of proposed project activities. However, this alternative was not pursued as concentrating biodiversity conservation on just a number of protected areas does not address the root causes of environmental degradation in the country.

The third alternative consisted of a project that would focus solely on the development of sustainable financing mechanisms. Doing so would be in line with the stated objective of the third phase of the NEAP as was envisaged at its launch in 1989. This alternative was not pursued because it would ignore the financing needs of critical environmental investments and institutions in the period prior to which sustainable financing mechanisms could be effectively put in place. The alternative was also rejected as the feasibility of putting sustainable financing mechanism in place strongly depends on the extent to which existing governance issues could be addressed in an effective manner.

The fourth alternative consisted of a project that would focus solely on the forestry sector. This alternative would be based on the consideration that mounting governance problems in the sector are serious and complex and that it would take a dedicated operation to address these problems effectively. Although this alternative appeared attractive, it was rejected based on the consideration that the advantage of focusing narrowly on a single sector would most probably be outweighed by the disadvantage of not being able to pursue opportunities for environmental mainstreaming that are equally important to create enabling conditions for good governance.

Concerning household energy, the outright subsidization of LPG has been rejected as it would mainly benefit already better-off households, while its effectiveness and efficiency as a mean to reduce pressure on natural forests is questionable. The alternative chosen, that is to generate income from sustainable woodfuel exploitation at the village level, has much higher economic benefits. However, the distribution of LPG in smaller containers could be attractive for a large portion of the population and marketing tests of 3 kg and 1 kg LPG bottles will be carried out under the project to view if and how this can lead to scaling-up LPG use.

2. Major related projects financed by the Bank and/or other development agencies (completed, ongoing and planned).

Sector Issue	Project	Latest Supervision (PSR) Ratings (Bank-financed projects only)	
		Implementation Progress (IP)	Development Objective (DO)
Bank-financed			
Rural Development	Rural Development Support Project (3524-MG)	S	S
Community Development	Community Development Project (3498-MG)	S	S
Energy	Energy Sector Development Project (2844-MG)	S	S

Economic Policy and Governance	SAC-2 (3218-MG)	S	S
Transport	Rural Transport Project (3717-MG)	S	S
Environment	Environment Program II (1537-MG)	S	S
Other development agencies			
USAID	Landscape Development Initiatives		
UNDP/GEF	EP2: Biodiversity and Marine Components		
GTZ	GreenMad: Efficient charcoal to protect natural forest		
KfW	National parks management		
French/SCAC	EP2: Natural resources management and training		
NORAD	Zombitse Reserve Management		
EU	Bemeraha National park conservation		

IP/DO Ratings: HS (Highly Satisfactory), S (Satisfactory), U (Unsatisfactory), HU (Highly Unsatisfactory)

EP III will seek to develop effective coordination with rural development programs, in particular with the large Bank-funded rural development operation (PSDR), but also with similar programs or projects in the areas of rural roads (PST), rural infrastructure (FID), energy and tourism. At the national level, it has been agreed to seek formal agreements with such operations, starting with PSDR through a protocol between MinEnvEF and MAEP.

Similarly, activities under the Critical Ecosystem Partnership Fund (CEPF) program in Madagascar for 2001 and 2002, have served as additional input into the design of the full GEF EP III proposal, thus providing a complimentary linkage. CEPF is funding conservation initiatives led by civil society organizations. A primary emphasis of CEPF funding in the region is on integrating local groups and individuals in the management of protected areas and reserves. Throughout the hotspots, and especially in Madagascar, increased financial and technical support for NGOs is needed to enhance the management of existing parks and reserves. Investments under the CEPF program are being carefully targeted to avoid any duplication of effort with other GEF activities and maximize synergies with the said activities. Efforts are focused on organizing and building capacities within civil society to implement conservation activities, taking a 'learning by doing' approach.

3. Lessons learned and reflected in the project design:

As part of the EP2 completion process, considerable efforts have been invested to assess performance as well as distill lessons learned from EP2. For this purpose, a detailed matrix has been prepared that links EP2 Results and Impacts, Lessons Learned and Gaps to Expected EP3 Outcomes (copy in Project Files). The most important lessons are the following.

Streamlined Program Approach. Under EP1 the implementation of the NEAP had taken the form of a number of separate donor-driven projects without obvious linkages between each other. EP2 instead was largely based on the proposals developed initially by the implementing agencies (AGEX) of EP1, on a multi-donor appraisal and negotiations process, and on the establishment of a donor coordination mechanism in the form of a Multi-Donor Secretariat. The key mechanisms of the program were: (i) an

annual consolidated programming and budgeting process, through periodic multi-donor meetings; and (ii) a consolidated monitoring and evaluation system. In retrospect, the system had the benefit of promoting close collaboration between AGEX and between donors, but also proved overly time consuming, as well as ill-adapted to the way of working of bilateral donors as indicated by a QAG Review in 2000 as well as the draft EP-II ICR. A possible solution to this problem could have been to structure EP3 according to the more recently established Rural Development Action Plan (PADR). The PADR is a reference framework, which permits grouping of different interventions that share a common focus and common intervention principles. However, it lacks an explicit coordination mechanism and commonly agreed outputs that would enable linking the contribution of different interventions to explicitly defined program results and outcomes. In light of this, EP3 has been developed as a sector-wide program approach with the following characteristics. First, the program is based on overall policy guidance provided by the Minister of the Environment, Water and Forests through a specific Letter of Environmental Policy. Second, the program is based on a commonly agreed Results Framework that defines objectives, results and activities along with corresponding impact, output and input indicators. Third, participating donors agree to measure the success of their contributions to EP3 based on the commonly agreed program impact indicators, while being committed and prepared to be held accountable for the financing of a set of specific outputs included in the Results Framework. Fourth, arrangements for pooling of resources under the approach have been set-up through the Madagascar Foundation for Protected Areas and the *Fonds de Appui de Gestion Environnementale Communale*. Fifth, the program will deploy a result-based monitoring and evaluation system and organize information flows to capture the outputs of the various program contributions financed by participating donors that together will make up EP3.

Improved Coordination with other Programs. In order to better integrate the environmental program with the country's overall development and for the sake of pursuing environmental mainstreaming, EP3 would seek to enhance coordination with other sector ministries and investment programs. For this purpose, MinEnvEF has already signed a protocol with MAEP to ensure coordination with the large Bank-funded rural development operation (PSDR) for sustainable development activities in protected areas buffer zones and eco-corridors. Similarly, MinEnvEF will seek coordination with the Ministry of Tourism, Ministry of Energy, and the Ministry of Education through specific agreements to ensure appropriate complementarity and synergy in respectively PA visitor infrastructure development, domestic energy and environmental education. More specifically, these agreements will cover five domains: (i) division of responsibilities: this could be based on the type of activity (e.g. regarding energy, EP III will deal with fuel wood, charcoal and the like, while rural electrification should be left to the Energy program) or the geographical location (EP III has identified priority areas of intervention corresponding to some of the key objectives); (ii) complementarity: when several operations deal with the same activity (e.g. supporting the formulation of Communal Development Plans), they should make sure that their coverage will complement each other; (iii) synergy: crop intensification in an area might decrease pressure on a nearby Park; (iv) duplication: avoiding having several major operations undertaking very similar activities in support of the same beneficiaries; and (v) conflict management: arising as a result of the availability of credits versus grants, or varying levels of beneficiary participation. Last but not least, EP3 would launch a *tavy* and forest fire monitoring program aimed at effectuating cross-sectoral conditionality for public investment eligibility based on the effectiveness of agreed control measures at the commune level. The MinEnvEF will coordinate application of the results of this monitoring program with other relevant sector ministries and investment programs, including PST, FID etc.

Emphasis on Performance-based Implementation Mechanisms. EP II was implemented by the environment agencies established by the program (ONE, the National Environment Office and four discreet AGEX units attached to ONE; ANGAP, the National Association for the Management of Protected Areas; and ANAE, the National Association for Environmental Action) and by line departments (Water and Forests, Land

Registration) and other public agencies (FTM, the Geographic Institute; CFSIGE, a training institute), under the coordination of ONE and the oversight of the Environment Ministry. During the restructuring of 2001, the number of AGEX was reduced from seven to four (ONE, ANGAP, ANAE and the Water and Forests Department) by separating the four AGEX that had been attached to ONE and fusing the operational functions into a semi-autonomous service provider called SAGE (Environment Management Support Service). ONE has been re-structured to focus on its core functions. The review of the lessons emanating from the various structures established during EP I and EPII is near completion. Key findings pertinent to the implementation and sustainability of EP III include: (i) the transfer of control over natural resources to communities has been a critical tool for putting an end to *de facto* open access and for empowering communities to control access to “their” natural resources, this confers with the experience in Mahajanga under the Energy Sector Development Project (completed); (ii) a key weakness in EP II design was the false assumption that there were natural resource management systems ready for transfer to communities. Resources were not targeted towards the development of pilot systems and lessons learned in sustainable use from other countries have not been properly exploited; (iii) the potential for commercially-oriented natural resource management that generates incentives for sustainable use and that contributes to poverty alleviation, has been frequently ignored. Most transfers have been for noncommercial usufruct rights only; and (iv) support to participatory planning has resulted in a unique dynamism that contributes to good governance, brings civil society into the decentralization process and brings divergent groups together to confront common environmental/natural resource problems.

Based on the lessons of EP2 and the call for more flexibility and for the participation of more agencies, EP3 will therefore be implemented by a larger number of entities (AGEX, local governments, communities, NGOs, service providers, etc.) under a system of result agreements between MinEnvEF and implementing agencies, along with performance monitoring by the PISU.

Explicit Measures to Address Governance. Governance issues have seriously hampered achieving positive outcomes in the forestry sector during the EP-III. They also have had a negative impact on the image and credibility of the program. Lessons from EP-II demonstrate that governance issues can not be left unattended. It was only late in the EP-II implementation process that governance issues were dealt with in more explicit terms and moved towards the center of the sector dialogue. Action plans to deal with specific governance issues were agreed, which led to partial successes concerning fee collection from logging permits, moratorium on the delivery of CITES collection and export permits, etc. However, rather than dealing with forest governance issues in a responsive mode through action plans as was the case under EP-II, EP-III proposes to follow a more structural and pro-active approach, consisting among other of the following elements: (i) improving institutional checks-and-balances by spinning-off operational forest management functions into a specialized organization and keeping only policy-making and regulatory and control functions within DGEF; (ii) expanding forest zoning coverage as a mean for better informed and more transparent decision-making; (iii) transferring forest management functions to communes under GELOSE/GCF arrangements, whereby they directly benefit financially from sustainable management practices; and (iv) strengthening watch-dog functions of OSF so as to ensure constant pressure for better governance on all parties involved in the sector.

4. Indications of borrower and recipient commitment and ownership:

In recognition of the global significance of the country's biodiversity and the need for its urgent protection, the Government of Madagascar (GoM) was the first in Africa to elaborate a National Environmental Action Plan (NEAP) as early as 1989, six years prior to signing the Convention on Biological Diversity. The corresponding Environmental Charter, promulgated in 1990, states *inter alia* that: (i) the environment is a major concern for the government (Article 3); (ii) the NEAP constitutes the basis for all actions in the environmental field (Article 5); and (iii) Environmental management is ensured by the government, local authorities, legally created NGOs and all citizens (Article 7). To implement the NEAP and objectives of the Charter, the Environment Program was designed from the beginning in the early 1990s as a long term effort, consisting of three phases covering a period of 15 years. The Letter of Environmental Policy (Annex 11), signed by the Minister of the Environment, Water and Forests reflects the on-going commitment of the current Government to the NEAP, while at the same time laying-out a clear vision and guiding principles to achieve this, based on lessons learned under the previous phases of the NEAP. At the World Parks Congress in Durban in September 2003, the President of the Republic declared Madagascar's commitment to bring the area under effective biodiversity conservation measures in line with IUCN's norm of 10% of countries' territories. In order to put conservation, rather than exploitation, as the guiding principle for natural resources management in Madagascar, the President of the Republic already in January 2003 put the existing Ministry of Water and Forest into the Ministry of the Environment into a single Ministry of the Environment, Water and Forests. Madagascar's commitment to environmental issues and nature protection is also reflected by its good record of recognizing and ratifying pertinent international and regional conventions in the environmental arena (List available in Project Files). The importance of the environment is also reflected in the country's PRSP by indicating and referring to the need to address the linkages between poverty and environmental degradation as well as including some performance indicators that are specifically related to the environment and natural resources management.

5. Value added of Bank and Global support in this project:

The Bank Group's comparative advantage in biodiversity conservation as well as demand driven rural investment projects, places it in a position to provide strong support to the GoM in implementing the third phase of its Environment Program. Due to its capacity to respond to multisectoral needs in the form of assistance in policy, infrastructure and capacity development all at once, the Bank is uniquely positioned to provide the much needed coordination of the forestry and PA systems in Madagascar. The proposed project covers all these aspects. The Bank possesses considerable experience in Madagascar through its participation in EPI and EPII. Also through policy conditionality in SAC-2 (an audit study), the Bank has been able to address issues of environmental concern as they related to fisheries, forestry and mining. By being the lender of last resort, the Bank has facilitated involvement of other donors in the environmental program, while at the same time assuming a key role in donor coordination, among others through its substantial support to the Multi-Donor Secretariat that was established under EPII. Although its role as residual financier would be substantially reduced under EPIII, the Bank will be able to continue to provide value-added, particularly in view of its envisaged contribution as a global financial institution to the stated objective of developing sustainable financing mechanisms for the environment and in view of the potential leverage it can provide as a global development institution in advancing the governance agenda in the environment sector.

Additionally, both the Bank and GEF provide a significant and influential input to the biodiversity and protected area management activities by focusing upon key sites requiring urgent attention. This is mainly due to the Bank's increasing experience in, and ability to facilitate long-term, programmatic approaches to biodiversity management, poverty alleviation and sustainable resource use. It will also build upon and enhance the progress Madagascar has made in the areas of policy, legislative and structural reform in the

environmental sector as a whole. The Bank is well placed to support on-going efforts in the protected areas management sector in Madagascar, which is by far the most comprehensive and well-developed of the natural resource management sectors, and thus offers the greatest potential for economic and biodiversity conservation success. The Bank is also in a position to use its influence across sectors to support the “environmental mainstreaming” component by assuring that projects and agencies receiving funding in the relevant sectors include biodiversity conservation criteria and actions. The incremental activities supported by GEF will also promote alternative livelihoods, working to support both economic development and sustained protection of natural resources.

The project involves multiple stakeholders and is multi donor-financed. The value added of the Bank’s support in mobilizing additional finance from bilateral donors is based on its previous experiences where it has developed strong and positive relationships with international and local NGOs and the donor communities involved in natural resource management. Without GEF and Bank involvement it will be very difficult to consolidate the protected areas system in Madagascar and bring in lessons from other countries and regions.

E. Summary Project Analysis (Detailed assessments are in the project file, see Annex 8)

1. Economic (see Annex 4):

- ☒ Cost benefit NPV=US\$16.7 million; ERR = 25 % (see Annex 4)
- ☐ Cost effectiveness
- ☐ Incremental Cost
- ☐ Other (specify)

In the absence of the project, the rate of deforestation is expected to be about 1 % per year. This rate is closed to the one observed by LANDSAT satellite images over the past ten years. With the project, 6 million hectares of natural forests will be preserved, presenting all different forest ecosystems in Madagascar. The area represents about 10% of Madagascar’s territory, thereby bringing the country in line with IUCN conservation norms. This objective was confirmed by the President of Madagascar at the World Parks Congress in Durban in August 2003.

To achieve this objective would imply a deforestation rate approaching zero based on three different management modalities, including: (i) protected areas covering 2 million hectares; (ii) conservation sites covering 3 million hectares; and (iii) community based forest management covering 1 million hectares. Contrarily to the protected areas management modality which has been operational on about 1.7 million hectares since ten years under EP I and EP II, the two other management modalities have not been used on a large scale in Madagascar as of to date.

Economic benefits associated with the three natural forest management modalities pursued under the project include: (i) Direct and Indirect Use Value (DUV and IUV), and (ii) Non-Use Value (NUV), the sum of which represents the Total Economic Value (TEV) of Madagascar’s natural forest resources. The first two management modalities (protected areas and conservation sites) clearly focus on: (i) the preservation of the non-use value of forests (Malagasy endemic biodiversity with lemurs as symbol); and (ii) to a certain extent, indirect (non-extractive) use value through watershed and hydrological flow protection. They explicitly prohibit the direct, consumptive use of natural resources but do authorize the direct, non-consumptive use through eco-tourism, particularly in some of the protected areas which are well-equipped for this purpose. The third management modality of community-based forest management does allow for the direct extractive use value of forests, essentially with regards to biodiversity friendly activities such as fuelwood and

Non-Timber Forest Products (NTFP) collection, based on sustainable use management plans that are agreed with the communes as part of the management transfer process. At the same time, forest management transfer schemes does not provide significant watershed protection because they are expected to mainly concern lowlands natural forests that are relatively well connected to markets. In all cases, conservation of natural forests provide global benefits (an other non extractive or indirect use value) by preserving existing carbon stock. Unfortunately, conservation of standing forest is not currently eligible under the Kyoto Protocol. Consequently, carbon sequestration is not, like watershed protection, counted as an environmental service with corresponding economic benefits, that is provided by natural forests conservation in Madagascar.

As a result, the national benefits of halting deforestation in Madagascar's natural forests, in simple terms, include : (i) fuelwood and NTFP's net revenues associated with the transfer of management responsibilities to grassroots communities; (ii) foregone productivity and/or product quality reduction in irrigated areas and improved provision of drinkable water to towns downstream of watersheds containing natural forests (in the case of protected areas and conservation sites), and (iii) direct payments for biodiversity conservation from developed countries to Madagascar (also in the case of protected areas and conservation sites) as indicated in Table 1.

Table 1: National benefits types and natural forests management choices

<i>TEV component/management choices</i>	<i>Protected areas</i>	<i>Conservation sites</i>	<i>Management transfer</i>
1. Direct usage value (consumptive)			Fuelwood, NTFP
2. Direct usage value (non-consumptive)	Eco-tourism		
3. Indirect usage value (non extractive)	Watershed protection	Watershed protection	
4. Non usage Value	Biodiversity conservation	Biodiversity conservation	

Costs associated with the preservation of natural forests include: (i) management costs associated with the given management modality (investment and recurrent cost), and (ii) opportunity costs that reflect lost economic opportunities due to natural forests conservation including revenues associated with natural forest conversion through slash and burn agriculture (*tavy*) and with non-sustainable fuelwood harvesting and NTFP collection.

In order to evaluate the economic benefits of the IDA/GEF supported Environment Program III, the streams of national costs and benefits of the three management modalities have been compared over a 15 years time horizon (5 years during the project and 10 years post project) using a 10% discounting rate, approximating the opportunity cost of capital in Madagascar.

The detailed calculations were first made for preexisting protected areas, which over the last 10 years already have been the subject of a partial economic analysis; the results of which have been transferred with caution to the whole protected area network, and further expanded to conservation sites and management transfers (see Annex 4 for the hypotheses and results of the calculations). As a consequence of site specifics, the results should be taken as order of magnitude, especially for conservation sites and management transfers.

The results were positive (NPV>0 and ERR>10%) for all three management choices (see Table 2 for details), even when hypotheses led to an overestimation of the management and opportunity costs and an

underestimation of the economic benefits, especially the watershed protection benefits, because of watershed specificities. Consequently, it can be concluded that the investment in natural forest conservation of the IDA/GEF supported Environment Program III contributes to the welfare of the country.

Table 2: Natural Forest Conservation Cost/Benefit Analysis

Present value (10%, 15 years, \$ million)	Protected areas	Conservation Sites	Management transfers	Total
Management costs	(\$79.39)	(\$31.48)	(\$10.38)	(\$121.25)
Heavy foregone revenues	(\$37.26)	(\$42.86)	(\$14.29)	(\$94.41)
Fuelwood foregone revenues	(\$11.07)	(\$13.38)	(\$4.46)	(\$28.91)
NTFP foregone revenues	(\$12.42)	(\$14.29)	(\$4.76)	(\$31.47)
Total costs	(\$140.14)	(\$102.01)	(\$33.89)	(\$276.04)
Biodiversity conservation	34.60	35.91	-	\$70.51
Eco-tourism	60.28	-	-	\$60.28
Watersheds Protection	58.91	68.67	-	\$127.58
Sustainable fuelwood collection	-	-	13.62	\$13.62
Sustainable NTFP collection	-	-	20.75	\$20.75
Total benefits	153.79	104.57	34.37	\$292.74
NPV	13.66	2.56	0.48	\$16.70
ERR	32%	20%	12%	25%

The principal beneficiaries of EP III are poor irrigated rice growers and urban potable water consumers located downstream of protected areas and conservation sites who profit from the significant hydrological benefits associated with the Program. The benefits of the gainers surpass the opportunity costs incurred by upstream farmers engaged in slash-and-burn agriculture who, because of the project, cannot continue to clear forests for this purpose. In other words, the IDA/GEF supported Environment Program III has a net positive social impact and should contribute to alleviating poverty in Madagascar.

It should be noted that of the three management modalities pursued under the project, the results of the cost/benefit analysis are much more sensitive for conservation sites and community based forest management than for protected areas. This reflects various factors. First, given the already globally recognized biodiversity assets of the protected areas system, the probability that biodiversity conservation payments will be reduced or decreased faster than anticipated is lower for protected areas than for conservation sites, especially in view of the envisaged endowment fund for protected areas. Second, the probability of successful community based sustainable forest management (by collecting fuelwood and NTFP's) might be lower than the probability of eco-tourists continuing to visit the protected areas. Consequently, investments in conservation sites and community management transfers are more risky than for protected areas (see Switching Values and Sensitivity Analysis in Annex 4 for details).

2. Financial (see Annex 4 and Annex 5):

NPV=US\$ million; FRR = % (see Annex 4)

The economic cost/benefit analysis shows a positive NPV for each of three management modes. Consequently, compensation for lost economic opportunities as well as recurrent cost financing of the three conservation management modalities is in essence a problem of transfers of benefits amongst and between

the beneficiaries of the sustainable management of Madagascar's natural forests and upstream farmers involved in unsustainable forest management practices.

The distribution of benefits from different types of natural forests management is closely tied to the category of benefits provided by the three types of management. For example, preserving the protected area network benefits four social groups: (i) rice farmers in irrigated plains; (ii) water consumers in urban centers where water is supplied by rivers originating from protected areas, (iii) tourism operators; and lastly (iv) the National Association for the Management of Protected Areas (ANGAP).

With the identification of the gainers and losers and monetary evaluation of earnings/losses as presented in detail in Annex 4, three remarks can be made about distribution. First, ANGAP is worst-off as its main source of revenues (direct payment for biodiversity conservation) is uncertain and is likely to decrease. Second, ANGAP receives almost nothing from eco-tourism benefits, as the quasi totality of earnings are captured by tourism operators. Third, the earnings of the 300,000 households of irrigated rice farmers and potable water consumers compensate the losses of the 50,000 slash and burn farmers practicing *tavy*.

Water users' willingness to pay (irrigated rice farmers and drinkable water consumers) downstream the watersheds protected within the network of protected areas and conservation sites is in theory a sustainable and sufficient source of financing to compensate the revenues lost by the communities who can no longer continue to clear natural forests for rice cultivation and wood-fuel collection. However, transferring downstream water users' willingness to pay in the form of Payment for Environmental Services (PES) to potential forest clearers upstream is not a conceivable solution in Madagascar at present.

In light of this situation, compensation for these households would involve the provision of technical alternatives currently tried in Madagascar and financed through Overseas Development Assistance (ODA) under the Environment Program and others, including: (i) hillside conservation activities and improvement of sustainable farming practices in the periphery of conservation sites, protected areas and community based forest management areas; (ii) improvements in charcoal making in communities associated with forests under community based forest management; and (iii) fast growth reforestation in provinces where wood for energy comes from natural forests (Mahajanga, Toliary and Antsiranana). Investments in these three activities themselves are likely to be beneficial for the country. Indeed assessments conducted at the end of EP II has shown the economic viability of these investments even when off site benefits associated with conservation agriculture and reforestation, health benefits and reduction in carbon dioxide emissions from improvement of charcoal making and wood stoves have not been included in the calculations.

Over 15 years, cumulative losses in *tavy* paddy production due to avoided deforestation are close to 4 million tons. Using conservative hypotheses, the relative increase in *tanety* rice cultivation yields from soil protection is of around 14 tons per hectare over 15 years compared to the situation without the project (see Annex 4 for details of the calculations). Consequently, in order to offset the loss of *tavy* production from the halt of deforestation in the project area, there is a need to cover 280,000 ha of *tanety* rice cultivation with soil conservation practices. In this context, activities of the Bank-financed PADR aimed at promoting conservation agriculture are an important complementary activity besides the EP III programmed activities in this arena.

Over 15 years, cumulative losses in non sustainable fuelwood collection production due to avoided deforestation are near 8 million tons. Using conservative hypotheses, the progressive transfer to community based forest management over a period of 5 years allows for an increase in wood for energy harvest of 0.35 tons per hectare as compared to the situation without the project. Over a period of 15 years the 1 million hectares of community managed forest will yield 4.5 million tons of wood for energy, almost half of the

non-renewable loss due to the halt of deforestation on the project's 6 million hectares of natural forest. Furthermore, improvements in carbonization and wood stoves will reduce the cumulative consumption over 15 years of wood for energy by 7.5 million tons, maintaining national consumption at the current level of 10 million tons per year. These improvements neutralize the effects of population growth on wood for energy consumption. Using these hypotheses, 55 000 hectares of reforestation are necessary to accompany the renewable harvesting of wood in community based forest management areas and provide the second half of the non-renewable loss due to the halt of deforestation on the project's 6 million hectares of natural forests.

Thus the real challenge in terms of natural forests management sustainable financing is to be met outside forests themselves and recourse to ODA is justified to complement redistribution mechanisms of national benefits generated by natural forests conservation. Unlike a pure financial system of compensation, this source of financing, though not sustainable, may bring about a long lasting change of mentalities, which is another contribution of the project to poverty alleviation Madagascar.

Fiscal Impact:

Once the project is finished, the increase in recurring costs for the MinEnvEF from the project will include: (i) management costs of 2 million hectares of protected areas, (ii) management costs of 3 million hectares of conservation sites; and (iii) costs associated with 1 million hectares of community managed forests. A detailed calculation of the recurrent costs has been conducted for protected areas and extrapolated to conservation sites (see Annex 4 for details). The costs breakdown as follows, \$5 per hectare for protected areas or \$10 million per year and \$1 per hectare for conservation sites and community managed forest or an additional \$3 million per year for the MEEF and \$1 million for the concerned communities. Given the ineffectiveness of the Ministry in its current form and structure, one could argue that increased efficiency of existing operational costs could go a long way in absorbing costs associated with conservation sites.

When considering the specific situation of Madagascar and particularly the extreme poverty of both the urban and the rural population, the identified sources of financing for these recurrent costs include: (i) eco-tourism rent, (ii) willingness to pay of developed countries for the preservation of Madagascar's endemic biodiversity, and (iii) a green tax to promote sustainable production practices of charcoal. As noted above, the long term financing of conservation sites is the most problematic due to reliance on a single source of revenue that is not sustainable unless it has been capitalized in an endowment fund.

3. Technical:

EP-III Results Framework. The considerable amount of time and efforts that have been invested in the elaboration of the Results Framework by the stakeholders under the guidance of a specialized consulting firm has resulted in a common and widely shared understanding of how proposed activities, results and impacts of a large program such as EP-III relate to each other. Lengthy discussions have also contributed to the establishment of a set of monitoring and performance indicators that are generally considered to be realistic, thereby avoiding the trap that overly ambitious targets agreed during preparation become unrealistic benchmarks during implementation. Last, but not least, the elaboration of a common Results Framework has led to an orientation on outputs and results on the ground which is expected to have a positive impact on implementation quality.

Protected Areas Management. The GEF STAP Roster Technical Review carried out for the protected

areas management component of the project confirms that "it presents an excellent balance between conservation, sustainable use of biodiversity and capacity building at local and governmental level". In addition, planned investments to improve the representativeness and increase the coverage of national protected areas system is based on an explicit prioritization matrix, including the following criteria: (i) diversity; (ii) uniqueness; (iii) vulnerability; (iv) hydrological importance; (v) actual visitor numbers and eco-tourism potential; (vi) impact on local development; (vii) infrastructure and equipment needs; (viii) capacity building needs; (ix) self-financing capacity and financing needs. The STAP review is provided in Annex 14.

Forest Ecosystems Management. Design of the component draws on a review of the forest sector carried out by the Bank in August 2002 as a background study for the Rural and Environment Sector Review ESW. Following recommendations of this review, the project emphasizes addressing the governance agenda as well as investing in institutional capacity at the field level based on an agreed institutional vision. Perceived complexity of GELOSE/GCF procedures is addressed by using the recently completed guide for a simplified approach for land use management plan as a reference for the proposed forest management transfer activities under the project. Design of the domestic energy subcomponent builds on pilot activities put in place by the Bank-financed Energy-II project which closed in June 2003. Community implementation mechanism and the developed incentive framework also reflect the design of a successful domestic energy project in Chad.

Environmental Mainstreaming. Project support for the establishment of a one-stop-shop for MECIE legislation compliance builds on the results of an evaluation carried out by WWF which was published in July 2003. Arrangements on the division of institutional responsibilities between DGE and ONE concerning the application of MECIE legislation, builds on recommendations of the Institutional Assessment that was carried out as part of the project preparation indicating that operational responsibilities should be concentrated in specialized institutions, while the Ministry itself should focus on policy-making and regulatory functions.

4. Institutional:

The institutional framework for the environment has been evolving over the course of the implementation of the NEAP. Under EP-I and EP-II there was a strong drive to increase institutional coverage through the creation of specialized institutions, including ONE, ANGAP, ANAE, SAGE and CFSIGE. Following the creation of the Ministry of the Environment in the late 1990s, a process of consolidation, also recommended by an OED evaluation in 2000, was slowly set into motion under which ANAE, SAGE and CFSIGE were put at arms length from EP-II and required to operate as independent service providers. The lack of a clear division of institutional responsibilities between the Ministry and ONE has been a major source of institutional friction during EP-II. Environmental units that have been set-up in the sector ministries under EP-II, with the aim to mainstream environmental issues into sector programs, are very weak. Recognizing the need for a broader landscape approach to promote biodiversity conservation outside protected areas, brought the Ministry of Water and Forests on board of the environment program with the launch of EP2. Mounting governance problems in the forest sector however frustrated attempts to improve capacity and performance of forestry-related institutions under EP-II. The merger of the Ministry of Water and Forests and the Ministry of Environment into a single Ministry of Environment, Water and Forests in January 2003 again changed the institutional set-up substantially, albeit in a positive manner as it provides a strong signal that the GoM, in line with its overall orientation of "rapid and sustainable development", establishes conservation, rather than exploitation, as the guiding principle for natural resources management in Madagascar. Recognizing that the creation of a single Ministry had created a unique window of opportunity to align the sector institutional framework with this principle, a comprehensive institutional assessment has been carried out as part of the project preparation process to translate this idea into a concrete vision for the sector. Details of the institutional assessment are provided in Annex 15.

4.1 Executing agencies:

Experience under EP2 learns that institutional efficiency might have been compromised as a result of excessive concentration of regulatory, enforcement, advisory, training, research, donor coordination and NEAP oversight functions within ONE. As far as IDA/GEF support to EP-III is concerned, the goal would be to work directly with the executing agencies concerned, rather than indirectly through ONE as under EP2. Hence, execution of activities under the Bank/GEF project would come under full control of ANGAP, ONE, DGEF and DGE. It is expected that this would improve the quality of the dialogue as it would provide better opportunities to interact with the regional structures of the executing agencies. DGEF will subcontract part of the household energy activities to the Cellule Energie Domestique in Mahajanga that will be scaled-up as part of the GoM's implementation capacity.

4.2 Project management:

A Project Implementation Support Unit (PISU) would be responsible to assist ONE, DGEF, DGE and ANGAP in the execution of the project as far as procurement, financial management, M&E and reporting functions are concerned. The Unit would consist of a team of dedicated professionals with relevant disciplinary backgrounds for the purposes of the Project. It would include a manager, procurement and financial management specialists, internal auditors, as well as M&E and safeguards specialists. The PISU manager would report directly to the Minister of Environment, Water and Forest. Based on agreed annual operative plans and corresponding result agreements between the executing agencies and the Minister of Environment, Water and Forests, the head of the agencies would have full authority to execute these plans. Financing of the operative plans will be authorized by the Minister or his representative based on agreed deliverables as verified by the PISU. In order to maintain a strictly technical focus of the PISU, operational procedures of the project would be designed in such a way that the selection of professionals is done on an objective basis in a transparent and competitive manner. After year 1, and provided that conditions are met, it is expected that the Foundation for Protected areas and Biodiversity will be used as a pass-through to support its operationalization prior to the endowment to be provided later

4.3 Procurement issues:

The third Country Procurement Assessment Review (CPAR) for Madagascar was conducted in November 2002, followed by a workshop in June 2003 for the validation of a joint CPAR/CFAA action plan to ensure rapid implementation of procurement reforms. Key elements of the intended procurement reforms are: (i) revision of the draft procurement code to ensure transparency, to simplify procedures, and to comply with international standards, (ii) establishment of effective procurement institutions to ensure that the new regulations will be adequately applied and to provide sufficient oversight and control and to improve efficiency through adequate delegation of responsibilities and (iii) implementation of adequate training and capacity building to ensure the sustainability of the procurement reforms. The existing Procurement Code of 1998 will continue to be applied until the enactment of the new code. The World Bank ascertained that deficient features identified in the 1995 CPAR have been properly addressed. IDA standard bidding documents (SBDs) are widely used. An area of concern, however, is the cumbersome and overly bureaucratic approval process for contract signing by the Government which causes unnecessary delays. In addition, insufficient programming and procurement planning contribute to delays in project implementation which results in slow disbursement. To mitigate risks of delays for the proposed project, proper prerequisites for the use of Bank standard bidding documents, including evaluation reports for National Competitive Bidding procedures (NCB) have been agreed upon with Government during negotiations. The procedures manual will be updated as a part of the Project Implementation Plan.

A Procurement Capacity Assessment of the PISU including training needs and arrangements, was conducted as part of the project preparation. On the basis of the initial assessment, an action plan was drafted to address areas where the PISU needs to be strengthened. The action plan includes (i) a specific section on procurement in the Project Implementation Manual; (ii) the organization of the filing of procurement-related documents; (iii) procurement training sessions for project staff; and (v) the financing of independent procurement and technical audits to be carried out on a regular basis (see Annex 6 for details).

4.4 Financial management issues:

The financial management arrangements of the PISU, ONE and ANGAP in charge of the implementation of the project have been reviewed during the pre-appraisal stage in order to determine whether they are acceptable with regard to IDA requirements. The conclusion of this review proposed the implementation of an action plan to strengthen the financial management systems of the PISU, ONE and ANGAP and to build their capacity to produce quarterly Financial Monitoring Reports (FMRs) with the designed format provided in the Annex A of the FMRs Guidelines for World Bank-financed Projects. The agreed measures to be implemented include the following:

- For the main implementing agency -- the PISU -- in charge of the financial management of the program as well as the maintenance of the DGEF and the DGE accounts: (i) recruitment of the accounting staff, namely the three accountants for the PISU, DGEF and DGE; (ii) preparation and implementation by a consultant acceptable to IDA of an accounting and financial manual of procedures in order to facilitate adequate record keeping, satisfy reporting requirements and ensure consistent application of control procedures; (iii) review of the accounting software used by the Ministry of Environment during EP2 to allow timely production of all financial reports required for managing and monitoring project activities; (iv) users training provided by the manufacturer of the accounting software; (v) recruitment of an accounting firm acceptable to IDA to audit the EP3 accounts;
- For ONE: (i) review of the current accounting manual of procedures and the accounting software in place to satisfy reporting requirements;

- For ANGAP: (i) recruitment of a director of finance; (ii) clear definition of the entity's organizational structure and responsibility assignments with respect to the following functions: budgeting, accounting, administration of cash/bank accounts and procurement; (iii) update of the accounting manual of procedures by a consultant to facilitate adequate record keeping and the maintenance of proper control over assets; (iv) adjustment of the accounting software in place by the manufacturer and organization of users training to allow timely production of all financial reports required for managing and monitoring the entity's activities; (v) implementation of an internal audit department with an adequate number of qualified staff.

Regarding the DGEF (Direction Générale des Eaux et Forêts) and the DGE (Direction Générale de l'Environnement) also involved in the implementation of EP3 activities, no financial management assessment was carried out as they are parts of the Ministry of Environment, Water and Forestry (MEnvEF). It was agreed that within the context of EP3 their accounts will be maintained by the PISU to be established within the MEnvEF. However to facilitate the flow of funds and ensure timely payments of private firms, consultants and other agencies they have contracted, DGEF and DGE will be staffed with treasurers responsible for: i) assuring individual payment of works completed and services rendered; ii) maintaining a simple cash book showing clearly cash received, payments made and cash balances. Both DGEF and DGE have qualified staff to perform this cash management function.

5. Environmental: Environmental Category: B (Partial Assessment)

5.1 Summarize the steps undertaken for environmental assessment and EMP preparation (including consultation and disclosure) and the significant issues and their treatment emerging from this analysis.

A full environment assessment (EA) for the Environment Program phase 3 has been carried out by recruited local consultants. This study provides a systematic analysis of all potential biophysical and social impacts associated with the implementation of program and activities generated under EP 3. The EA includes: (i) a diagnostic of each sub component (forestry, protected areas and environmental mainstreaming activities) in terms of policy, institutional, regulations, conventions relevant to environment preservation; (ii) the analysis of project impacts on social aspects and the environment; (iii) propositions of mitigation measures to limit these impacts, and (iv) the establishment of an environmental management plan. The EA methodology is based on documentation and technical analysis and a consultation of concerned stakeholders in each sub-component. The analysis has highlighted the fact that under the project no major effects/impacts related to displacement of population are foreseen. Major effects/impacts in category 2 are recorded in activities related to the creation and classification of protected areas and conservation sites, as well as in eco-tourism development actions. For the specific case of the Mikea Forest, a strategic framework (see annex of the EMP) has been prepared to serve as a basis for the elaboration of an Indigenous Peoples Development Plan. Such IPDP should be developed by and for the Mikea people and will define the program and activities that Mikea consider as profitable for them in terms of social, economic and cultural development.

5.2 What are the main features of the EMP and are they adequate?

The project, through its EMP, includes mitigation measures and would finance the development of mechanisms for the review of components with regard to potential negative impacts, and for their supervision and monitoring. The EMP includes a typology of activities categorized 2 and 3 that would require integrated environmental assessment/analysis. The development of capacity and awareness for environmental management, at the beneficiary level, would be emphasized. Moreover, communication programs and legal surveillance would be undertaken. The EMP defines, then, the role of different entities concerned with the implementation of EP3 at different levels to ensure that environmental concerns are incorporated throughout activities that are in relation with natural resources. The EMP would form the

basis for the implementation of site- specific environmental screening and assessment in relation to investments that are proposed to be financed under the project as part of annually agreed operative plans.

5.3 For Category A and B projects, timeline and status of EA:

Date of receipt of final draft: September 2003

ASPEN has cleared the report for disclosure and the Government has disclosed it for consultation and review by the general public on November 24, 2003.

5.4 How have stakeholders been consulted at the stage of (a) environmental screening and (b) draft EA report on the environmental impacts and proposed environment management plan? Describe mechanisms of consultation that were used and which groups were consulted?

(a) ANGAP has prepared a Process Framework with active involvement of the *Comités Regionales d'Orientation* (CROs), consisting of representatives of communities in and around protected areas, local government, deconcentrated public services and partner NGOs. As far as the elaborated Indigenous Peoples Development Strategy for the Mikea population is concerned, the EA team visited the Mikea forest area to consult with Mikea population, local administration, and local organizations in order to establish the Development Plan of the Mikea Population. The social impact analysis focusing on the Mikea forest has been carried out in close collaboration with WWF, the technical services of ministries involved, researchers and local authorities.

A small Steering Committee in the MinEnvEF has been set up in view to coordinate the EA/EMP and to provide assistance to the consultants. The agreed EP3 results framework, along with defined indicators as well as the results of the institutional assessment have been used as a point of departure to draft the EA/EMP report. Subsequently, each component and its correspondent activities have been discussed in detail with each EP3 implementing agency in order to identify potential negative environmental impacts. This screening task has resulted in the classification of each activity under a specific environmental impact category following World Bank Safeguards Guidelines and national categorization criteria defined in MECIE Decree No. 99-954 of December 15, 1999. Based on the initial screening, the following steps have been carried out: (i) information related to maps, figures on deforestation, biodiversity and impact of degradation have been checked with International NGO's; (ii) information related to impact by eco-tourism activities has been discussed with tour operators; (iii) sectorial Ministries have been consulted regarding land tenure and fisheries aspects; (iv) field visits have been conducted for a sample of envisaged intervention areas where a participatory process of consultation has been taken place representatives of communities, civil society and local administration. Based on these discussions and consultations a draft EA/EMP has been presented to the joint GoM-donor EP3 Task force for comments and feedback. Subsequently, the documents have been presented to ONE and MinEnvEF in order to verify its compliance with national legislation. Finally, the draft EA/EMP has been submitted to Bank for review according to its Operational Guidelines. Following approval by the Bank, MinEnvEF has launched the disclosure process of the EA/EMP. For this purpose, it will: (i) organize workshop on November 24, 2003, with the participation of government agencies, donors, international NGOs that co-finance EP3; and (ii) a national TV debate session with the participation of civil society and private sector. Comments from the concerned entities would be incorporated in the final version. The executive summary would be translated in Malagasy language and published through daily newspapers and disseminated to communes located in EP3 intervention areas. The EA emphasizes the need for capacity building of beneficiaries. In this respect, training and IEC activities will be planned for monitoring and evaluation systems to follow-up on the impact of proposed measures. Lastly, each implementing agency will include an environmental assessment/management section in its operational procedures that reflects the results of the EA report.

5.5 What mechanisms have been established to monitor and evaluate the impact of the project on the environment? Do the indicators reflect the objectives and results of the EMP?

A framework agreement between the Ministry of Environment and Water and Forests and the Executing Agencies of EP 3 would be set up. Based on the results of the EA, the agreement would define the modalities and indicators for the monitoring and evaluation systems needed to assess the impact of proposed measures indicated in the EMP. Then, it is envisaged that all protected areas and natural forests will eventually dispose of zoning plan and management plan that are agreed on with neighboring communities and local government and that could be use as a benchmark for monitoring environmental quality by the respective executing agencies.

6. Social:

6.1 Summarize key social issues relevant to the project objectives, and specify the project's social development outcomes.

As part of the project preparation process, a number of social analytical activities have been carried out covering the following subjects: (i) stakeholder analysis, (ii) gender assessment; (iii) resettlement process framework; and (iv) a strategy for the preparation of an indigenous peoples development plan for the Mikea population. Implementation of these activities was carried under coordination of the GoM and involved extensive field visits and consultations with local populations. Results of these activities are included in Annex 12 and the Project Files. The central premise of these activities has been to optimize the project design in a manner that would enable achievement of desired positive social outcomes and put in place adequate mitigation measures and mechanisms aimed at avoiding or reducing possible negative social impacts.

The results of the social analysis suggest that effective participation and voice of local populations, adequate environmental knowledge, and alternative revenue-generating potential are key determinants for effective biodiversity conservation and sustainable natural resources management. Specific social issues that come into play in relation to achieving the project's major social development outcome aimed at improving livelihood conditions for people in critical eco-regions are various, including: (i) access of local communes to revenue-generating potential of protected areas; (ii) need for collective responsibility for forest fire control at communal level; (iii) required knowledge and organizational capacity of communes to effectively reap benefits associated with forest management transfers; (iv) mobilization of representative local voice in preparation of forest zoning and management plans; (v) explicit recognition of local cultural heritage in PA management plans; (vi) compatibility of existing NRM strategies of local populations with biodiversity conservation objectives of new to be established PAs and conservation sites; and (vii) protection of the unique culture and livelihood of the indigenous Mikea population under any new biodiversity conservation arrangement affecting their territory.

In order to effectively deal with these issues, a range of elements and arrangements have been included into the project design. First, in order to avoid potential negative social impacts it has been agreed with the GoM, and in line with its commitment to the principle of "parks with people", that the creation of new protected areas would not involve any resettlement of people. As far as the establishment of new protected areas is concerned, this agenda is also kept relatively limited under EP3. Even though existing revenue sharing and income and employment-generating activities should provide benefits to local communities, it is recognized there could be negative impacts affecting them in the short-term, following restrictions on the use of natural resources within protected areas and corresponding buffer zones and corridor areas. In order to deal with this and in line with OP 4.12, a process framework has been developed that would be applied for all new PAs to be established under EP3 in order to reach agreement on the arrangements for compensation for loss of access and property of livelihoods within newly established protected areas. The

conservation of Mikea Forest requires special attention as the dry Mikea Forest in the south-west is inhabited by the Mikea people who are indigenous people to Madagascar. The Mikea have an identity which is dependent on living in the forest and a subsistence based on forest resources. The forest is progressively reduced by deforestation which is caused in-moving migrants practicing slash and burn techniques. In line with requirements of OD 4.20 a strategy has been prepared which will result in the design of an Indigenous People's Development Plan which will be a condition for establishment of any biodiversity conservation arrangement affecting Mikea territory. During Negotiations it will be agreed with the GoM that the establishment of any formal biodiversity conservation modality for the Mikea forest will be subject to the adoption of a Mikea Development Plan acceptable to IDA. For this purpose, the Minister of the Environment, Water and Forest has already sent a written communication to the Bank, confirming GoM's agreement. Second, in order to create enabling conditions for positive social outcomes, the project design calls for the following: (i) incorporation of specific capacity building, awareness and civil society involvement activities in PA management; (ii) prolonged TA for communes involved in forest management transfer contracts (GELOSE/GCF) with specific support for the development of niche markets for biodiversity products; (iii) establishment of local stakeholders committees at level of each CIREF to accompany forest zoning exercise; (iv) support to creation of permanent communal fire control committees and alternative solutions to *tavy* with performance linked to scope of communal public investment program; and (v) inclusion of explicit environmental education and information activities in EP3.

6.2 Participatory Approach: How are key stakeholders participating in the project?

Key stakeholders include: (i) local populations in protected areas, natural forests, PA bufferzones and eco-corridors; (ii) local ONGs: ANAE, SAGE and others; (iii) relevant sector ministries: MAEP, Education, Tourism, Energy; (iv) private sector: eco-tourist operators, economic operators in the forest sector, and (v) International NGOs. Their specific interests in EP3 are outlined in Annex 12. Representatives of each category of stakeholders have participated in the formulation of the EP3 Results Framework through various workshops organized by MinEnvEF during the course of the project preparation process.

Local populations will participate in the project through various activities, mechanisms and structures. As far as protected areas and buffer zones are concerned, participatory PA management committees (COGES) and regional committees (CROs) with representatives of communes in and around PAs play an active role in the preparation, implementation and monitoring of PA management plans. Specific training activities are geared towards increasing employment of local park guides in PAs. Communes in PA buffer zones will also receive 50% of park entrance fees that can be used for the financing of communal infrastructure. As far as participation of local populations in forest management activities are concerned, a number of platforms will be established, including: regional committees to accompany forest zoning; communal fire control committees, and communal reforestation reserves. Envisaged forest management transfer arrangements (GELOSE/GCF) are geared towards empowering local communes to take management of natural resources into their own hands so as to maximize financial benefits from good management practices, while clarifying their rights vis-a-vis outsiders. Local populations will also have a voice in EP3 monitoring and evaluation efforts focus group discussions and beneficiary assessments.

As far as the participatory process concerning the establishment of new protected areas, conservation sites and land reserves for reforestation are concerned, the agreed process framework calls for the following steps in each specific case: (i) public consultation; (ii) identification and census of affected populations and vulnerable groups; (iii) participatory diagnostics; (iv) participation of affected groups in the local and regional management structure of newly established protected areas, conservation sites and land reserves for reforestation.

Local NGOs, including ANAE and SAGE, will participate in the project as service providers for the delivery of specific EP3 outputs, particularly those that relate to activities at the commune level, including: (i) forest management transfer; (ii) reforestation; (iii) NRM investments in buffer zones and eco-corridors. At the same time, they will have a voice at a more strategic level through their participation in the joint GoM-donor EP3 taskforce.

EP3 will coordinate activities with programs and investments of other sector ministries through the high-level GoM-donor Rural Development and Environment Group (*Groupe de Concertation Conjoint pour le Développement Rural et L'Environnement*), chaired by the Primature/Vice-Primature and co-chaired by the (rotating) President of the Donor's Group (*Groupe de Multi-Bailleurs de Fond*). For activities with an inter-ministerial nature (e.g. domestic energy, rural production intensification, environmental education, eco-tourism), MinEnvEF will enter into specific protocols to ensure adequate coordination at the operational level.

Private sector operators, including those in the eco-tourism sector as well as the forestry sector, have actively participated in the project preparation process and will continue to do so during EP3 implementation. As far as visitor service and infrastructure in PAs is concerned, ANGAP will maintain a permanent dialogue to ensure that envisaged investment respond to eco-tourism sector needs. Eco-tourism client surveys will be part of the EP3 M&E system so as to obtain feedback about the relevance and performance of these investments. As far as the forest sector is concerned, DGEF will establish a partnership with economic operators in order to professionalize the sector and put in place co-responsibility arrangements for good governance.

International NGOs, including WWF, CI and WCS, participate in EP3 as donors as well as service providers to take on specific tasks. They have played a very significant role in shaping the EP3 Results Framework through their active participation in the joint GoM-donor EP3 taskforce and will continue to do so during program implementation. Participation of WWF and CI in EP3 also takes on an important dimension as being founders and members of the Board of Directors of the Madagascar Protected Areas Foundation that will be established as part of EP3 with the aim to put financing of the environment on a more sustainable footing.

6.3 How does the project involve consultations or collaboration with NGOs or other civil society organizations?

Collaboration with international NGOs is very close as they participate in EP3 as cofinancing partners (e.g. CI, WWF, WCS). They will continue to provide strategic guidance and operational support during EP3 implementation through their participation in the joint GoM-donor EP3 taskforce, as well as their active involvement in the launching and management of the Madagascar Protected Areas Foundation. Local NGOs and other civil society organizations have had and will continue to have the opportunity to participate in consultations that have been and will continue to be organized as part of the project preparation process. Moreover, they will have ample opportunities to participate in EP3 as service providers. At the same time, through the existing National Council for the Environment, civil society at large has a permanent voice as far as environmental issues are concerned.

6.4 What institutional arrangements have been provided to ensure the project achieves its social development outcomes?

CROs will be the main vehicle to ensure that PA management plans are established and carried out in a manner that reflects the interests and aspirations of local populations. Under EP3, one representative of the

CROs will be included in ANGAP's Board of Directors so as to provide a direct voice of local stakeholders as far as strategic decision-making is concerned. Communal fire control committees and communal reforestation reserves (*Reserves Foncières Communal pour le Reboisement*) will be key participation platforms and delivery mechanisms for EP3 activities related to forest ecosystems management. Envisaged project support to OSF, aimed at strengthening independent oversight and watch-dog functions, will play an important role to prevent that privileged groups or individuals disproportionately capture and/or exclude others from benefits. The proposed new institutional framework of MinEnvEF, to be put in place under EP3, would strengthen the presence of the Ministry on the ground, thereby putting in place conditions for improved public service delivery which is expected to positively affect the achievement of expected social development outcomes of the project.

6.5 How will the project monitor performance in terms of social development outcomes?

The EP3 Results Framework includes specific social development indicators at the impact as well as the output levels. At the impact level, these indicators focus on people, while at the output level they have been formulated in institutional as well as in economic terms. In order to generate corresponding data that will allow adequate monitoring of project performance based on these indicators, the M&E system will deploy a number of specific instruments, including: (i) focus group discussions; (ii) beneficiary assessments; (iii) commune feedback surveys; (iv) site inspections; and (v) OSF audits. In this context, ONE's Environmental Dashboard to be supported by the project, will be expanded so as to cover specific regions. As part of EP3's communication strategy, M&E information and reports will be disseminated to local populations in EP3 interventions zones, decision-makers, as well as the general public.

7. Safeguard Policies:

7.1 Are any of the following safeguard policies triggered by the project?

Policy	Triggered
Environmental Assessment (OP 4.01, BP 4.01, GP 4.01)	<input checked="" type="radio"/> Yes <input type="radio"/> No
Natural Habitats (OP 4.04, BP 4.04, GP 4.04)	<input checked="" type="radio"/> Yes <input type="radio"/> No
Forestry (OP 4.36, GP 4.36)	<input type="radio"/> Yes <input checked="" type="radio"/> No
Pest Management (OP 4.09)	<input type="radio"/> Yes <input checked="" type="radio"/> No
Cultural Property (OPN 11.03)	<input type="radio"/> Yes <input checked="" type="radio"/> No
Indigenous Peoples (OD 4.20)	<input checked="" type="radio"/> Yes <input type="radio"/> No
Involuntary Resettlement (OP/BP 4.12)	<input checked="" type="radio"/> Yes <input type="radio"/> No
Safety of Dams (OP 4.37, BP 4.37)	<input type="radio"/> Yes <input checked="" type="radio"/> No
Projects in International Waters (OP 7.50, BP 7.50, GP 7.50)	<input type="radio"/> Yes <input checked="" type="radio"/> No
Projects in Disputed Areas (OP 7.60, BP 7.60, GP 7.60)*	<input type="radio"/> Yes <input checked="" type="radio"/> No

7.2 Describe provisions made by the project to ensure compliance with applicable safeguard policies.

An overview of the provisions to ensure project compliance with applicable social and environmental safeguard policies are described in Annex 12. As far as environmental safeguards are concerned and in line with requirements under environmental category B, screening mechanisms have been prepared and will be put in place for subprojects in buffer zones and for visitor infrastructure in national parks. As far as social safeguards are concerned, it has been agreed that the creation of new protected areas would not imply any involuntary resettlement. In addition, a process framework has been prepared and agreed that defines procedures to be followed in case conservation measures result in loss of access to resources that are exploited by people living in and around protected areas. In the particular case of the Mikea population who are recognized as Indigenous Peoples under OD 4.20, an Indigenous Peoples Development Strategy has been elaborated that lays out the steps for the preparation of an Indigenous Peoples Development Plan. It has been agreed that establishment of a protected area covering the Mikea Forest, will be subject to the

presentation of an IPDP, acceptable to IDA, that demonstrates that the creation of a protected area is confirmed by the Mikea people as a true reflection of their views and aspirations.

F. Sustainability and Risks

1. Sustainability:

Institutional sustainability: The NEAP has supported successive iterations of capacity building, reflecting the evolution of conservation needs and opportunities over the past decade. Institutional capacities to perform a broad array of conservation functions have been developed, evidenced amongst other things in the establishment of a national management system for protected areas. Individual capacities have been strengthened across a range of conservation management disciplines. An underlying policy and legislative framework for conservation has been put in place. Notably, a framework has been established to transfer usufruct rights and management responsibilities for natural resources to local communities, addressing a key determinant of habitat destruction, rooted in open access to common property resources. Communities now have a utilitarian incentive to better protect and manage natural resources. In the medium-longer term, the clarification of these rights and the strengthening of incentives through the development of market-oriented management models is expected to put a break on population in-migration to the forest edge.

NEAP interventions have demonstrably reduced threats to biodiversity. EP II has made a start in moving towards environmental sustainability. There is emerging evidence that environmental degradation in areas covered by EP II is notably slower than elsewhere. According to the most recent figures provided by Conservation International, based on analysis of NASA satellite imagery, the area under natural forests in 2000 was 8.9 million ha or 8.6% less than in 1990. Deforestation in protected areas (1.9%) was however significantly lower than in ordinary forest reserves (12.9%). For the ten year period between 1990 and 2000, the rate of habitat clearance in core protected sites supported under NEAP has been around 1.9%, which is considerably less than the mean of 8.6% for the country as a whole. However, it is accepted that further support is needed to address conservation needs at the larger landscape level, where anthropogenic pressures on ecosystems remain high. Accordingly, a further iteration of capacity support for institutional development, policy reform and training and knowledge management will be provided under EP III.

In particular, targeted support will be provided under EP III from IDA, USAID and others to strengthen management of the forest sector, and introduce new regulatory tools and management systems to improve the instruments already developed for forest conservation. GEF support will be targeted at further maturing operational capacities for protected area management, at select sites, which will act as a nucleus for further management innovation, as necessary to improve sustainability. Community level management capacities for sustainable natural resource management would be strengthened through the development of improved models for integrated resource management. Asymmetries in current capacities between regions and institutions will be addressed through the improvement of communications systems, and knowledge management. Collectively, these interventions are expected to compound gains under earlier phases of NEAP, and improve prospects for assuring the sustainability of conservation interventions.

Financial sustainability: Economic analyses undertaken during EP II have identified substantial derivative domestic benefits from conservation. These include dividends from the development of unrealized recreational tourism, the maintenance of vital hydrological service functions, and sustenance of other environmental goods and services. Many conservation sites are expected to yield a positive financial internal rate of return on investment, were these benefits to be monetized. Park entrance revenues, although still modest in absolute terms, have shown steady growth and are increasingly important for ANGAP as

well as communities located in buffer zones of protected areas.

EP III aims to accelerate and broaden the move towards financial sustainability through the following measures. First, a trust fund, to be managed by the Madagascar Protected Areas and Biodiversity Foundation, will be established which would provide assured and long-term financing for protected areas in Madagascar. Second, revenues from the tourist sector are also considered an important source of sustainable financing. Third, MinEnvEF aims to complete restructuring of the concession fee system under which most of the revenues will be channeled to communities, thereby providing greater incentives for the collection of concession fees. Fourth, the National Office of the Environment will implement a strategy for higher cost recovery of its environmental impact assessment review fund. Fifth, the development of new sustainable financing mechanisms would be explored under EP III, covering, among other, carbon sequestration, bioprospecting rights, non-wood forest products, and others

Results to date include progress in development of a marketing and business plan for ANGAP and revision of the entry fee system for flagship parks, reconstruction of the concession fee system through MinEnvEF including greater decentralization for management and use of funds, and preparation of a strategy for higher cost recovery of ONE's environmental impact assessment review fund. It is recognized that the prospect of effectively putting sustainable financing mechanisms for the environment in place depends strongly on the ability of EP III to: (i) generate success on the ground; (ii) address existing governance problems; and (iii) communicate its results and achievements to relevant stakeholders and the general public.

Financial sustainability over the long-term would be secured and is based upon four pillars, namely a cost reduction strategy and action plan, an increased management efficiency index, sufficient fund raising to contribute to the endowment and leveraging donor financing. In this context, Madagascar has created an exceptionally strong economic incentive for communities surrounding protected areas to protect and conserve the PAs. A full 50% of park entrance fees are shared with these local communities. During EP III, greater emphasis will also be placed on mainstreaming improving/developing sustainable, replicable natural resource management models that become self-financing. Clear opportunities exist for improved models that generate economic benefits and incentives while conserving biodiversity and ecosystem functions. EP III would support the development of economically and ecologically sustainable models for small scale enterprises, such as non-timber forest products; community plantations; and sustainable harvesting of fisheries, forests and wetlands (mangrove management), that can contribute to poverty reduction and rural development. It will also support the development of markets for environmental services. A portion of the takings from tourist visa fees could be earmarked from the fiscus for the management of Protected Areas and ancillary conservation operations. Opportunities for introducing water user fees will be explored, where there is demonstrable ability and willingness to pay. Other measures to raise funding to finance the public service delivery capacity of the State will be pursued, such as the dedication of a portion of debt forgiveness under the HIPC scheme to the environment sector. Financial instruments to recover rent from natural resource management will be developed. Recognizing that owing to the leakage of global benefits some protected areas are unlikely to be viable if justified solely in terms of the domestic cost-benefit calculus, IDA will support the operationalisation of the Trust Fund, to help provide predictable financing to defray local costs.

These interventions are expected to result in improved prospects for assuring the financial sustainability of NEAP following the cessation of EP III, culminating in the reduction of reliance on external assistance. Overall, it is expected that EP III's emphasis on participatory implementation mechanisms and community empowerment, on putting in place an improved M&E system, on its intent to address governance issues in the forestry sector heads-on, and on its support for environmental education and dissemination of

environmental information, would generate an enabling environment to achieve its sustainability objective.

1a. Replicability:

NEAP constituted one of the first attempts at establishing an integrated programmatic approach to biodiversity conservation in the Africa/ Indian Ocean region. The program has generated valuable lessons that have played a seminal role in informing the design of other initiatives in the region. The key lessons incorporated into the project design include a streamlined program approach, improved coordination with other programs and a strong emphasis on performance-based implementation mechanisms.

Replication plan

As the program matures further, it is expected to generate additional lessons with important bearing on conservation strategies in other areas. At the end of this project, the project design incorporating the lessons learnt could be replicated in other areas with similar socioeconomic fundamentals and supporting policy frameworks or within remaining areas in the same geographic location through other sources of funding. The proposed new financial mechanisms will provide one means of expanding conservation programs to cover additional areas, and thus assure better bio-geographic coverage.

As a result of the capacity building and training of individuals, and institutions during the duration of the project, EPIII's achievements will be expanded in other regions of the country. The replication approach will include facilitating exchange of information and good practices (knowledge transfer) through information dissemination workshops which include the publication of project result documents, and multi-stakeholder negotiations at both the grass-roots and national levels. The knowledge management systems that will be developed will be accessible by conservation practitioners working in other areas providing a vehicle for transferring positive experiences and lessons. Select lessons and best practice guidance will be translated into English to abet replication. Additionally, a public awareness campaign will be implemented to enable both increased awareness and an environmental behavioral change. It will include media campaigns at the national level, design and maintenance of PA internet home pages, production of PA related education materials aimed at school children in the region and printed and audiovisual materials distributed through local media. A budget will be earmarked for such knowledge transfer and institutional strengthening activities.

A key strategy of EP III is to nest environment into development, and to ensure that regular rural development programs (such as Rural Development Support Projects of the World Bank, African Development Bank, USAID, Kfw, UN Agencies, and NGOs such as CARE amongst other actors) provide a vehicle for replication. The donor coordination system established for rural development, environment and food security provide a framework for assuring such integration, as does the poverty reduction strategy. Specific policy guidance will be developed to promote replication through this driver. At the local level, community exchanges and study tours are expected to play a sizable role in disseminating information on promising natural resource management models, cultivating interest amongst local communities for replication, within the context of such rural development programs.

2. Critical Risks (reflecting the failure of critical assumptions found in the fourth column of Annex 1):

Risk	Risk Rating	Risk Mitigation Measure
From Outputs to Objective Slow economic growth in the rural sector increases external pressure on protected areas.	M	Project would support: (i) implementation of park entrance revenue sharing program with communities located in buffer zones; and (ii) improving local participation in the management

Confusion about set of objectively verifiable biodiversity indicators hamper measuring of impacts on the ground	N	of protected areas. Development of comprehensive M&E system as part of project preparation process.
Communities do not have the capacity to enforce accountability requirements that come with increased empowerment	S	(i) Incorporation of capacity building efforts into transfer mechanisms for natural resources management. (ii) Establishment of an easily accessible conflict resolution mechanism.
Park infrastructure is not adequately protected against cyclone and flooding damage.	M	Incorporate insurance as integral element into the investment financing package.
MinEnvEF is not willing to address governance problem in the forestry sector on a sustained basis.	M	Project would support: (i) expanded Forest Observatory Office; (ii) autoregulation mechanisms with private sector through e.g. certification schemes; and (iii) increasing share of communes in wood related product revenues.
Ministry of the Environment is not effective in promoting environmental stewardship across sector boundaries	S	Project would support: (i) strengthening of environmental units in sector Ministries; and (ii) coordination mechanisms with relevant sector ministries (agriculture/fisheries, tourism, energy).
Ministry of the Environment is not committed/capable in streamlining existing environmental institutions	S	Institutional assessment would link budget decentralization to consolidation process at central level.
Required funding for trust fund is not forthcoming and/or trust fund returns are less than expected	S	Develop other sustainable financing mechanisms in parallel.
Global and/or local security problems hamper normal operation of the tourist sector	M	Minimize impact through institutional structure that has a high percentage of variable costs.
NRM transfers to communes (GELOSE/GCF) are not effective in controlling influx of migrants into environmentally sensitive areas.	M	Incorporate clear commune land property rights arrangements into GELOSE/GCF efforts.
Lack of progress in negotiations of international treaties provides insufficient incentives for the development of new markets for environmental services.	S	Project would support analytical work to quantify foregone opportunities
From Components to Outputs		
Counterpart funds are not available in a timely manner	S	Revenues generated through sustainable financing mechanisms make up for possible shortfalls in counterpart funds from the public budget
Selection of project personnel is not based on technical criteria	M	Use external recruitment agency for staff selection and hiring process
Lack of adequate coordination among environmental institutions hamper project impact	M	Implement use of performance-based contracts that focus on results on the ground.

Donors are unable to effectively coordinate their support to EP3	N	Multi-Donor Secretariat has proven to be an effective coordination mechanism
Weak financial management capacity of environmental institutions negatively affect operational effectiveness of the project (Implementing entity and Funds flow)	M	Financial management action plan has been established to address capacity issues (see Annex 6B for details)
Activities entrusted to various executing agencies may not be executed in conformity with the terms of contract	M	Recruitment of internal auditors
Weak capacity of the accounting profession in Madagascar	S	Association of local auditors with international auditing firms. Recruitment of auditors based on QCBS method. Reinforcement of the accounting profession after completion of forthcoming ROSC mission.
Overall Risk Rating	S	

Risk Rating - H (High Risk), S (Substantial Risk), M (Modest Risk), N (Negligible or Low Risk)

3. Possible Controversial Aspects:

G. Main IDA and GEF Grant Conditions

1. Effectiveness Condition

- The Recipient has opened a project account and deposited counterpart fund therein.
- Adoption of ONE Subsidiary Grant Agreement and ANGAP Subsidiary Grant Agreement acceptable to IDA.
- Implementation of a financial management system at the PISU, ONE and ANGAP, including adoption of an accounting manual of procedures and recruitment of project accounting staff acceptable to IDA.

2. Other [classify according to covenant types used in the Legal Agreements.]

Negotiations

- The Recipient has adopted a Project Implementation Manual acceptable to IDA.
- The Recipient has prepared an Annual Operating Plan for 2004 acceptable to IDA.

Section C.2. During Negotiations it will be agreed with the GoM to maintain a ban on the export of non-processed precious wood and a moratorium on the allocation of new permits, until a transparent, competitive allocation system based on licensing agreements has been put in place.

Section E.6.1:

During Negotiations it will be agreed with the GoM that the establishment of any formal biodiversity conservation modality for the Mikea forest will be subject to the adoption of a Mikea Development Plan acceptable to IDA.

Annex 6(A)-2:

The Government will give assurance during negotiations that the following principles would be adhered to: (i) all bids would be submitted in one envelope to be opened publicly; (ii) point systems would not be used for bid evaluation for works; (iii) the award of contracts would be announced to all bidders; (iv) any bidder would be given adequate response time (at least four weeks) for preparation and submission of bids; (v) bid evaluation and bidder qualification criteria would be clearly specified in bidding/pre-qualification documents and will not be applied arbitrarily; (vi) eligible firms would not be precluded from participation; (vii) no preference margin is granted to domestic contractors and suppliers; (viii) contracts would be awarded to the lowest evaluated bidder in accordance with predetermined and transparent methods; and (ix) bid evaluation reports would clearly state the reasons to reject any non-responsive bid.

Annex 6(A)-14:

The Procurement Plan for works, goods and services to be procured through the PISU during the first implementation year of the project will be agreed between the Government and the Bank during negotiations.

Financial Covenants

- The PISU shall maintain or cause to be maintained records and accounts to reflect in accordance with sound accounting practices the operations, resources and expenditures;
- Records, accounts, special accounts, SOEs shall be audited by independent auditors acceptable to IDA;
- Production of quarterly FMRs

Disbursements

Section C.1

Disbursements will be subject to the following conditions:

- Payments for expenditures under Category 6 of the Project, unless: (i) the Subsidiary Grant Agreement has been adopted by the Recipient and Foundation for Protected Areas and Biodiversity, acceptable to IDA; (ii) The Foundation's organizational structure and operational and administrative procedures have been adopted in a manner satisfactory to the Association and agreed at appraisal; and (iii) independent, external auditors have provided a non-qualified opinion about TFBP's financial & technical performance covering a period of at least one year following the launch of its operations.

H. Readiness for Implementation

- ☒ 1. a) The engineering design documents for the first year's activities are complete and ready for the start of project implementation.
- ☒ 1. b) Not applicable.
- ☒ 2. The procurement documents for the first year's activities are complete and ready for the start of project implementation.
- ☒ 3. The Project Implementation Plan has been appraised and found to be realistic and of satisfactory

quality.

- ☐ 4. The following items are lacking and are discussed under loan conditions (Section G):

I. Compliance with Bank Policies

- ☒ 1. This project complies with all applicable Bank policies.
- ☒ 2. The following exceptions to Bank policies are recommended for approval. The project complies with all other applicable Bank policies.

Us of IDA Grant resources in an amount of US\$7.5 million to support the Malagasy Foundation for Protected Areas and Biodiversity; a conservation trust fund.

Martien Van Nieuwkoop

Team Leader

Christophe Crepin

Co-Team Leader

Richard G. Scobey

Sector Manager/Director

Hafez M. H. Ghanem

Country Manager/Director

Annex 1: Project Design Summary
MADAGASCAR: Third Environment Program Support Project

Hierarchy of Objectives	Key Performance Indicators	Data Collection Strategy	Critical Assumptions
Sector-related CAS Goal: Poverty reduction in rural areas through broad-based economic growth, sustainable natural resources management and improved governance.	Sector Indicators: <ul style="list-style-type: none"> ● improved livelihood conditions for people in critical eco-regions. ● increased economic importance of environmental services and non-wood forest products. ● further reduction in degradation of forest, marine and biodiversity resources. ● improved performance of forestry institutions. 	Sector/ country reports: <ul style="list-style-type: none"> ● poverty assessment ● annual environmental quality report of Ministry of Environment ("tableau de bord") ● annual statistics ● audit reports 	(from Goal to Bank Mission) <ul style="list-style-type: none"> ● induced changes are sustainable
GEF Operational Program: Arid and semi-arid zone ecosystems (OP1); coastal, marine and freshwater ecosystems (OP2); forest ecosystems (OP3).	Outcome / Impact Indicators: Priority habitats and species in Madagascar are brought under effective conservation status during EP3: A. Baseline for the national PA system managed by ANGAP is 1,468,111 ha. Target for Yr 5 is 2.253.848 ha B. Indicator species are maintained at baseline levels: including: (i) 59 species of lemurs (ii) 105 species of endemic birds.	<ul style="list-style-type: none"> ● spatial mapping from LANDSAT imagery (compared against imagery from 2000) ● Monitoring and evaluation reports 	<ul style="list-style-type: none"> ● political stability and law and order are maintained ● GOM remains committed to biodiversity conservation ● ANGAP's capacity and cost effectiveness continue to improve
Project Development Objective: Natural resources are conserved and wisely utilized in support of sustainable economic development and a better quality of life.	Outcome / Impact Indicators: <ul style="list-style-type: none"> ● Ecologic: (i) rate of degradation of forest and wetland resources is less than half the 1993-2000 degradation rate of 1.2%/year; (ii) protected 	Project reports: <ul style="list-style-type: none"> ● satellite images ● protected areas scorecards ● environmental audits ● tourist statistics and ANGAP records ● community feedback 	(from Objective to Goal) <ul style="list-style-type: none"> ● macro-economic environment is stable ● growth policies are pro-poor with adequate rural dimension ● environmental agenda

	<p>areas management efficiency index increases from 41% (baseline) to 55% (mid-term) to 70% by EOP; (iii) mangrove cover maintained at 2004 area of 2,209 km²; and (iv) maintenance of coral reef target indicator species (e.g. <i>Ludjanidea</i> family) in all established no-take zones.</p> <ul style="list-style-type: none"> ● Economic/Financial: (i) sustainable financing mechanisms including government contribution cover 70% of core staff and operational costs of the PA system (baseline: 8%; mid-term: 30%); (ii) national park visitor numbers increase 5% annually from the 2003 baseline (100,000 visitors); (iii) increase of park entrance fees by US\$ 670,047 (2003 baseline: US\$500,000; mid-term: US\$579,000); (iv) sustainable NRM investments generate US\$ 12 million over 5 years (baseline: 0; mid-term: US\$ 4 million) ● Social: (i) improved voice of communes in protected areas management as reflected in representation on ANGAP's Board of Directors (by mid-term) and by the % of CROs complying with their rights and obligations as defined in PA management plans (baseline: 0; mid-term: 50%; EOP: 80%); (ii) improved community empowerment in NRM through fully performing GELOSE/GCF arrangements as 	<p>surveys</p> <ul style="list-style-type: none"> ● sample catch data ● focus group discussion with decision-makers ● evaluation reports by external parties (INSTAT, FTM, etc.) ● ANGAP's PA Management efficiency index increases from 40 % to 60 % ● cost reduction objective of 4%/year reached at ANGAP 	<p>has broad-based support and commitment from the GOM</p> <ul style="list-style-type: none"> ● regional/provincial policies are in line with orientation of the Environment Program
--	---	---	---

	<p>measured by the % of beneficiary communities who have successfully obtained long-term follow-up contracts after the initial 3 year trial period (baseline: 0%, mid-term:70%; EOP: 80%);</p> <ul style="list-style-type: none"> ● Governance: (i) 70% of public and private investments comply with MECIE legislation; (ii) logging and species collection license fees in line with projected revenues (baseline: 80%; mid-term 87% and EOP: 95%; (iii) track record of satisfactory OSF governance audits (mid-term and EOP targets are satisfactory); (iv) 70% of MinEnvEF's budget executed at field level (province or lower by EOP (baseline: 30%; mid-term 50%); (v) cost reduction strategy and action plan developed and implemented within ANGAP, (vi) increased PA management efficiency index from 41% to 60 % 		
<p>Output from each Component:</p> <p>1. Forest ecosystems are effectively managed in accordance with sound environmental principles.</p>	<p>Output Indicators:</p> <ul style="list-style-type: none"> ● 6 million ha of natural forests brought under forest zoning plans with effective conservation plans (baseline: 1,948,000 ha; mid-term: 4 million ha). ● transparent and competitive concession 	<p>Project reports:</p> <ul style="list-style-type: none"> ● M&E system ● annual reports ● site inspections ● OSF reports ● beneficiary assessments 	<p>(from Outputs to Objective)</p> <ul style="list-style-type: none"> ● GOM is committed to address governance issues in the forestry sector on a sustained basis. ● forest zoning plan is accepted as basis for sector policies. ● GOM is committed to continue to apply <i>tavy</i>

	<p>allocation system established and operational with minimum eligibility criteria for participating operators covering 400,00 ha (mid-term: 150,000 ha).</p> <ul style="list-style-type: none"> ● 500,000 ha of forest ecosystems brought under GELOSE/GCF contracts (mid-term: 200,000 ha). ● natural forest conservation sites cover 500,000 ha (mid-term: 200,000 ha). ● community reforestation schemes cover 500 communes (mid-term: 200 communes). ● pilot carbon sequestration schemes established on 10,000 ha (mid-term: 4,000 ha). ● high efficiency charcoal production introduced in 200 communes (baseline: 0; mid-term: 80). ● sustainable management plans established and implemented, covering an additional 150,000 ha of wetlands (baseline: 0 ha; mid-term 60,000 ha). 		<p>and <i>feux de brousse</i> enforcement measures.</p> <ul style="list-style-type: none"> ● GELOSE/GCF provides adequate means to control influx of migrants into environmentally sensitive areas. ● adequate alignment of GELOSE/GCF with road investments under PST. ● adequate coordination with the Ministry of Energy to effectively relate domestic energy activities with charcoal substitution opportunities.
2. Sensitive ecosystems are effectively protected as part of Madagascar's national protected areas system.	<ul style="list-style-type: none"> ● 3 new protected areas (PA) created (1 terrestrial and 2 marine (baseline); mid-term: 1). ● 4 PAs reclassified (mid-term: 4). ● 7 UG (8 PAs) re-delineated (mid-term: 6). ● management and surveillance capacity operational in 22 UG (27 PAs) - (baseline: 10; mid-term: 22 UG). ● fire control in place in 15 UG (18 PAs) - (baseline: 5; mid term 12). ● removal of invasive 	<ul style="list-style-type: none"> ● M&E system ● annual reports ● site inspections ● beneficiary assessments ● eco-tourist client surveys ● financial and administrative management audits of ANGAP 	<ul style="list-style-type: none"> ● external pressures on protected areas do not significantly increase due to unpredictable social and political instability. ● there is sufficient social capital in communities to benefit from increased empowerment. ● eco-tourism investments in protected areas are in line with National Tourism Strategy and PA management business plans. ● cost reduction strategy is implemented and governance continues to

	<p>species in 5 UG (6 PAs) - (baseline 0 - mid-term 3)</p> <ul style="list-style-type: none"> ● infrastructure improved in 11 UG (5 at mid-term), and maintained in 22 UG . ● 35 targeted research programs implemented (mid-term: 16). ● establishment of 300 km of new trails (mid-term: 125 km); 25 new camping sites (mid-term: 10); 14 new information posts (mid-term: 7); 254 eco-guides trained (mid-term: 80); and 3 new visitors centers (mid-term: 1) in 6 priority UG for tourism development. ● CROs operational in 22 UG (27 PAs) - (baseline: 0; mid-term: 10). ● 6 private sector led concessions (mid-term:3). ● Malagasy Foundation for Protected Areas and Biodiversity established and operational. 		<p>improve.</p> <ul style="list-style-type: none"> ● Fund raising to contribute to the endowment is successful.
<p>3. Mainstreaming of the environment is achieved through better integration of policies, establishment of sustainable financing mechanisms, improved governance and availability of more reliable environmental information.</p>	<ul style="list-style-type: none"> ● harmonization of sector specific legislation, environmental legal framework and international conventions through 15 strategic EAs (baseline: 4; mid-term: 8).. ● environmental MIS operational at national level, 6 provinces (baseline: 3, mid-term 6) and 20 regions (baseline: 0; mid-term: 8). ● application of MECIE legislation through establishment of one-stop shop coordinated by ONE under DGE oversight and with support from 18 	<ul style="list-style-type: none"> ● M&E system ● annual reports ● institutional assessment studies ● official publication of laws and regulations ● environmental complaints records 	<ul style="list-style-type: none"> ● MinEnvEF is effective player in promoting environmental stewardship across sector boundaries. ● MinEnvEF is committed to streamline environmental institutions. ● progress in negotiations of international treaties provides sufficient incentives for the development of new markets for environmental services. ● public sector budget includes adequate provisions for EIA.

	<p>environmental sector units (baseline: not functional; mid-term: functional - ONE issues permits)</p> <ul style="list-style-type: none"> ● policy and legislative proposals for sustainable financing mechanisms for the environment in at least 10 sectors (baseline: 0; mid-term: 5) ● commune classification system for public investment eligibility based on tavy control compliance is fully operational (baseline: exists in principle; mid-term: objective compliance measurement system in place). ● establishment of environmental institutions in accordance with agreed alignment plan. 		
<p>Project Components / Sub-components:</p> <p>1. Forest ecosystems management</p> <ul style="list-style-type: none"> ● Forest management, governance and forest fire control program. ● Community forest management transfer program (GELOSE). ● Natural forests conservation sites and wetland protection program. ● Reforestation and carbon sequestration capacity improvement program. ● Wood fuel improvement program. <p>2. Protected areas management</p>	<p>Inputs: (budget for each component)</p> <p>Total EP3: 34.40 million Total: IDA: US\$ 18 million Total: GEF-Bank: n/a</p> <p>IDA: US\$ 6 million</p> <p>IDA: US\$ 4.5 million</p> <p>IDA: US\$ 4 million</p> <p>IDA: US\$ 1 million</p> <p>IDA: US\$ 2.5 million</p> <p>Total EP3: 45.90 million IDA: US\$ 13.5 million</p>	<p>Project reports:</p> <ul style="list-style-type: none"> ● procurement reports ● financial reports ● disbursement reports ● copies of contracts ● technical reports ● progress reports <ul style="list-style-type: none"> ● procurement reports ● financial reports 	<p>(from Components to Outputs)</p> <ul style="list-style-type: none"> ● counterpart funds are available in a timely manner ● selection of project personnel is based on technical criteria ● environmental institutions share overall program goals and coordinate their actions effectively ● donor collaboration is strong and active

<ul style="list-style-type: none"> ● Reducing pressure, capacity building, awareness raising, and civil society involvement around selected PAs ● Enhance complementarity value, alignment, and ecoregional representativeness of the PA System ● Conservation management program to consolidate the PA system ● Sustainable use of the PA system, and improve governance capacity within ANGAP ● Endowment of the Malagasy PA and biodiversity Foundation. 	<p>GEF-Bank: US\$ 9 million</p> <p>IDA: US\$ 0.46 million GEF-Bank: US\$ 0.79 million</p> <p>IDA: US\$ 0.90 million GEF-Bank: US\$ 1.10 million</p> <p>IDA: US\$ 3.17million GEF-Bank: US\$ 4.58 million</p> <p>IDA: 1.60 US\$ million GEF-Bank: US\$ 2.40 million</p> <p>IDA: US\$ 7.50 million</p>	<ul style="list-style-type: none"> ● disbursement reports ● copies of contracts ● technical reports ● progress reports 	
<p>3. Environmental mainstreaming</p>	<p>Total EP3: US\$ 27.50 million IDA: US\$ 8.5 million GEF-Bank: n/a</p>		
<ul style="list-style-type: none"> ● Environmental information, education and communication. ● Environmental policies, regulations and sustainable financing mechanisms. ● Enforcement of environmental legislation (MECIE). ● Environmental Management and Coordination 	<p>IDA: US\$ 1.5 million</p> <p>IDA: US\$ 2.0 million</p> <p>IDA: US\$ 3.0 million</p> <p>IDA: US\$ 2.0 million</p>		

ANNEX 1A: EP-III RESULTS FRAMEWORK	
Summary Description	
<u>EP3 Purpose:</u> Natural resources are conserved and wisely utilized in support of sustainable economic development and a better quality of life.	
<u>Strategic objectives:</u> 1.Sustainable management systems of renewable natural resources and of biodiversity conservation are adopted and owned by the populations in program interventions. 2.Sustainability of natural and environmental resources management at national level is ensured.	
<u>Specific objectives:</u> 1.1: Sustainable development programs are implemented. 1.2: Forest ecosystems and water resources are sustainably managed. 1.3: Protected areas are effectively managed and generating economic benefits. 1.4: Marine and coastal ecosystems are sustainably managed. 2.1: Positive change in behavior vis-à-vis the environment is observed. 2.2: Financial basis for sustainable financing of rational management of natural resources and the environment is established. 2.3: Environmental governance systems and policies are strengthened.	
Specific objective 1.1: Sustainable development programs are implemented.	
<u>Output 1.1.1:</u> Community development plans (PCDs) and inter-communal schemes incorporate an environmental dimension of development. <u>Activities:</u> <i>a – Support communes in preparing « green » PCD and inter-communal development schemes</i> <i>b – Promote inter community and regional exchanges, as well as with other development programs</i>	
<u>Output 1.1.2:</u> Sustainable development alternatives are implemented to reduce environmental pressures. <u>Activities:</u> <i>a – Improve management of previously deforested areas</i> <i>b – Support management transfer of livestock grazing areas</i> <i>c – Promote conservation and sustainable use of water and soils</i> <i>d – Implement activities that provide alternatives to pressures in protected areas peripheral zones</i>	
<u>Output 1.1.3:</u> Value of biodiversity sector production chains is sustainably enhanced. <u>Activities:</u> <i>a – Implement new management and revenue-sharing schemes</i> <i>b – Reorganize management of traded and tradable species</i>	
<u>Output 1.1.4:</u> The use of equipment and fuels that reduce pressure on forest resources is scaled-up. <u>Activities:</u> <i>a – Identify available and locally appropriate renewable energy resources (for heating) ;</i>	

<i>b – Promote substitution of biomass fuels</i> <i>c – Promote alternative energy uses</i>
Output 1.1.5: Urban environment management is improved. <u>Activities:</u> <i>a – Support development and implementation of municipal environmental programs</i> <i>b – Promote prevention and reduction of pollution in urban areas</i>

Specific objective 1.2: Forest ecosystems and water resources are sustainably managed:
Output 1.2.1: Forest resources are managed rationally <u>Activities:</u> <i>a – Refine forest zoning</i> <i>b - Intensify forest management transfers</i> <i>c - Rationalize forest exploitation</i> <i>d - Promote and apply standards/norms concerning forests products (eco-certification, ...)</i> <i>e - Implement complementary economic and regulatory tools</i> <i>f –Develop effective and sustainable forest management systems</i>
Output 1.2.2: Forest cover and carbon storage capacity is preserved <u>Activities:</u> <i>a – Continue creating Land Reserves for Reforestation (RFR)</i> <i>b – Promote reforestation</i> <i>c - Manage carbon sequestration pilot sites</i>
Output 1.2.3: Wood fuel management is improved and contributes to communal development <u>Activities:</u> <i>a – Support improved techniques of carbonization</i> <i>b – Promote energy uses that consume less wood fuel</i>
Output 1.2.4: Occurrence of natural forests fires is diminished <u>Activities:</u> <i>a – Raise public awareness and motivate population to fight against fires</i> <i>b – Better enforce laws against bush fires</i> <i>c – Establish a fire satellite monitoring mechanism</i>
Output 1.2.5: Humid areas and water reserves are managed in a sustainable manner <u>Activities:</u> <i>a - Promote sustainable management and conservation of fresh water lakes</i> <i>b – Intensify protection of water basins</i>

Specific Objective: 1.3: Protected areas are effectively managed and generate economic benefits
<p><u>Output 1.3.1:</u> Representation of ecosystems in PA system is improved</p> <p><u>Activities:</u> <i>a – Reclassify some protected areas</i> <i>b – Create new land protected areas and conservation sites</i> <i>c – Develop marine park system</i> <i>d – Re-demarcate some protected areas</i></p>
<p><u>Output 1.3.2:</u> Biodiversity conservation and proper management of ecological process in PAs is ensured</p> <p><u>Activities:</u> <i>a – Ensure ecological monitoring of habitat, species, pressures as well as conservation measures</i> <i>b - Ensure surveillance and control</i> <i>c - Establish conservation infrastructures and effectuate zoning</i> <i>d - Develop biodiversity research</i> <i>e- Support the CROs</i> <i>f - Establish voluntary PAs</i></p>
<p><u>Output 1.3.3:</u> Eco-tourism in protected areas continues to grow and generate revenues</p> <p><u>Activities:</u> <i>a - Improve and expand visitor infrastructure in PAs</i> <i>b – Put in place / improve ecotourism services</i> <i>c – Promote protected areas</i> <i>d - Obtain PA visitor feedback</i></p>

Specific objective 1.4: Marine and coastal ecosystems are sustainably managed:
<p><u>Output 1.4.1:</u> Management of coastal area and marine resources is subject to sustainable development planning framework</p> <p><u>Activities:</u> <i>a – Develop and implement inter community development schemes</i> <i>b – Build capacity of actors in terms of GIZC</i></p>
<p><u>Output 1.4.2:</u> Value and equitable and sustainable management of coastal and sea resources is enhanced</p> <p><u>Activities:</u> <i>a – Intensify the transfer of marine and coastal zone resources to communes</i> <i>b – Promote certification of marine and coastal zone resources products</i></p>
<p><u>Output 1.4.3:</u> Marine and coastal zone ecosystem biodiversity and functions are maintained</p>

<p><u>Activities:</u></p> <p><i>a – Promote conservation sites outside protected areas to enable species stock renewing</i></p> <p><i>b – Promote protection of marine and coastal endangered species</i></p> <p><i>c - Promote marine ecotourism</i></p>
<p><u>Output 1.4.4:</u></p> <p>Prevention and reduction of coastal and sea pollution and degradation are initiated</p> <p><u>Activities:</u></p> <p><i>a – Develop and support implementation of inter community pollution prevention and reduction plans</i></p> <p><i>b – Put in place inter community pollution and degradation observatories</i></p> <p><i>c – Reinforce erosion prevention and reduction upstream sea and coastal zones subject of special management</i></p>

<p>Specific objective 2.1: Positive change in behavior vis-à-vis the environment is observed:</p>
<p><u>Output 2.1.1:</u></p> <p>Environmental information and decision-making support systems support design and implementation of sustainable development activities</p> <p><u>Activities:</u></p> <p><i>a – Manage environmental management dash-board at national and decentralized level and facilitate exchange of information</i></p> <p><i>b – Ensure the monitoring of terrestrial and marine ecosystems and management of Malagasy biodiversity data</i></p> <p><i>c – Develop environment economic accounting systems</i></p>
<p><u>Output 2.1.2:</u></p> <p>National capacity for effective environmental management is strengthened</p> <p><u>Activities:</u></p> <p><i>a – Improve knowledge about the environment</i></p> <p><i>b – Support environmental communication</i></p> <p><i>c – Support environmental education and training</i></p> <p><i>d - Promote attitudes in favor of conservation of protected areas and conservation sites</i></p>

<p>Specific objective 2.2: Basis for the sustainable financing of the environment is established</p>
<p><u>Output 2.2.1:</u></p> <p>Specific tools for financial sustainability are developed</p> <p><u>Activities:</u></p> <p><i>a – Put in place a « trust fund » for protected areas</i></p> <p><i>b – Develop other financing instruments and optimize interface with other sectors</i></p>
<p><u>Output 2.2.2:</u></p> <p>Financial management and control is set on a more rational and transparent footing</p> <p><u>Activities:</u></p> <p><i>a - Improve existing financial management systems</i></p> <p><i>b - Develop management and administrative capacities</i></p>

<p><i>c - Strengthen mechanisms for institutional coordination</i></p> <p><i>d – Optimize cost structure of implementing agencies</i></p>
<p>Output 2.2.3:</p> <p>Local financing systems for the environment are put in place</p> <p>Activities:</p> <p><i>a – Develop local taxation mechanisms</i></p> <p><i>b – Support establishment of local sustainable investment funds</i></p>
<p>Specific objective 2.3: Environmental governance systems and policies are strengthened:</p>
<p>Output 2.3.1:</p> <p>Environmental dimension is incorporated in Madagascar's development policies</p> <p>Activities:</p> <p><i>a – Develop environmental management tools and ensure consistency of legal texts and procedures</i></p> <p><i>b – Ensure compatibility of investments with the environment</i></p> <p><i>c – Ensure environmental monitoring, control and complaint management mechanism</i></p> <p><i>d- Incorporate environmental dimension in land use planning policies</i></p> <p><i>e – Incorporate environmental dimension into energy and water management policies</i></p>
<p>Output 2.3.2:</p> <p>Environmental institutional framework is better coordinated</p> <p>Activities:</p> <p><i>a – Reinforce mandate of institutions (CIME, CNE)</i></p> <p><i>b – Develop partnership with environmental structures at sector and communal level</i></p>
<p>Output 2.3.3:</p> <p>Capacity of environmental administration is strengthened</p> <p>Activities:</p> <p><i>a – Improve institutional capacity of MEnvEF</i></p> <p><i>b – Ensure implementation of international conventions ratified by Madagascar</i></p> <p><i>c – Ensure interface with Ministry of Plan (PIP) and Finance (RPI, taxes,...)</i></p>
<p>Output 2.3.4:</p> <p>Improve forest governance</p> <p>Activities:</p> <p><i>a – Reinforce forest administrative department</i></p> <p><i>b – Put in place an autonomous structure to ensure forest operations</i></p> <p><i>c – Build stakeholder's capacity in forest management</i></p> <p><i>d – Extend control and information mechanisms initiated by OSF</i></p> <p><i>e – Support forest control</i></p>

Annex 2: Detailed Project Description

MADAGASCAR: Third Environment Program Support Project

EP-III Results Framework

The overall purpose of the EP III, which is the operational translation of the third phase of the NEAP, has been defined as follows: “natural resources are conserved and wisely utilized in support of sustainable economic development and a better quality of life”. This statement reflects that EP3 in the view of the GoM and participating stakeholders goes beyond biodiversity and habitat protection alone and is expected to also contribute to sustainable economic growth and poverty reduction in Madagascar.

Following intensive discussions among the GoM, donors, civil society and other stakeholders, a common Results Framework has been developed that is organized along two axes and seven principal programs. The first axis relates to expected outcomes of the EP3 on the ground in specific intervention zones by stating that "sustainable management systems of renewable natural resources and of biodiversity conservation are adopted and owned by the populations in program interventions". This axis encompasses four programs, whose principal outcomes are specified as: 1.1: Sustainable development programs are implemented; 1.2: Forest ecosystems and water resources are sustainably managed; 1.3: Protected areas are effectively managed and generating economic benefits; 1.4: Marine and coastal ecosystems are sustainably managed. The second axis relates to expected outcomes of EP3 at the national level that are associated with envisaged environmental mainstreaming efforts under the program and is defined as "sustainability of natural and environmental resources management at national level is ensured". This axis incorporates three programs, whose principal outcomes are defined as: 2.1: Positive change in behavior vis a vis the environment is observed; 2.2: Financial basis for sustainable financing of rational management of natural resources and the environment is established; and 2.3: Environmental governance systems and policies are strengthened. Organizing the EP3 Results Framework along these two axes would ensure an appropriate focus on concrete results on the ground; something that was not always at the forefront during the previous phases of the NEAP. Each of the seven principal outcomes is further specified into expected impacts and outputs, that are fully integrated into the EP3 Results Framework as presented in detail in Annex 1A.

EP 3 Intervention Areas

The GoM, along with participating stakeholders, has made a deliberate effort to prioritize EP3 intervention areas. This is in view of the fact that the extreme dispersion of field-based activities under EP2 has had a negative effect on the impact of the program. The launch of the Rural Development Action Plan (PADR) along with corresponding rural development investment programs in support of sustainable agricultural development (such as the Bank supported PSDR), also has reduced the need for a nation-wide presence of EP3. Based on these considerations and following explicit prioritization criteria (location of protected areas, potential of hydrological benefits, biodiversity presence, threat levels, location of forest ecosystems, existing and planned roads network etc.) a total of 530 communes covering an area of 321,043 km², with a population of about 4.9 million people have been identified that will be covered by EP3's field-based interventions. They are distributed among the different provinces in the following manner:

EP-III Intervention Area

Province	Commune	Commune (%)	Population	Population (%)
Antananarivo	32	6%	278,667	5%
Antsiranana	81	16%	662,129	14%

Fianarantsoa	106	18%	936,214	17%
Mahajanga	100	20%	784,065	17%
Toamasina	101	19%	1,220,135	26%
Toliara	110	21%	995,119	21%
TOTAL	530	100%	4,876,329	100%

The table shows that program activities are tilted towards the provinces of Fianarantsoa, Mahajanga, Toamasina and Toliara. Poverty analysis shows that these provinces are the poorest in the country. The focus of EP-III on these provinces thus also reflects the strong poverty-environment linkages that exist in Madagascar.

The Protected Area network of Madagascar managed by ANGAP aims to consist of 36 Management Units (Unite de Gestion - UG), corresponding to 46 Protected Areas. The IDA and GEF contribution to ANGAP's protected area system will be selective under EP-III. It will support 22 UG, corresponding to 27 Protected Areas. The GEF will lend support to 15 UG, while the remaining 7 will be supported by IDA. Refer to Annex 16 and to project files for sites identification, description and selection process.

The proposed IDA and GEF funding supports implementation of selective elements of the EP3. Doing so reflects the notion that IDA and GEF support under EP2 was somewhat dispersed, thereby negatively affecting impacts. Also the fact that the Bank operated as a financier of last resort under EP2 complicated establishing a direct linkage between IDA financing and EP2 outputs. Consequently, IDA and Bank-administered GEF financing is organized in three components, including: (i) Forest Ecosystems Management; (ii) Protected Areas Management; and (iii) Environmental Mainstreaming. All Bank-GEF financing, in an amount totalling US\$ 9 million, is geared towards Component (ii): Protected Areas Management. In order to clearly demonstrate that IDA and Bank-GEF financing are part of an agreed sector-wide approach for the environment, the project description is presented with explicit references to the above-mentioned EP3 Results Framework.

By Component:

Project Component 1: Forest Ecosystems Management - US\$18.00 million

This Component consists in supporting the Department of Water and Forests to better conserve natural forests and streamline the use and management of national forest estate through financing result 1.2 and part of results 1.1, 1.3 and 2.3 of the EP3 Results Framework. Overall, IDA support will primarily focus upon activities to address issues including: (i) governance; (ii) conservation sites, economic and management tools; (iii) management transfer; (iv) reforestation and (v) domestic energy. These activities will be developed, implemented and monitored with all entities involved in development of sector. IDA total amount of financing allocated to the component is \$ 18 million.

1.1 Governance (IDA: US\$ 6.0 million)

IDA financing will support the achievement of results 121 (a), (c), 124 (a), (b), (c) and 234 (a), (b), (c), (d), (e), of the EP3 Results Framework. In particular, IDA financing will support formulation and implementation of: (i) forest zoning, (ii) forest exploitation arrangements; (iii) forest control activities; (iv) slash-and-burn control practices; (v) OSF watch-dog functions; and (vi) setting up of a forest management structure and information system. Government concerns mostly those related to good governance are clearly affirmed with the creation of one Ministry in charge of Environment and Water and Forests and in the Letter of Policy on Environment and the Forestry Policy as well as in different National and Regional Forest Management Plans as a frame of reference (PDFN, PDFR) which also ensure links with other programs through PRSP document and projects undertaken nation-wide such as FID, PSDR.

Support to forest zoning (result 1.2.1.a) will involve putting in place a regulatory framework defining forest functions and in materializing forest borders over the forest territory as a whole. The aim would be to complete the forest zoning exercise that was initiated in 2001 and will cover a total of 8 million ha of natural forests by the end of the project. The current draft zoning plan elaborated during EP2 classified natural forests following two criteria, including: (i) forest function: ecological, regulated or production forests; and (ii) forest management modes. The next steps of forest zoning exercise will result in an overall forest inventory and proposed usage map, as well as detailed zoning maps for each of the existing forest districts. Zoning to undertake during the EP3 will bring about precisions that will allow transparent decision-making in terms of forest resources management.

As far as process is concerned, proposed forest zonage activities will take place at the level of the existing 19 CIREEFs. Forest inventory units would be contracted to evaluate the state of the forest resource and to mark out the location of borders with collaboration from communities and other technical services. In order to ensure adequate participation and ownership of local stakeholders, a committee would be set-up at each CIREEF that would consist of representatives from Communes, civil society, technical services, communities. The role of the committee would be to inform the public of the forest zoning exercise and validate its results. The committee would be assisted by subject matter specialists to collect, compile and analyze physical, biological, economic, social and cultural information that is generated by the forest zoning process.

Regional zoning results obtained in this manner will then be consolidated and validated at national level. National zoning will be legally confirmed through a corresponding Law after its finalization. Subsequently, enforcement and regulatory texts will be defined for forest zoning implementation. Management techniques, intervention modalities and access rules will be defined for each category of forest resource in order to establish appropriate management plans and/or use of these resources. All along this process, communities will be kept informed. Tools will subsequently be developed to manage sustainably each resource category. Zoning, its related texts and instruments will also be published in Malagasy. There will be a mid-term zoning process evaluation with a view to adjust approaches if necessary and learn lessons so that by the end of the project, forest zoning will be in line with national as well as regional benchmarks (communal and inter-communal development plans).

Expected outputs (to be confirmed at appraisal): A national zoning map at 1/200,000 covering 8 million ha and six regional maps at scale of 1/50,000.

Forest exploitation (Result 1.2.1.c). The object of this activity is to set the allocation of forest exploitation permits on a more objective and transparent footing and provide incentives for sustainable forest management as a continuation of governance activities undertaken since two years. As far as the allocation of access rights is concerned, it will involve establishing proper reform on standards for forest management and exploitation through: (i) the adoption of a competitive and transparent forest exploitation licensing system; (ii) the establishment of forest exploitation blocks of appropriate size that permit adequate economies of scale in both the operational aspects as well as the control and monitoring aspects of each license; and (iii) professionalization of forest operators in terms of quality management. For this purpose, training sessions will be organized and a manual for forest operator's use will be made available. As for eucalyptus and pine plantations, partnerships will be established with the aim to ensure adequate observation of regeneration cycles and rotation of plantations so and increase yields in an environmentally sustainable manner.

Support to forest control (Result 2.3.4.a, b, c, d, e.). Forest control will allow monitoring of the regulatory

framework adopted, the physical borders of forests, the evolution of fires and forest exploitation. It represents a "stick" element of the "carrots-and-sticks" approach that is adopted to improve governance in the forest sector. Support to forest control under the project would enable the GoM to set up appropriate devices at various forest resource management levels that ensure adequate presence of the State to ensure compliance with established rules and regulations for the sector.

As far as control mechanisms are concerned, the GoM aims to ensure under the project that adequate check points and barriers are put in place to monitor circulation of collected and exploited forest resources along national and provincial roads. This will be done in close collaboration with local authorities. In addition, forest control teams will be set up to supervise: (i) forest exploitation concessions; (ii) community management transfer contracts; (iii) flora and fauna collection permits and reproduction centers; and (iv) flora and fauna export permits. As for the export of forest products, adequate control measures will be set up in ports and airports as well. It is envisaged that forest control measures will be accompanied by an effective communication campaign that informs the public about the increased probability of being caught in case of noncompliance with existing forest rules and regulations. Moreover, the MEnvEF aims to establish a system of incentives for law enforcement staff so as to maximize the chance of achieving compliance targets. The National Forests Funds that will be supplied through fees and taxes will serve to sustain forest control activities

An integrated information and communication system will be set up to help DGEF to better plan and monitor its activities and improve the quality of its decision-making by improving the organization and management of forest related data and records. It will also enable the collection of reliable and real time data. The information system will also help to make DGEF's resource management more transparent, including to third parties. The information system will serve both internal as well as external purposes. As for internal purposes, it will be supported by appropriate equipment that would facilitate communication in space and time between CIREFs and its implementing units as well as link Forest departments at all levels. It is the responsibility of the CIREFs to ensure the reliability of information, while the department in charge of information at the central office level will consolidate all data and submit information to decision makers. As for external purposes, the system will enable the DGEF to effectively maintain contact with other stakeholders, including mayors and commune representatives, and provide them in a transparent manner with information concerning the exploitation and conservation of forest resources as agreed in corresponding concessions and agreements established by the DGEF.

To increase the effectiveness of envisaged forest control measures, the MEnvEF aims to strengthen partnerships with other Ministries, including: (i) Justice for imposing sanctions; (ii) Finance and Budget for levying fees and tariffs; and (iii) Interior for mobilizing law-and-order forces. The above-mentioned information system will play a key role to improve transparency concerning potential and actual collected forest exploitation revenues on the basis of agreed permits and licenses between MinEnvEF and forest operators, while at the same time providing a reference for the distribution of envisaged revenues among the different stakeholders. MinEnvEF will also actively seek partnerships with civil society organizations so as to widen the information base that guide forest law enforcement efforts. Last, but not least, it is thought that community-based approaches towards forest management will go a long way to mobilize local interest and control as important elements of more effective governance in the forest sector. In order to establish effective partnerships, the MEnvEF will redeploy human resources and other means at the level of Forest Districts and will conduct corresponding training programs for its employees and envisaged partners.

Another institutional element of the forest governance picture will be the prolongation of the watchdog functions of the Observatory of the Forest Sector (OSF), under EP3. The OSF was created through executive orders n°12703/00 and 6682/01, and has as its mandate to see that rules of good governance are

appropriately adhered to in the forest sector. Under the project, the management, information and communication capacity of OSF will be strengthened so as to enable it to reach out to relevant stakeholders and establish effective partnerships for the monitoring of governance issues in the sector.

In order to put governance in the forest sector on a more solid footing in a structural manner, the GoM intends to spin-off actual operational forest management functions within the DGEF into a separate entity called the National Association for Forest Management (ANGEF). Policy-making and regulatory functions would stay within the DGEF. Doing so would contribute to a better distribution of checks-and-balances in the sector which will have a positive effect on governance in the sector. For this purpose, the project would support selected elements of the road map that has been prepared to guide the transformation of the sector following the institutional assessment which is presented in more detail in Annex 15. The latter would include financing of a small team of experts in the DGEF that will coordinate operational aspects of all planned EP3 activities in the sector as well as set the stage for the envisaged institutional transformation of the DGEF.

Expected outputs (to be confirmed at appraisal): 48 training sessions effectuated concerning new forest management techniques, 10 OSF reports published, autonomous structure for forest management is operational.

Support to *tavy* and bush fire control (Result 1.2.4. a, b, c). Given that slash-and-burn practices (*tavy*) are the main driver of deforestation, the GoM intends to continue to pay particular attention towards efforts aimed at reducing or preferably eliminating this practice. The recent large awareness raising and repression campaign conducted by the GoM in 2002, confirms that a general mobilization approach at the level of regions communes can make a difference. Building on this experience, it is envisaged that permanent forest fire control committees will become operational in each of Madagascar's 1,300 communes. These committees will conduct awareness raising efforts, monitor the local *tavy* and bush fire situation, as well as establish and enforce corresponding "Dina" rules. In this context, it is envisaged that *tavy* and bush fire control measures would be included into Commune Development Plans (PCDs) and that their effective compliance determines eligibility of all public investments in the commune concerned. Alternative solutions to *tavy* and bush fires will also be agreed with communes and provided in coordination with other rural development projects. Forest agents will be equipped with such tools as GPS in order to better detect fires, assess damage and help in decision making. In addition, funds for transport by helicopter will be made available to facilitate access to remote areas. Monitoring of fires through satellite photography will be pursued in partnership with a specialized organization. In addition, support would be available to enable the DGEF to manage a retribution system that would reflect compliance of communes to feux-de-brousse and *tavy* control measures that are required as a condition for public investments. The retribution system would be fueled by the TBEs elaborated by ONE and would recognize communes verts and communes rouges with corresponding rewards and penalties.

Expected outputs (to be confirmed at appraisal): 500 communal fire control committees established.

1.2 Conservation Sites and Economic Instruments (IDA: US\$ 4 million)

Support will be provided within this sub-component to results 1.3.1.(b), 1.3.2.(a), (b), (c), 1.2.5(a) and 1.2.1.(d), (e). and (f). of the EP3 Results Framework. Activities will particularly focus on ways and means to increase the area of natural forests under effective conservation arrangements outside the protected areas system through the creation of conservation sites as well as the development of economic incentives and regulatory instruments for forest conservation.

Conservation Sites (Results 1.3.1.b, 1.3.2.a, b, c). Conservation sites will contribute towards achieving the 2015 goal of maintaining the forest cover at the current level by focusing specifically on areas outside the PA network to ensure better geographic coverage and a holistic approach to ecosystem conservation. They will be classified and inventoried according to IUCN norms. A contractual text between administration and manager will rule its management mode. The sites will be managed to allow multiple resource uses by local communities, while protecting biodiversity and hydrological functions. Resource management arrangements will be more permissive than those practiced in core protected areas and buffer zones, which are designed to protect core refuges for biodiversity. Creating conservation sites would allow both, the preservation of biodiversity outside the network of protected areas and the maintenance of watersheds. Potential sites for conservation have been identified based upon a different set of criteria with a major focus on the endemic species existing outside the PA network, need for biological corridors and the hydrological services. At the end of EP3, it is expected to have established 500,000 ha of conservation sites, distributed across about 15 locations. The project would support the promotion and creation of conservation sites, the modalities for ecological monitoring of habitats and species, as well as the arrangements for surveillance and control of such sites. Conservation site management plans will be elaborated with effective participation of all relevant stakeholders, including local communes. A Process Framework has been developed for the creation of conservation sites in order to guide and minimize any impacts from restrictions of access to natural resources to communities. Conservation site management contracts will be established in an objective and transparent manner and in line with the agreed vocation of the site. Management of conservation sites will involve reporting requirements and will be subject to external controls. Sites will remain open for scientific and technical missions. Training of forest agents, local population, authorities and potential operators regarding the concept and procedures for the creation and management of conservation sites will first be undertaken. Efforts will be made to ensure that creation procedures will be simple. Management of sites will follow a development and management plan according to manuals of procedure to that end.

Expected Outputs (to be confirmed at appraisal): 500,000 ha conservation sites created and managed .

Concerning particularly wetlands (Result 1.2.5.a), the project would support the creation of Ramsar committees, consisting of: (i) one committee per region led by the Regional Director of the Environment, Water and Forests; (ii) one per District involved; (iii) one local committee for each site; (iv) and one national committee supported by a small coordination unit based at General Directorate of Water and Forests.

Expected Outputs: 150,000 ha of wetlands are subject management plans that are operational.

Economic Instruments (1.2.1.d., e., f.). Parallel to the establishment of transparent access rights, setting up standards and other economic and regulatory tools is meant to provide the basis for sustainable management of forest resources by economic operators. As far as feasibility tests of national norms and standards are concerned, the DGEF supported by the alliance World Bank –WWF initiated the promotion of forest management and forest resource certification in 2000-2001. To that effect, a team comprising representatives of operators in timber business has been put in place with a view to develop national norms for sustainable forest management. Norms have been based on international practice set by the Forest Stewardship Council (FSC). Currently, their application is not mandatory although the ones that are operational have led to the establishment of sustainable management forest management practices and the generation of high quality forest products. Under the project, this activity aims at promoting these norms and standards with forest operators in order to encourage them to reorient their activities within the framework of eco-certification. In this context, the DGEF intends to launch a seal of quality for forest

products in collaboration with specialized certification entities. For this purpose, a manual for national norms /standards will be elaborated along with a training program for forest agents. In addition, efforts will be launched to develop norms and technical guides for forest management. The project would support the preparation of adequate reference material for this purpose. Expected output (to be confirmed at appraisal): 400,000 ha of forest under competitive and transparent licensing system.

1.3. Forest management transfers (IDA: US\$ 4.5 million)

IDA financing will support the achievement of results 121(b), 113 (a) and (b). The key focus of this activity will be the transfer of forestry management rights to local communities under GELOSE and GCF contracts. Along with this activity, it will also launch efforts aimed at improving economic benefit capture by communes from the different biodiversity product market chains that are associated with forest management transfer program.

Scale up Forest Management Transfers (Result 1.2.1.b). Based on the positive experience of forest management transfer activities carried out under EP2, this activity will be scaled-up under EP3 by aiming to transfer the management of 1 million ha of forest to local communes. Priority intervention areas for forest management transfers to communes will be identified eco-corridors as well as those areas where there exist opportunities to generate synergy with the on-going rural roads rehabilitation program. To speed-up forest management transfers, existing guidelines will be simplified by building on the strengths of both existing transfer modalities: GELOSE and GCF. Updated guidelines will be widely distributed and form the basis for training of service providers and participating communes. Technical assistance to communes will be extended beyond the signature of forest management transfer contract so as to further improve implementation quality and ensure effective compliance with agreed contract rights and obligations.

Expected Outputs (to be confirmed at appraisal): 500,000 ha of forest areas transferred to communities. Capacity of local communities in forest management increased.

Sustainable enhancement of the economic value of biodiversity product supply chains (Results 1.1.3.a and 1.1.3. b). This activity will complement the forest management transfer program by supporting the development of niche markets for biodiversity products. Doing so, would enable communes to improve revenue generating potential of forest management transfer contracts, thereby providing better incentives for biodiversity conservation. For this purpose, the project would support studies aimed at quantifying revenue generating potential of a range of biodiversity products along with the development of sustainable management models. Parallel to this, the project would support the development of adequate rules of the game that would govern access to these resources in a manner that would fully recognize the intellectual property rights of local communes. Once clearly established, the project would also support awareness raising activities aimed at informing local populations about the value of biodiversity products and species that are present in forests that have been subject to management transfer contracts. In addition, to promote bioprospecting opportunities, an inventory of knowledge and traditional know-how will be carried under the project in collaboration with specialized institutions with the aim to set the stage for equitable bioprospecting arrangements between communes and researchers.

Expected Outputs (to be confirmed at appraisal): 15 industries equipped with mechanisms for equitable sharing of benefits, and certified.

1.4. Reforestation (IDA, US\$ 1.0 million)

Reforestation activities would help increase forest cover, thereby reducing pressure on natural forests

caused by the need to satisfy domestic energy needs. Available IDA financing will support the achievement of results 122 (a), (b) and (c) of the EP3 Results Framework for this purpose by making available funding for the creation of Land Reserves for Reforestation (Réserves Foncières pour le Reboisement or RFRs) at the level of communes through the Support Fund for Commune Environmental Management (*Fonds d'Appui à la Gestion Environnementale des Communes (FAGEC)*). During EP3, it is envisaged that 1,300 communes will have land reserves for reforestation for a total surface area of 100,000 hectares. Given that domestic energy requirements are particularly met from natural forest resources in Antsitanana, Mahajanga, Toliara, and Fianarantsoa Côte- Est. Reforestation activities may be prioritized in favor of these provinces. However, other areas where a leveraging effect (such as additional carbon finance) and effective complementarity with other EP-III component can be developed should also be given attention. Reforestation activities funded by FAGEC would be closely coordinated with "food-for-work" initiatives that are typically supported by WFP, SEECALINE etc. so as to generate appropriate synergy.

Reforestation activities will be conducted based on Decree no 2000-383 of June 17, 2000. Accordingly, reforestation land reserves (RFR) will be created and implemented at commune level. Such RFR will be created following the pre-established procedure. Furthermore, reforestation will be promoted among private investors. Specific reforestation objectives would be the protection of road or hydro agriculture infrastructure, as well as satisfaction of timber needs. The major incentive is to secure land titles at the Land Office after issuance of *mise en valeur* certificates by the MinEnvEf. Reforestation operators may receive small materials and tooling to conduct works on production of plans. The gender approach will be an element of the strategy of implementation of reforestation.

Along with the establishment of RFRs, emphasis will be placed in developing carbon sequestration opportunities. While new opportunities in carbon finance are emerging, the capacity to develop and implement carbon finance contracts in Madagascar is still limited, especially when considering community level projects. In particular, carbon finance agreements involving groups of smallholders require innovative mechanisms for contracting carbon, monitoring responsibilities and disbursing earnings. In order to facilitate the participation of targeted communities in the global carbon market, the project will build the capacity of the government, local institutions, and communities, and help develop appropriate partnerships with the private sector. In particular, the project will enhance the ability of target communities to develop carbon finance proposals, evaluate project feasibility, measure baselines, and establish the financial and administrative processes required to enter into carbon sequestration contracts. The project will also develop partnerships between community organizations and the private sector for the provision of technical assistance and the establishment of joint strategies. Specific activities supported under the project would include: (i) Workshops: Local and regional workshops will be supported by the project in order to a) create awareness of carbon finance opportunities, b) develop the technical capacity required to assess project viability and conduct technical reviews, and c) provide training on carbon finance methodologies (baseline analysis, monitoring mechanisms, etc) and on possible contractual arrangements; (ii) Partnership building: This activity will facilitate and strengthen interactions between private businesses/investors and local communities. Roles for the private sector will be explored particularly with regards to providing technical assistance, independent verification services, and access to investors; and (iii) Piloting sustainable financing: This will include the development of pre-feasibility studies, and the identification of funding sources.

Expected Outputs (to be confirmed at appraisal): RFR delineated and divided into lots covering 500 communes; 10,000 ha under pilot carbon sequestration sites.

1.5. Household energy (IDA US\$ 2.5 million)

Proposed household energy activities under the project component will work towards realizing a sustainable

woodfuel supply in Madagascar, particularly in regions with deforestation from woodfuels, and with a particular interest in charcoal. Proposed activities support results 114(a), 114(b), and 123(a) of the EP3 Results Framework. The focus will be on a holistic approach whereby supply-side and demand-side intervention are carried out simultaneously and in conjunction. The three subcomponents are: (i) increase the supply of charcoal through the promotion of more sustainable forest management practices and more efficient carbonization techniques (Carbonization); (ii) reduce the demand for woodfuels through the dissemination of more efficient end-use cooking stoves (Consumption); and, (iii) scale-up the use of substitution fuels to replace the use of charcoal (Substitution Fuels).

Carbonization, (\$1.6m). The carbonization program is integrated in the GELOSE/GCF; each contract will review the potential benefits to the commune from sustainable charcoal production. The regulatory conditions to promote sustainable wood production by villages (and charcoal as one of the main outputs) will be improved for villages that are part of the *Gestion des Ressources* or the *GELOSE* program. An awareness campaign among villages will be launched to professionalize the woodfuel production sector. Capacity building at the village level will involve creation of a management committee or village association, development of simplified management plans for the wood resources on all of the village lands, and teaching improved cutting and carbonization techniques. Such villages will benefit from an increased and sustainable woodfuel business, plus from the proceeds of a differential tax on wood and charcoal. These activities build up on the experience gained under the PPIM/PSED program that was carried out under Energy II in Mahajanga.

Consumption, (\$0.5m). Considerable experience exists with production of improved cooking stoves. This subcomponent will capitalize on this experience by further professionalizing the sector and promoting a regulatory environment that favors efficient equipment through a labelling system Energy efficiency labels; environmental beneficial labels.. An awareness campaign will be launched to promote both the production of efficient equipment among suppliers and the use of such equipment among potential users. A financial support mechanism will be created to assist producers or suppliers to make available such equipment. The types of equipment that will be promoted are improved firewood and charcoal stoves, efficient and acceptable kerosene stoves, and small LPG stoves.

Substitution Fuels, \$0.4m. This subcomponent will promote the production of substitution fuels that will replace the use of charcoal. Potential fuels are gelfuel from alcohol or agricultural residues or briquettes from agro-industrial residues, and LPG in smaller containers. The minimum size is 9 kg at the moment; the potential market for 1 kg or 3 kg bottles appears to be large. An awareness campaign will be launched among potential candidates to scale-up the production of such alternative fuels and a financial support mechanism will be created to assist such producers.

Benefits as a result of implementing the three subcomponents are multiple; in essence, the benefits are interlinked, as each of the subcomponents impacts the others: the total woodfuel consumption will be reduced; the part of the woodfuel consumption that is sustainably produced will be increased, yielding lower deforestation rates; participating villages will substantially increase their financial benefits; more households will use substitution fuels and see increased health benefits; and finally, CO₂ emissions will also be reduced.

Expected Outputs: some 400 COBAs trained and operational through improved charcoal production techniques introduced in 200 communes and private forests/plantation. Stoves with an eco- or environment label are sold by stove producers and will be used by at 250,000 households and 3-5 production facilities for substitution fuels exist.

Project Component 2: Protected Areas Management: (i) Bank-GEF: US\$ 9 million; (ii) IDA - US\$13.50 million

The Protected Area network of Madagascar managed by ANGAP aims to consist of 36 Management Units (Unité de Gestion - UG), corresponding to 46 Protected Areas. The IDA and GEF contribution to ANGAP's protected area system will be selective under EP-III. It will support 22 UG, corresponding to 27 Protected Areas. The GEF will lend support to 15 UG, while the remaining 7 will be supported by IDA (refer to Annex 16 and project files for sites description, and selection process).

This component contributes to the implementation of EP III by focusing on results 1.1., 1.3., 2.1., and 2.2 of the EP3 Results Framework. The component addresses issues relating to PA management, eco-development, eco-regional planning, ecotourism and endowment of a trust fund. Specifically, the activities planned under this component are organised as follow:

2.1 Reducing pressures, Capacity building, Awareness and Civil Society involvement around selected Protected Areas (IDA: US\$ 0.46 million; Bank-GEF: US\$ 0.79 million)

This activity contributes to EPIII results 1.1.2(d), 1.3.2(e) and 2.1.2(d). IDA/GEF will aim to increase participation of local communities in the management of selected protected areas by strengthening and expanding the mandate of the Regional Steering Committees (CROs), setting up of COGES/CODEAP (village based associations) and their capacity building and, partnerships with NGOs. It would also provide management, technical and planning assistance, and on the ground support to the program of activities aiming to promote alternative actions for reducing pressures around selected protected areas through (i) actions having direct links with pressures and with conservation targets; (ii) operationalization of decentralized management principles recommended in the manual for management of PRDEAP funds (park entrance fees).

The Regional Steering Committee commonly called CRO, is a consultation forum set up by ANGAP. The advantages of such a system is not only sharing information, but also ownership of decisions made as regards management of a protected area at the level of a region or of a place; it allows participants and actors to express their observations and proposals as regards actions relative to management of the site. This activity will involve setting up and strengthening of CROs at selected management unit of the national Network. Establishing the CROs will involve selection of representatives from all stakeholders present in the area including representatives of: members of grassroots communities such as CODEAP and/or similar communities; village-based associations or COGES; regional development committees; civil society/development operators and private and public institutions. The responsibility of the CRO's includes supervision of work of outside contractors responsible for the preparation of master, public use and management plans, assisting local communities in the preparation of funding proposals, supervision of the execution of activities by beneficiary communities etc. Financing will also be provided to conduct information / training campaigns for capacity building among people in charge of management units and CRO members. Training will include study tours, scholarships, seminars, courses on conservation management, PA control mechanisms and management procedures. Field visits to other region communities where participatory approaches are being implemented will also be organized to further raise the level of awareness among the local communities. All training and technical assistance will be implemented from a gender perspective and promote the participation of women in management of PAs.

Expected Outputs: CROs operational in 22 Management Units (27 PAs); Increased participation and capacity of local communities in PA management and increased revenues shared from DEAP.

2.2 Enhance complementarity value, alignment and eco-regional representativeness of the Protected Area System (IDA: US\$ 0.9 million; Bank-GEF: US\$1.1 million)

This activity contributes to EPIII results 1.3.1. IDA/GEF resources will finance the implementation of the

COAP and the Plan “GRAP” (five-year action plan for management and expansion of existing PA system), aimed at ensuring the representativeness of ecosystems under the national protected area system. Support will be provided to integrate conservation management planning in PAs and support zones at an eco-regional level, such as reclassification of certain PAs, identification of new PAs, and reconfiguration of the boundaries of certain PAs, where warranted to reflect current land uses and ensure ecological integrity. Specifically the activities will be aimed at: (i) status change of some protected areas or re-delineating boundaries of a number of existing protected areas; (ii) creating a few key terrestrial and marine protected areas; and (iii) redefining some protected areas. Redefining protected areas and creating new protected areas will result in readjusting the surface area of medium altitude moist forest, dry closed forest ecosystems and of thicket in *Didierea* and many others not yet defined now. The redefined and new protected areas including the conservation sites to be created under the forestry component will support each other.

The status modification for a protected area will include the following steps: (i) developing a document justifying status change; (ii) developing minutes indicating the borders and border points of the PA, as well as its adoption by the population involved; (iii) preparing the draft decree for status modification; (iv) meeting of the Superior Council for Protection of Nature; and (v) formalization. Any creation, status modification or redefinition process is carried out according to MECIE regulation. It includes, on the one hand, the requirement of conducting an environmental impact study; and, on the other hand, of consulting the public. Status modification of four protected areas will be included: the Special Reserve of Anjozorobe; Lokobe; Nosy Mangabe; and the Integral Natural Reserve of Zahamena. They will be respectively integrated in the National Parks of Mantadia, Masoala, and Zahamena.

The project will support the creation of one new terrestrial protected area (Foret de Mikea) and two new marine parks (Nosy Hara, and Nosy Radama-Sahamalaza). The newly created PAs will be equipped with operational management structures for the first two years of EP III. Related activities especially involve refining feasibility studies, developing their management plan and development of a minutes document on survey of borders and border points, signed by all entities involved, including the population. The administrative PA classification process will be carried out from the head office. Management structures will be created for the three new PAs, including bureaus and their equipment, materials and human resources.

The various consultations processes and technical analyses during project preparation, identified the merits of assigning a definite category (re-delineating boundaries) to already established PA systems. A re-categorization, boundary demarcation, abandonment and finalization of PA legal status process will be put in place to rationalize the National System of Protected Areas. While re-delineating, a permanent category will be assigned to the areas identified in the process of project preparation. Re-categorization will be based on current intervention conditions and natural resource utilization patterns since these may have changed since the areas were created. This is an important step because the category (*e.g.* National Reserve, Communal Reserve, National Park or a Protected Forest) determines how resource utilization and occupation levels are regulated. Boundary demarcation will consider the administrative viability of the area as well as the space needed to meet conservation objectives. This process will determine the expansion of the area or its partial or total abandonment. Representativeness of ecosystems will be enhanced through change in borders of some protected areas. The project will target the following eight protected areas :

- the National Parks of Kirindy Mitea/Andranomena, the borders of which will be extended by inclusion of the marine and coastal area of Belo sur Mer
- the National Parks of Tsimanampetsotsa, Kalambatritra, Ambatovaky, Cap Sainte Maire, Montagne d’Ambre and the Special Reserves of Manongarivo and Tsaratanàna, in which good condition ecosystems neighboring some PAs will be integrated in the Network, whereas the degraded parts at the

periphery of the PA will be put outside new borders

Creation and re-delineating of PAs will also require preparation of planning documents as required by the GoM legislation and drafting of administrative resolutions and legislative decrees. Drafting administrative resolutions and legislative decrees. Creation of new areas and their categorization implies drafting numerous administrative resolutions and resolving legal questions. Furthermore, GoM legislation requires that proposals for new areas and categorization must be consulted with relevant sector ministries including agriculture, energy, tourism and others. Final legal declaration of protected areas will be achieved by documenting the revised protected area boundaries and category. Protected area categories will be based on international categories (such as the Biosphere Reserve) which enables the utilization of the national categorization system in the final legal declaration of the protected areas.

Expected Outputs: Establishment of new terrestrial protected areas (1) and marine parks (2). Status modification of 4 protected areas; 8 protected areas delineated. Legislative decrees for creating the new PAS in place. Operational management structures for the new PAs areas created in place.

2.3 Conservation Management programs to consolidate the national PA system (IDA: US\$ 3.17 million; Bank-GEF: US\$ 4.58 million)

This activity contributes to EPIII-Results 1.3.2. IDA/GEF will finance (i) Ecological monitoring and application of measures for conservation of terrestrial and marine ecosystems; (ii) surveillance and control ; (iii) construction of conservation infrastructures and materialization of zoning; and (iv) research programs aimed at developing a better understanding of practices for biodiversity conservation and management.

In order to improve conservation management of the protected area system, focus will be placed on prioritizing actions and developing referential documents. Given the sometime limited resources in implementing identified strategies and actions, initiatives will be based prioritized based upon the importance of their impact on threats reduction and maintaining the biodiversity in PAs. Based on the conservation Management Plans (PGC, PGEE, PGD, PGC, Service Plan) at each site, thematic management plans will be developed. These will include, master plans, and resources use zoning plans. Master Plans include zoning arrangements and information on coordination and participation mechanisms for the area. They provide information on area potential for use of existing resources and possible economic activities, with details on the manner in which the area will be organized and managed. Four complimentary studies will be conducted for the elaboration of Master Plans, which will contain information on issues such as eradicating invasive exotic species, and restocking and or reintroduction of species as well as habitat restoration measures. Resources Use Zoning Plans provide the technical support for use authorizations to be given to indigenous peoples to pursue sustainable practices currently under implementation. These referential documents will clarify the activities to be conducted with detailed implementation modalities against the problems to be dealt with regarding scale, expected impacts, methodology to be followed, location and responsibility charter.

This project will support the consolidation of monitoring and surveillance activities as well as conservation practices. It includes ecological monitoring, management of fires (including opening of firebreaks and maintenance of access roads for fire fighting), invasive plant control and restoration of degraded sites in some protected areas. In order to insure basic protection against illegal use of natural resources within the protected areas, the project will provide funding to the area administrations for the establishment and implementation of a community-based and Protected Areas Management Surveillance System, in consultation with and participation of the local communities. The contracts issued will cover provision of equipment and subsistence costs.

Ecological monitoring will involve identification of conservation targets, definition of conservation objectives, design of adequate ecological monitoring protocol per conservation target and, setting up and implementation of monitoring protocols. In 12 protected areas (Forêt d'Ambre, Ankarana, Manombo, Ranomafana, Cap Sainte Marie, Andohahela, Andranomena, Zahamena, Betampona, Masoala, Baie de Baly and Ambohitantely), degraded sites will be restored. A specific research action program will be implemented in the conservation management plan of each of these protected areas.

Activities to support and strengthen the management of fires within the PA system will include infrastructure development (opening or maintenance of firebreaks, setting up of guardrooms or watch towers), a vigilance committee and fire prevention campaigns; creation of a few trained, suitably quipped mobile fire suppression teams to ensure rapid intervention in case of fire; strengthening patrol and surveillance system in order to control movement inside the Park; and setting up of various materials and equipment for fire fighting. The following 18 PAs have been identified for fire management: Ambohitantely, Isalo, Manombo, Baie de Baly, Marotandrano, Zahamena, Zombitse- Vohibasia, Tsimanampetsotsa, Andranomena, Cap Sainte Marie, Andohahela, Ranomafana, Namoroka, Betampona, Anjozorobe, Midongy du Sud and Kirindy Mitea.

Invasive species at Montagne d'Ambre (*Lantana camara*); Analamazaotra and Ranomafana (*Psidium cattleianum*); Cap Sainte Marie (*Opuntia*); Andranomena (*Ziziphus mauritiana*); and Beza-Mahafaly, pose major problems in the PAs. A feasibility study for each protected area highlighting a specific control plan will be carried out.

Conservation infrastructure development will include boundary marking of PA management units (zones) in protected areas (materialization of borders of fully protected "core" of controlled occupation areas and use areas, of the outer boundaries of the PA proper). Infrastructure needs to be established in 12 PAs (Baie de Baly, Midongy du sud, Namoroka, Ambatovaky, Kalambatritra, Mangerivola, Marotandrano, Anjozorobe, Marolambo, Foret de Mikea, Kirindy Mitea and Tsimanampetsotsa) including surveillance and control infrastructures such as control barriers, materialization of borders, fire control and protection infrastructures such as fire breaks, watch towers; and information infrastructures such as signalling, information, and prohibition notices. The investments in the PAs will be guided by a participatory management plan and a business plan (details in Project Files).

Applied research will be used as a biodiversity management tool. Limited support will be provided to some of the research programs (20 planned per year under EP III) in partnership with national and international institutions. These programs will include: (a) promotion of partnership development; (b) coordination and monitoring of research implementation; (c) improvement and updating of database on research; (d) assessment/ improvement of collaboration in research; (e) setting up and maintenance of research infrastructures and (f) analysis of results and their application in PA management.

IDA and GEF will provide support to activities to remove barriers to conservation and management activities such as capacity building support, planning, targeted research programs, zoning and, a contribution to surveillance and control, but also on investments to infrastructure, and equipment.

Expected Outputs: Establishment of PA Management and Surveillance system in 22 Management Units (27 terrestrial and marine PAs - selection at based on agreed prioritization process included in Annex 16), 15 Management Units (18 terrestrial PAs) using fire management; 11 Management Units (643 Ha) under habitat restoration, Conservation infrastructure developed in 11 Management Units (12 PAs), and well maintained in 22 UG (27 PAs), 35 targeted research programs carried out, removal of invasive species

undertaken in 5 UG (6 PAs).

2.4 Sustainable use of PAs System and improve governance within ANGAP (IDA: US\$ 1.60 million; Bank-GEF: US\$ 2.40 million)

This activity contributes to EPIII-Results 1.3.3, but also provide support for the financing of technical assistance and capacity building to further improve ANGAP's governance by focussing on the development and implementation of a cost reduction action plan, improving financial and administrative management, providing strategic and technical support to prioritize the investments (in particular related to ecotourism) in alignment with the PA management plans and the new business plans, and supporting quality reviews of the implementation of the M&E system designed during preparation. Support will also be provided to develop and implement the replication plan.

IDA/GEF will provide support to improve recreational facilities including critical visitor infrastructure and services, revise tourism fees to capture the consumer surplus and increase revenues from park entrance fees to stimulate the local (eco)-tourist industry and strengthen guiding services. To improve guide services and harmonize guide status under a standard partnership contract, the following activities will be carried out: open up the market for guide services to regional and national service providers and by inciting competition in order to raise the quality of local service provision; involve the private sector in guide based training and service provision through the creation of partnership and collaboration with the Ministry of Tourism in the licensing of professional guides

Partnership will be developed with private enterprises for the promotion and development of eco-tourism. Market development of ecotourism products (the parks and visitor services) will be managed in partnership with the private sector to improve supply of tourism products. ANGAP will establish its partnership policy, and a blueprint document or partnership charter will be designed following a national workshop involving the private sector.

Systems for evaluating and mitigating the impacts of tourism on PAs will be made operational. The activities will focus upon the six priority parks most visited namely, Montagne d'Ambre, Ankarana, Andasibe-Mantadia, Isalo, Ranomafana and Andohahela. Increase in number of visitors requires defining conditions for effective management and maintenance. The process of Acceptable Change Limit (LAC) will be the means to determine the conditions and status of resources and to resolve possible conflicts in meeting these objectives. Evaluation will start with setting up of an adequate database on existing conditions in order to detect changes as limit or capacity is not static. Establishing limits will be part and parcel of the planning policy process.

Support will be provided to develop tools for promoting ecotourism management. These will include development of park information KITs for ecotourism promotion about the Parks; creation of websites; marketing campaigns; educational tours; and promotional materials for the Parks in international magazines.

Improving critical visitor infrastructure will include installation of control barriers, installation of information/ instructions boards, maintenance of panels, purchase of paint for boundary markings etc. Focus will be placed upon the 6 priority Management Units critical to ecotourism development in Madagascar which require improvement in critical visitor infrastructure. These include Montagne d'Ambre, Ankarana, Tsingy de Bemaraha, Andasibe-Mantadia, Isalo, Ranomafana, Andringitra, Ankarafantsika, and Andohahela. The establishment, categorization and management of areas will require the construction of new facilities and or improvement of already existing structures as well as the provision of the required equipment for area management and communications. Funding will also be provided for the maintenance of existing trails in the selected areas. Criteria for selection of service providers will be drawn

up for management and services contract.

IDA/GEF will focus upon efforts to overcome barriers to the advancement of eco-tourism in existing and new PA sites selected for GEF/ WB support. These barriers include: absence of suitable tourism products, including trails and interpretation facilities; lack of articulation of PAs in tourism markets; and development of protocols and infrastructure to engender responsible tourism. Bank's support is expected to increase visitation and gate fee returns, contributing to an improvement in financial sustainability.

Expected outputs: 254 guides trained; 3 interpretation centers in Montagne d'Ambre, Ranomafana, and Masoala created; 14 new information posts established in 6 UG; 6 UG with improved ecotourism infrastructure and services; establishment of 300 km of new trails and 25 new camping sites; 10 functional evacuation plans prepared; 3 ecotourism assessment studies completed; increased partnership with private sector; 6 private service zones for PAs established, cost reduction action implemented, quality M&E system operational and under external review, administrative and financial management transparent and cost effective, confirmed by independent external reviews.

2.5. Endowment of the Malagasy Protected Areas and Biodiversity Foundation for long term funding (IDA: US\$ 7.50 million)

This activity contributes to EPIII results 2.2.1 (a). It aims to strengthen the national financial capacity to support the PA system over the long term. The key mechanism will be to operationalize the new governance and administrative systems for a dedicated trust fund to finance a portion of the long-term operational costs of the management of the PA network in Madagascar. A Trust Fund Steering Committee (TFSC) appointed by the Minister of Environment in 2001 is currently working on the establishment of a trust fund for protected areas in Madagascar which is scheduled to be created by July 2004. The project will support the Foundation created under a new Malagasy Foundation Law, which will manage the trust fund. The proposed Foundation will be established initially with pledged seed money from the Government, WWF and CI respectively, and will receive support (endowment and pass-through) from GEF, IDA and KfW. Other donors have also expressed strong interest. The objective of the project is to generate US\$ 50 million by the end of EP III.

Based on a recent estimate by an independent accounting firm the total minimum operational cost per year for the protected areas managed by ANGAP, plus the six areas currently managed by WWF, CI and the Wildlife Conservation Society (WCS), is approximately US\$ 3.1 million. This estimate covers all wages and recurring costs, but does not include infrastructure and equipment needs. The overall goal of the GoM and ANGAP is to provide funding for the recurrent costs of the PA system through the Government budget (covering wages) and revenues to be generated by ANGAP through ecotourism and innovative fundraising opportunities. The GoM has also already committed to provide financing through a debt swap agreement negotiated with the Government of Germany (for debt predating the Highly Indebted Poor Countries (HIPC) debt relief for Madagascar).

The funding scheme for the capitalization of the Foundation is based on a few key elements including: (i) Initial contribution will be provided by CI and WWF through pledged donation of US\$1 million each on target-specific investments (i.e., to cover recurring costs of selected priority protected areas, capacity building, activities in support zones and establishment of ecological corridors). This seed funding together with funding from ANGAP will allow the Foundation to be legally registered in Madagascar by meeting a legal requirement for minimum capital for a Foundation (US\$ 300,000). A fundraising campaign, allowing the Foundation and its partners to more effectively raise funds abroad and leverage these funds will be launched; (ii) It is expected that IDA/GEF funds under subcomponent activity 2.1.1., 2.1.2., 2.1.3. and 2.1.4, will be channeled through the Foundation to finance PA management at the end of year one based on

a pass-through type of mechanism; (iii) The contributions to the Foundation, from the Government of Madagascar will be committed as a result of the pre-HIPC debt relief agreement between Madagascar and Germany, over 19 years. It is also expected that an additional GEF contribution to match IDA, WWF, CI and other contributions (around US\$ 10 million) to an endowment fund will be requested at mid-term review once specific benchmarks and a track record of the Trust fund has been demonstrated. The key benchmark indicators will include effectiveness of the Board; quality of the Executive Secretariat of the Fund; effectiveness of Asset manager; disbursement conditions of the investments; commencement of grant making activities and; effectiveness of the institutional structure to carry out defined activities under the TF. Details have been agreed upon at appraisal. IDA will contribute up to US\$ 7.5 million to the endowment. It is envisaged, that this will occur by year 3 of EP III. The creation and capitalization of an endowment fund will lead to decreased dependence on external donor funding and will be a key milestone towards the establishment of a sustainable funding mechanism beyond the timeframe of the project. The target will be the generation of US\$ 50 million by the end of EP III.

Expected outputs: Operationalization of the Madagascar Protected Area Foundation; US\$ 50 million mobilized for trust fund for biodiversity conservation; Increased financial sustainability of the PA system and ANGAP through establishment of Trust Fund.

Project Component 3: Environmental Mainstreaming - US\$ 8.50 million

IDA financing would support selected elements of the environmental mainstreaming agenda covered under results 2.1, 2.2 and 2.3 of the agreed results framework for EP3, including efforts aimed at: (i) strengthening in-house institutional capacity of ONE to generate environmental information for policy decision-making, education and communication purposes; (ii) improving knowledge about the environment through selected environmental educational and communication activities, including those aimed at the Comités Communales de Développement covered by EP3 (totaling 530 communes); (iii) increasing DGE's institutional capacity as far as its environmental regulatory and policy-making functions are concerned, with a special emphasis on the development of sustainable financing mechanisms for the environment; (iv) ensuring adequate application of Madagascar's MECIE legislation; and (v) putting in place the necessary conditions for the effective management of the MEEF as well as the functioning of environmental units in all sector ministries.

Environmental Information, Education and Communication (IDA: US\$ 1.5 million)

IDA financing would support achievement of Result 211(a), 212(a), 212(b), and 212(c) of the agreed EP3 results framework. As far as Environmental Information is concerned, it would support ONE in expanding the preparation of TBEs to the regional level, thereby establishing a system of environmental information that would consist of: (i) one national TBE; (ii) six provincial TBEs; and (iii) 20 regional TBEs. Regional TBEs would coincide with the 20 agro-ecological regions that are distinguished in Madagascar, among other by the PADR. An important objective of IDA support would be to improve ONE's in-house institutional capacity to analyze and process the spatial dimensions of environmental data that are collected in the context of the TBEs. It is expected that improved environmental information would enable better targeting of public sector interventions, thereby improving the efficiency of public expenditures.

As far as Environmental Education and Communication are concerned, IDA will finance a selective number of activities that reflect the comparative advantage of the institutions that are associated with the EP3. First, as far as environmental education is concerned, IDA financing would support the preparation of educational materials by ONE based on information from the TBE. These materials would be made available to the Ministry of the Education as an input to achieve the objectives of its PERE program. In addition, IDA financing would be available to support ONE in providing technical assistance and expertise to the Ministry of Education concerning the training of teachers in environmental affairs. A protocol

between the Ministry of the Environment, Water and Forests and the Ministry of Education would be signed for this purpose. Second, as far as communication is concerned, IDA financing would support ONE in: (i) providing relevant environmental information on-line; and (ii) developing environmental information packages and training materials for opinion-makers, EP3 target communes as well as the mass-media. In addition, IDA financing would provide support for carrying-out environmental training and dissemination activities that are geared towards opinion-makers (e.g. church, legislators etc.) and EP3 target communes. To improve the effectiveness of environmental surveillance and control activities in classified forests and protected areas, parallel communication initiatives, especially those targeting the mass media, would be also be launched.

Environmental Legislation, Policy-Making and Regulations (IDA: US\$ 2 million)

IDA financing would support achievement of Results 221(b), 231(a), 231(c), 233(a) and 233(b) under the agreed results framework. In order to do so, IDA financing would be available to enable the DGE to carry out a total of 15 strategic environmental assessment (SEAs). This would permit the DGE to ensure an adequate coherence of sector legislation with the environmental legal framework as reflected in both national legislation as well as Madagascar's participation in international conventions and treaties. Based on the SEAs, the DGE would also be in a position to adequately prepare the terrain for the ratification of new international conventions and treaties in which Madagascar wish to participate. The SEIAs would also present the analytical framework and build capacity to establish new sustainable financing mechanisms for the environment such as carbon finance transactions and payment for ecological services. (in addition and in coordination with activities carried out under the Protected Areas Management and Forest Ecosystems Management components). In this context, it is worth mentioning that the GoM has expressed its interest: (i) to make contributions to the Malagasy Foundation for Protected Areas and Biodiversity from HIPC or other resources; and (ii) to earmark tourist visa revenues to ANGAP for the O&M of the protected areas system. The SEAs would also serve the DGE to develop sector guides for EIA application, thereby providing a reference tool to the private sector that would speed-up the EIA process as well as a strategic framework for ONE to carry out the EIA approval process. Besides support for SEAs, IDA financing would also seek to strengthen the capacity of the DGE to carry out upstream Environmental Analysis of proposed legislation and policy measures that would enable the MEnvEF to play a more pro-active role in maximizing positive and minimizing negative environmental externalities that are associated with changes in the economic incentive structure. IDA financing would also support the DGE in assuming its regulatory functions as far as environmental compliance is concerned, including: (i) strengthening of institutional capacity to audit ONE's performance in operating the quichet unique; and (ii) putting in place and effective mechanism to respond to environmental complaints from the general public.

Environmental Compliance (US\$3.0 million)

IDA financing would support achieving Results 231(b) and 231(c) of the agreed EP3 results framework. In this context, IDA financing would particularly aim to improve the application of MECIE legislation by supporting efforts that would increase the speed of the EIA process, reduce costs, while ensuring minimally acceptable quality. In order to achieve this, it has been agreed in discussions with the DGE and ONE to establish a one-stop-shop in ONE for the evaluation of EIAs and the issuance of environmental permits. In this context, ONE would coordinate the CTEs, lead the evaluation of EIAs and issue environmental permits that reflect the results of the evaluations. ONE would also coordinate compliance monitoring of environmental management plans. The role of the DGE would be control whether ONE applies the MECIE legislation correctly, both in the environmental permit issuance stage as well as the compliance monitoring stage. IDA financing would be available to position ONE to effectively assume its role to operate the EIA quichet unique and put in place an approche performance et service. This would entail support for: (i) institutional capacity building aimed at ensuring compliance with ISO 9001 quality standards; (ii) decentralization of the MECIE process by strengthening the CRMs as provincial platforms of information

and expertise; and (iii) promotion of environmental auto-regulatory mechanisms such as ISO 14000, MSC, FSC and GAA. For the sake of good governance and to provide a strong signal to the private sector, MEEF should ensure that all public investments effectively comply with the existing MECIE legislation.

Environmental Management and Coordination (IDA: US\$ 2 million).

IDA financing would support achieving Results 222(a), 222(b), 222(c), 222(d), 232(b) and 233(c) of the EP3 results framework. In this context, it would support the MEnvEF: (i) to put in place a financial management system that would enable the Ministry to position itself for budget support programs after EP3; (ii) following recommendations from SOATEG, to establish a M&E evaluation system that would enable tracking of EP3 results and impacts; and (iii) based on the results of institutional assessment carried out by BIODEV, implement agreed institutional reforms that would strengthen its presence on the ground as well as reinforce its coordination mechanism with other public sector programs and the donor community. In addition, IDA financing would be available to support the start-up and institutional strengthening costs of environmental units in existing sector ministries. In addition, it would assist the DGE in setting-up a platform for the coordination of the environmental units.

Annex 3: Estimated Project Costs
MADAGASCAR: Third Environment Program Support Project

Project Cost By Component	Local US \$million	Foreign US \$million	Total US \$million
1.1 Sustainable Development	27.71	7.95	35.66
1.2. Forest Ecosystems Management	23.11	6.12	29.23
1.3. Protected Areas Management	33.30	8.95	42.25
1.4. Marine and Coastal Zones Ecosystems Management	1.82	0.41	2.23
2.1.Environmental Information and Education	6.51	2.08	8.59
2.2. Sustainable Financing Mechanism	0.72	0.16	0.88
2.3. Environmental Governance	10.57	5.28	15.85
Total Baseline Cost	103.74	30.95	134.69
Physical Contingencies	4.14	2.21	6.35
Price Contingencies	5.82	2.04	7.86
Total Project Costs¹	113.70	35.20	148.90
Total Financing Required	113.70	35.20	148.90

¹ Identifiable taxes and duties are 22.5 (US\$m) and the total project cost, net of taxes, is 117.4 (US\$m). Therefore, the project cost sharing ratio is 34.07% of total project cost net of taxes.

Annex 4: Cost Benefit Analysis Summary

MADAGASCAR: Third Environment Program Support Project

Summary of Benefits and Costs:

1. This annex presents the results of the economic and financial analysis for the proposed activities to be financed by the IDA/GEF supported Environment Program III project in Madagascar. The main objective of the project consists, over 5 years, in financing: (i) the increase from 1.5 million to 6 million hectares in the surface area of natural forests under conservation, so as to reach the objective of 10 % of the national territory set by *International Union for the Conservation of Nature* (IUCN); and (ii) the development of economically viable alternatives to deforestation caused by farmers practicing slash and burn agriculture and unsustainable charcoal production.
2. The cost/benefit analysis of the three management modalities for natural forests conservation (protected areas, conservation sites, management transfers) indicates that maintaining and extending the natural forests areas under conservation from 1.5 to 6 millions hectares in Madagascar is *a priori* economically beneficial for the country as indicated in the table below.
3. Because of the weakness of the available data, these cost/benefit estimates are necessarily imprecise and should be treated only as orders of magnitude, especially for conservation sites and forest management transfers that are not yet precisely located. However, it should be borne in mind that these are very conservative estimates, especially because of the conservative assumptions made in calculating them and also because some important benefits, like carbon sequestration of standing forests, remained un-quantified. Consequently, even at the lower end of the estimate range, it is clear that the national economic benefits generated by the project are likely to be sufficient to justify the investments involved.

Costs/Benefits of Natural Forests Conservation

Present value (10%, 15 years)	Protected areas	Conservation Sites	Management transfers	Total
Management costs	(\$79.39)	(\$31.48)	(\$10.38)	(\$121.25)
tavy foregone revenues	(\$37.26)	(\$42.86)	(\$14.29)	(\$94.41)
fuelwood foregone revenues	(\$11.07)	(\$13.38)	(\$4.46)	(\$28.91)
NTFP foregone revenues	(\$12.42)	(\$14.29)	(\$4.76)	(\$31.47)
Total costs	(\$140.14)	(\$102.01)	(\$33.89)	(\$276.04)
Biodiversity conservation	34.60	35.91	-	\$70.51
Eco-tourism	60.28	-	-	\$60.28
Watersheds Protection	58.91	68.67	-	\$127.58
Sustainable fuelwood collection	-	-	13.62	\$13.62
Sustainable NTFP collection	-	-	20.75	\$20.75
Total benefits	153.79	104.57	34.37	\$292.74
NPV	13.66	2.56	0.48	\$16.70
ERR	32%	20%	12%	25%

4. It should be noted that of the three management modalities pursued under the project, the results of the cost/benefit analysis are much more sensitive for conservation sites and community based forest management than for protected areas. This reflects various factors. First, given the already globally

recognized biodiversity assets of the protected areas system, the probability that biodiversity conservation payments will be reduced or decreased faster than anticipated is lower for protected areas than for conservation sites, especially in view of the envisaged endowment fund for protected areas. Second, the probability of successful community based sustainable forest management (by collecting fuelwood and NTFP's) might be lower than the probability of eco-tourists continuing to visit the protected areas. Consequently, investments in conservation sites and community management transfers are more risky than for protected areas.

5. From a biological point of view, putting 4.5 million additional hectares of natural forests under more effective conservation management modalities will enhance the representativeness of species and habitats already included in the protected areas system and will improve the connectivity of conserved forests through biological corridors. At the same time, the proposed natural forests conservation investments would have significant positive impacts on local populations. Off-site effects of natural forests conservation would have important beneficial effects on populations downstream of natural forest areas, including rice farmers in irrigated areas and potable water consumers in urban centers. Natural forests management transfers to grassroots communities would generate important benefits for local populations through sustainable wood fuel production and Non Timber Forest Products – NTFP- collection. The analysis confirms that the overall impact of the project on local populations is positive as the monetary gains of beneficiaries surpass the opportunity costs of lost economic opportunities incurred by upstream farmers who, due to the project, cannot continue unsustainable slash-and-burn activities and wood-fuel production.

6. For equity reasons, establishing a system of income transfers under which gaining households would financially compensate losing ones is conceivable in theory, but impractical due to the high incidence of poverty in rural areas. Therefore, the solutions pursued under the project would be to finance the development of alternative income generating activities for communes in the periphery of natural forests conservation areas in order to compensate for revenues that could potentially have been generated through slash-and-burn agriculture and unsustainable wood-fuel and NTFP collection. These alternatives consist of: (i) stabilizing agriculture around natural forests through soil conservation techniques; (ii) promoting sustainable fuel-wood harvesting and non timber forest products (NTFP) collection in the context of forest management transfer programs; (iii) introducing more efficient carbonization techniques and diffusing more efficient wood stoves; and (iv) supporting reforestation programs.

7. The economic cost benefit analysis show a positive NPV for each of three conservation management modalities pursued under the project. Consequently, the financing of recurring costs associated with these modalities is economically feasible and becomes a problem of benefits transfer amongst the beneficiaries of the renewable management of Madagascar's forests. When considering the specific situation of Madagascar, specifically the extreme poverty of both the urban and the rural population, the identified sources of financing for these recurring costs are: (i) the net benefits of eco-tourism and the willingness to pay of developed countries for the preservation of Madagascar's endemic biodiversity in the protected area network, (ii) the willingness to pay of developed countries for the preservation of biodiversity in conservation sites and ((iii) a tax on charcoal in community managed forests.

Main Assumptions:

8. The main assumptions section is divided into five parts, covering: (i) deforestation (rate, areas, yields, revenues losses), (ii) natural forests management costs, (iii) natural forests management benefits (iv) natural forests management benefits distribution and (v) alternatives to deforestation.

2.1. Deforestation

9. In Madagascar, the origin of deforestation is mainly slash-and-burn agriculture (*tavy*) and, in the Western and Southern regions of the country unsustainable fuel wood collection practices. These two destructive practices are, in addition, accompanied by extensive exotic flora and fauna (and marginally pharmaceutical plants) collection on the periphery of cleared areas.

Deforestation rate and area

10. Without project, the deforestation rate of the 6 million hectares of natural forests that will be conserved by the project, would hypothetically be 1 % per year (including in existing protected areas), which is approximately the deforestation rate observed through comparison of satellite images **landsat 5** and 7 over the last 10 years in natural forests (0.86 % per year).

11. With the project, half a million hectares of additional protected areas will be created in the first year of the project, 0.6 million hectare of conservation site per year, as from the second year of the project and 0.2 million of forest management transfer per year, as from the first year of the project. In all cases, 60 % of the surface area created is located in the three provinces of North and East (Antsiranana, Antananarivo and Toamasina), and 40 % in the two provinces of South and West (Mahajanga and Tuléar).

12. Under this hypothesis, maintaining the existing protected area network and putting new areas of natural forests under protection in such a pace, will avoid deforestation of 175,000 hectares over the five year implementation period, and of 775,000 hectares over a 10 year period after project implementation. Following this calculation, 15 years of avoided deforestation in six million hectares of natural forests under more effective conservation arrangements would represent an area of approximately 10 % of the remaining natural forests of Madagascar (8.8 million hectares).

13. Assuming that 1.5 hectare of deforestation involves one farming household practicing slash and burn agriculture and charcoal production, 88,000 farming households will be affected over the five year life of the project and an additional 186,000 farming households over a 10 year period after project implementation.

Table 1: With project annual and cumulated area of avoided deforestation

<i>Areas (million ha)/Years</i>	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Area under conservation		1.5	2.8	3.6	4.4	5.2	6	6	6	6	6	6	6	6	6
Annual avoided deforestation		0.015	0.028	0.036	0.044	0.052	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06
Cumulated avoided deforestation		0.015	0.043	0.079	0.123	0.175	0.235	0.295	0.355	0.415	0.475	0.535	0.595	0.655	0.715

Yields (rain fed rice, wood fuel, soils losses)

14. The use of cleared forest land differs according to province. In Antsiranana, Antananarivo and Toamasina, cleared land is used to grow rain fed rice for three years, then put in fallow for five years, before another round of slash-and-burn agriculture for three years. In Mahajanga and Tuléar cleared land is used to grow fuel wood in the first year ; then it is used to grow rain fed rice for three years.

15. The yield of rice grown under slash and burn conditions is approximately 1.5 ton of paddy per

hectare and per year over three years (in fact the yield slightly decrease during the three years). As for wood fuel collection, from an average estimation made for the western part of the country, it is considered that wood fuel collected on one hectare of forest in an unsustainable way amounts to a total of 25 ton.

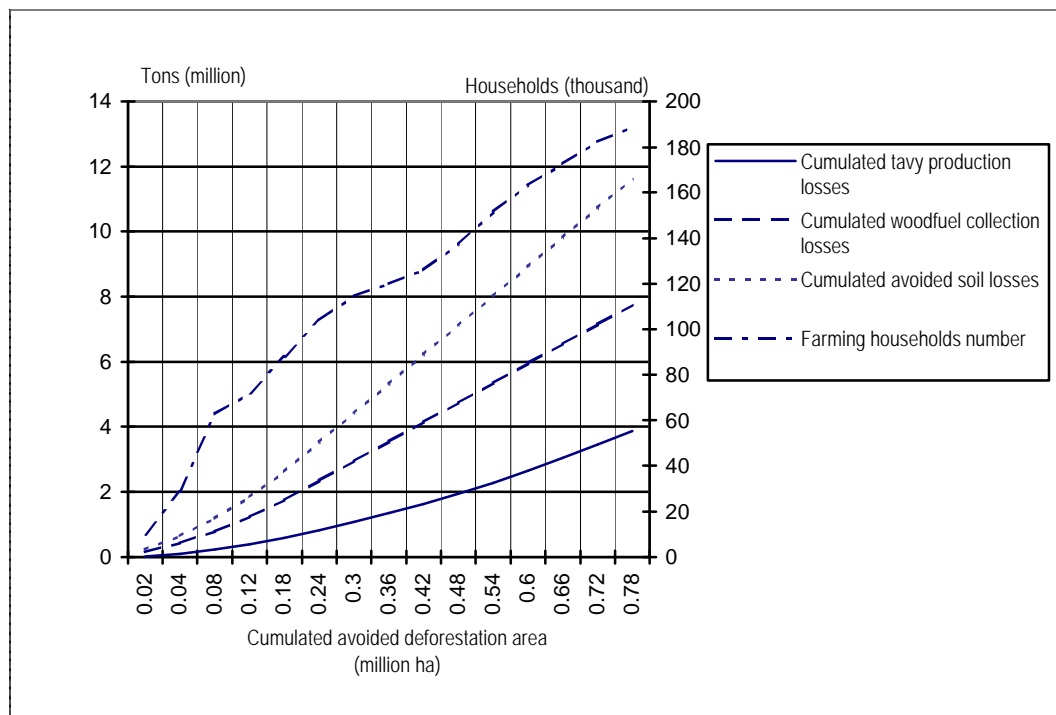
16. With the project, and under the above hypotheses, cumulative foregone paddy production under slash-and-burn conditions equal 0.6 million tons over the five year project cycle, and 3.7 million tons over the following 10 year period. Cumulative foregone unsustainable fuel wood collection amounts to 1.75 million tons over the five year project period and 7.75 million tons 10 years thereafter.

Table 2: With project annual and cumulated foregone paddy and fuel wood production

<i>Losses (million tons)/Years</i>	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>	<i>6</i>	<i>7</i>	<i>8</i>	<i>9</i>	<i>10</i>	<i>11</i>	<i>12</i>	<i>13</i>	<i>14</i>	<i>15</i>
Area under conservation (million ha)	1.5	2.8	3.6	4.4	5.2	6	6	6	6	6	6	6	6	6	6
Annual wood-fuel collection losses	0.15	0.28	0.36	0.44	0.52	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
Cumulated wood-fuel collection losses	0.15	0.43	0.79	1.23	1.75	2.35	2.95	3.55	4.15	4.75	5.35	5.95	6.55	7.15	7.75
Annual paddy production losses	0.02	0.06	0.14	0.16	0.20	0.23	0.26	0.27	0.28	0.31	0.33	0.34	0.36	0.37	0.38
Cumulated paddy production losses	0.02	0.09	0.23	0.39	0.59	0.82	1.08	1.35	1.63	1.94	2.27	2.61	2.97	3.34	3.72

17. Without project, farmer households who clear the forest for agriculture and wood fuel production collect *Non Timber Forest Products* (NTFP), mainly fruits and animals, in addition to medicinal plants for artisan use. It is assumed that for one cleared hectare, ten hectares of forest are degraded through extensive NTFP collection. With the project, farmer households would lose the opportunity for unsustainable NTFP collection in 1.75 million hectares of natural forest at the end of implementation of the project and near 7.75 million hectares ten years after the end of the project.

Figure 1: Production and soil avoided losses during a 15 years conservation period



18. In Madagascar, the major effects of deforestation are mainly visible through sedimentation of: (i) irrigation systems for rice cultivation; and (ii) urban water supply systems. Cases of partially uncultivated irrigated perimeters or of excessive canal maintenance costs caused by run-off erosion are numerous. Other infrastructures such as hydroelectric dams, ports or drinkable water supply of villages are also affected by deforestation. As a matter of fact, forest cover regulates water flow and provides a buffer function, which partly prevents risks of flood in the rainy season and risk of water shortage in dry season.

19. Annual soil losses due to erosion caused by deforestation are estimated at about 15 tons per hectare. Consequently, with the project, cumulative avoided soil losses are approximately 2.60 million tons over the five year project lifecycle and 11.60 million tons over the ten years period thereafter.

Foregone revenues (opportunity costs of conservation)

20. Net revenue from converted forest land for rice production under slash-and-burn conditions (defined a farm gate price less labor cost) is estimated the equivalent of 0.5 ton/ha of paddy per year. Assuming a farm gate price of \$ 160 per ton, income earned from converted forest land is \$ 80 per hectare per year.

21. As for fuelwood collection, it is assumed that net revenue is half the producer price. With the producer price estimated at \$ 15 per ton and fuel collected on one hectare of forest in an unsustainable way is 25 tons a year, income earned from forests for fuel wood purposes is \$ 187.5 per hectare.

22. In a recent survey concerning NTFP's conducted in the region of Ambohitantely, in the North Eastern region of Madagascar, it is estimated that revenue from the collection of fruits, animals and more

marginally medicinal plants for artisan use is \$ 4 per hectare for 150 households who cover 1,500 hectares of forests, which amounts to \$40 per household on average.

23. Consequently, without the project, one cleared hectare produces an agriculture return of \$ 80 per year when it is cultivated for rain fed rice, an energy return of \$ 187,5 per year when fuel wood is harvested and a return of \$ 40 when fruits and animals are harvested in the neighboring 10 hectares.

24. With the project (over a period of 15 years and by taking an discount rate of 10 % equal to the opportunity cost of capital in Madagascar), the present value of foregone revenues due to the conservation of 6 million hectare of natural forest, is about \$ 85 million for paddy production, \$ 27 million for fuel-wood collection and \$ 28 million for NTFP collection as indicated in Table 3 below.

Table 3: Stream of foregone revenues from avoided deforestation

Foregone production (\$million/year)	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	PV
Paddy	-1.2	-3.4	-7.5	-8.6	-10.6	-12.5	-13.8	-14.4	-15.1	-16.5	-18.2	-19.6	-20.7	-21.9	-22.7	-85.4
Fuel-wood	-1.1	-2.1	-2.7	-3.3	-3.9	-4.5	-4.5	-4.5	-4.5	-4.5	-4.5	-4.5	-4.5	-4.5	-4.5	-26.6
NTFP	-0.4	-1.1	-2.5	-2.9	-3.5	-4.2	-4.6	-4.8	-5.0	-5.5	-6.1	-6.5	-6.9	-7.3	-7.6	-28.5

25. In conclusion, the present value of the stream of opportunity cost of the natural forest conservation component of the project is therefore approximately \$ 140 million.

2.2. Natural forests conservation management costs

26. Costs of protected areas network management include operation cost (head office, regional office, site operation and daily activities) and investment cost (managing biodiversity, developing eco-tourism, environmental education). In a recent audit report, the operation costs of the protected area network national agency (ANGAP) is estimated at \$ 2.5 per hectare per year, which amounts to \$ 3.75 million a year for a network covering one and a half million hectares. For the five coming years, investments for surveillance and control of protected areas, research on biodiversity, visitor infrastructure and environmental education have been estimated at \$19 million, that is approximately \$ 2.5 per hectare and per year. Consequently, over the 15 year period adopted for the economic analysis, the management cost of the protected areas network is estimated to be \$ 5 per hectare per year. Under these assumptions, the present value of this stream of costs for the management of 2 million hectare of protected area is \$ 81.5 million for a period of 15 years and a discount rate of 10%.

27. The cost for the creation and the management of one hectare of conservation site is not yet known as this conservation management modality is new. It is assumed under the present analysis that an initial investment of \$ 5 per hectare and a running cost of \$ 1 per hectare will be required. Under these assumptions, the present value of this stream of cost for the management of 3 million hectare of conservation sites would be \$ 27 million.

28. The cost for the forest management transfer to communes of one hectare of forest is, based on experience of on-going schemes, estimated at \$ 10/ha to cover investments in the first three years and \$ 1 for running in the following years. Under these assumptions, the present value of this stream of cost for the management transfer grassroots community of 1 million hectares of forest is \$ 10 million.

Table 4: flows of forest conservation management costs

Management cost (\$ million)	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	PV
Area under conservation	1.5	2.8	3.6	4.4	5.2	6	6	6	6	6	6	6	6	6	6	
Protected areas	-22.5	-11.3	-5.0	-5.0	-5.0	-23.8	-11.3	-5.0	-5.0	-5.0	-23.8	-11.3	-5.0	-5.0	-5.0	-81.5
Conservation sites	-3.0	-3.6	-4.2	-4.8	-5.4	-3.0	-3.0	-3.0	-3.0	-3.0	-3.0	-3.0	-3.0	-3.0	-3.0	-26.9
Management transfers	-0.8	-1.4	-2.0	-2.0	-2.0	-1.6	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-10.1

29. In conclusion, the present value of the management flows of cost of 6 million hectares of natural forest conservation is therefore \$ 120 million.

2.3. Natural Forests Conservation National Benefits

30. The benefits of strict conservation of natural forests differ slightly between protected areas and conservation sites. From a biological point of view, the creation of 3 million additional hectares of conservation sites will enhance the representativeness of species and habitats included in protected areas and the connectiveness of conserved forest spaces through building biological corridors. Conservation sites are primarily aimed to receive eco-tourists, which sets them apart from the protected areas network under which 10 protected areas are currently visited on an annual basis by 100, 000 people. Finally, conservation of natural forests will preserve the hydrological function of forests, thereby contributing to maintaining the productivity of irrigated perimeters and the quality of drinking water in urban centers that are located downstream the watersheds involved. The benefits of forest management transfers to communes are those associated with the sustainable harvesting of fuelwood and NTFP. For simplification reasons, watershed hydrological protection benefits are not considered as a benefit of forests management transfer to grassroots communities.

Benefits of biodiversity conservation

31. As bio-prospecting permits for pharmaceutical purposes are not awarded in the protected areas network, national benefits derived from biodiversity conservation are direct payments (net of management expenses) from the international donor community to ANGAP, as well as the financing of investment and operating costs of protected areas that are under direct management by international NGOs financing. Direct payments to ANGAP have averaged an estimated an annual \$ 3 million over the last four years, while international NGOs management expenses for the eight protected areas under their direct management are estimated at \$ 1.5 million a year. Thus, the total national benefits of biodiversity conservation in Madagascar PA network are approximately \$ 3 per hectare of protected area per year. In one first approximation, the national benefits related to conservation of biodiversity in conservation sites are considered as lower than in protected area case because direct payments for Malagasy biodiversity conservation are already high, and because conservation site will be much larger in area than protected area. Therefore, total national benefits of biodiversity conservation in the envisaged conservation sites are estimated at \$ 2.5 per hectare per year.

32. Given that direct payments for Malagasy biodiversity conservation are already relatively high, a significant increase of these benefits is unlikely in the years to come. Reduction of these benefits might be even more probable, especially because it seems easier for an international NGO to obtain financing for the creation of a new conservation area than for the management of an existing network managed by a national agency. In order to reflect this, it is assumed that global willingness to pay for biodiversity conservation will be decreasing by 5% a year which will reduce net benefits to \$1.5/ha/year after 15 years for protected

areas and \$1.25 for conservation sites. Under the above assumptions, the present value of biodiversity conservation benefit flows during 15 years at a discount rate of 10 % is \$ 34.5 million for protected areas network and \$ 36 million for conservation sites.

Table 5: flows of biodiversity conservation benefits

<i>Biodiversity Conservation Benefits (\$ million)</i>	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	<i>PV</i>
Protected areas	4.5	5.7	5.4	5.2	4.9	4.7	4.5	4.3	4.1	3.9	3.7	3.5	3.3	3.2	3.0	34.6
Conservation sites	1.5	2.9	4.3	5.6	6.8	6.5	6.2	5.9	5.6	5.3	5.1	4.8	4.6	4.4	4.2	35.9

Benefits of eco-tourism

33. With an average annual 10% growth rate since the early 1990s, tourism is an increasingly important economic sector that has become the third foreign exchange earner after fisheries and vanilla production. In 2000, 160,000 tourists visited Madagascar and more than half of them (55%) considered themselves eco-tourists. Madagascar's protected areas have established themselves among the main tourist attractions of the island. Ten protected areas (see Table 5 below) actively contribute to the development of tourism in Madagascar as they attract a growing number of tourists : about 100,000 visitors in 2001, the latest year of reference. Besides, six other protected areas, (Masoala, Marojejy, Tsimanampesotse, Kirindy Mitea, Baie de Baly and Zombitse) are endowed with undeniable attractions and should reinforce the network's contribution to the development of tourism in Madagascar in the years to come.

Table 6 : protected areas for eco-tourism

<i>Name of protected area (from north to south)</i>	<i>Surface in ha</i>	<i>Number of visitors in 2001 (% of total)</i>
Montagne d'Ambre	18 200	8 170 (8 %)
Ankarana	18 825	6 898 (7 %)
Ankarafantsika	60 520	4 617 (5 %)
Tsingy de Bemaraha	66 630	3 351 (3 %)
Mantadia/Analamazaotra	10 000	26 478 (27 %)
Ranomafana	41 601	15 668 (16 %)
Andringitra	31 160	1 750 (2 %)
Isalo	81 540	27 678 (28 %)
Andohahela	76 020	1 636 (2 %)
Total	404 496	96 246 (98 %)

Source : ANGAP, 2003.

34. What makes up national benefits of eco-tourism are on the one hand entrance fees collected by ANGAP in the 10 protected areas that are currently visited and on the other direct (transport, hotels, catering services, local crafts, guides) and indirect national added value (activities induced from the first ones) of eco-tourism in these ten protected areas. With 100,000 visitors in 2001, the latest year of reference, an average \$ 5 entrance fee per visitor and a \$ 55 direct and indirect national added value per visitor (recently measured for five of the ten visited protected areas –Andasibe, Ranomafana, Isalo, Andringitra, Ankarantiska), the protected areas generate \$ 6 million net revenues per year to the country. Thus, the total of national benefits of eco-tourism in protected areas is approximately \$ 4 per hectare of protected area per year.

35. The World Tourism Organization (WTO) foresees a 6-8 % tourist visit annual growth rate in the Indian Ocean for the coming 15 years. A conservative assumption of a 5 % visit increase per year for 15 years forecasts an annual \$ 4/ha to 8/ha revenue stream from eco-tourism. Under these assumptions, the present value of eco-tourism benefit flows associated with the protected areas network during 15 years at a

discount rate of 10 % is 60 million.

Table 7: Flows of Eco-Tourism Benefits

<i>Eco-tourism Benefits(\$ million)</i>	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	<i>PV</i>
Number of eco-tourists	0.10	0.11	0.11	0.12	0.12	0.13	0.13	0.14	0.15	0.16	0.16	0.17	0.18	0.19	0.20	
Eco-tourism net benefits	6.0	6.3	6.6	6.9	7.3	7.7	8.0	8.4	8.9	9.3	9.8	10.3	10.8	11.3	11.9	60.3

Benefits of hydrological protection of watersheds

36. Hydrological benefits represent avoided losses in productivity or quality of production by the economic infrastructures that are situated downstream from the natural forests watersheds where the river springs supplying them with water are typically located. Unlike the case for biodiversity conservation and eco-tourism, quantification and monetary evaluation of hydrological benefits resulting from avoided deforestation in upstream forests are more difficult to understand because of the complex biophysical relation between deforestation, change of water flow, worsening erosion on the one hand and change of productivity in irrigated perimeters or change of drinkable water production on the other.

37. Analysis, for each watershed, of: (i) the 1996 National Ecological and Forest Inventory (*Inventaire Ecologique et Forestier National –IEFN–*); (ii) spatial data as provided by LANDSAT satellite image processing; and (iii) statistics from the water and power supply company JIRAMA, demonstrates obvious hydrological linkages between on the one hand 20 out of 41 protected areas located upstream and at least 430,000 hectares of irrigated perimeters and 17 towns with an annual 8.4 million m³ drinkable water consumption situated downstream on the other hand (see Table 8 for details).

Table 8 :Protected areas with hydrological function

<i>Name of protected area</i>	<i>Surface of protected area (ha)</i>	<i>Surface of irrigated perimeters (ha)</i>	<i>Volume of drinkable water(m³)</i>
Manongarivo	39491	59239	309983
Anjanaharibe Sud	70288		220077
Ankarafantsika	100848	36486	48140
Marojejy	70288	17448	250842
Ambatovaky	24158	2616	
Marotandrano	33795	2616	19529
Betampona	2342	681	
Mangerivola	8919	19142	
Midongy du sud	153522	14907	6226
Pic d'Ivohibe	3302	16479	1228
Manombo	2013		20754
Ranomafana	36412	14557	42705
Andringitra	15884	16479	
Tsaratanana	43733	45037	309983
Zahamena	62491	18232	71303
Andohahela	62384	8713	68952
Anjozorobe	259695	47115	
Bemaraha	80484	22615	1.699
Mantadia	14736	22703	
Montagne d'Ambre	18164	66093	7.0142.40
Total	1.102.949	431.158	8.385.661

38. As for irrigated perimeters, two approaches may be applied for the quantification of the effects of

preserving forest cover and the corresponding monetary evaluation of their benefits : i) evaluation of avoided losses of production, which provides the most reliable figures when they can be calculated; and (ii) evaluation of farmers' *Willingness to Pay* (WTP) to avoid deforestation, which is easier to calculate but less reliable because of its subjectiveness. Because of their poverty and their small contribution capacity, rice farmers indeed pay only a tiny portion of investment and maintenance cost of irrigated perimeters which are largely government subsidized. It is therefore reasonable to assume that WTP for irrigated perimeters protection is lower than the earning expected.

39. A recently conducted survey in the region of Maroantsetra in the north east of Madagascar with the objective to calculate the WTP of rice farmers situated in the lowlands to avoid silting and flooding of their tiny irrigated perimeters shows a monetary value of \$5 per hectare of irrigated perimeter, i.e the monetary equivalent of 30 kg of paddy at farm gate price, although productivity in the region is 2.5 tons per hectare. This is an interesting result since the forest cover of the watershed under study exceeds 70% of the watershed surface, while the this figure for the typical watershed in Madagascar is 30%. Consequently, this result reflect a monetary value of hydrological benefits resulting from preserving forest cover in protected areas, which is certainly a conservative assumption.

40. Two recent evaluations of losses in production due to severe irrigation and canal sand silting in Madagascar's irrigated perimeters are available. However, they do not permit to establish a cause-effect relation between a certain degree of sedimentation and a certain deforestation process upstream. Following these evaluations the cost of production losses are estimated between \$ 40 (Maroantsetra region) and \$ 80 (Alaotra region) per hectare. With an average productivity of 2.5 tons of paddy per hectare in irrigated perimeters and a farm gate price of \$ 160/t, \$ 40 loss of revenue per hectare of irrigated perimeter is the equivalent of 10% loss of production (250 kg of paddy); such loss may be either or simultaneously due to silted irrigation canals because of worsening erosion and resulting sediment deposits, to bad irrigation in dry season and flooding in rainy season, as both occurrences result from degradation of water flow regulation ensured by forest cover. The estimate obtained following this method is eight times higher than Maroantsetra watershed rice farmers' WTP, which confirms that the latter approach provides a conservative appraisal of hydrological benefits of forests and can be transferred to all the irrigated perimeters that are under the influence of forests.

41. As for drinkable water in urban areas, there are two approaches to estimate hydrological benefits: (i) water users' willingness to pay, (ii) evaluation of the cost of replacing natural filtration and water storing system with an artificial one. The only available figure is from a recent survey of households willingness to pay more in order to benefit from clean and of regular flow water that was conducted in Fianarantsoa. This evaluation provides an additional WTP of \$ 0.15/m³ against the present price which is \$ 0.30 per m³. Failing to have other supplementary data, this evaluation is the one retained for the analysis concerning all the towns supplied with drinkable water by the rivers having their springs within the protected area network.

42. In retaining as a conservative assumption that WTP accumulated amount represents willingness to prevent silting and flooding in irrigated perimeters and to have a steady supply of clean drinkable water, in applying it to all the infrastructures affected by the protected areas network (400,000 hectares of irrigated perimeters and 8.4 million m³ of drinkable water), the sum of the two WTPs is \$3 per hectare of protected area per year, of which \$ 1.3 relates to irrigated areas and \$ 1.7 to drinkable water. In one first approximation, the national benefits of hydrological protection of watersheds through conservation sites are considered as equal of those in protected areas.

43. Moreover, hydrological benefits increase over time. Indeed, productivity and quality of production

are lower when forest cover in protected areas and conservation sites progressively disappears as a result of forest clearing. Under a conservative assumption of a 5% increase of water users' WTP per year for 15 years, benefits increase to \$ 6 per hectare. Under these assumptions, the present value of watershed protection benefit flows during 15 years at a discount rate of 10 % is \$ 59 million for protected areas and \$ 69 million for conservation sites.

Table 9: flows of forest conservation watershed protection benefits

<i>Watershed protection Benefits (\$ million)</i>	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	PV
Protected areas	4.5	6.3	6.6	6.9	7.3	7.7	8.0	8.4	8.9	9.3	9.8	10.3	10.8	11.3	11.9	58.9
Conservation sites	1.8	3.7	5.7	7.8	9.9	10.4	11.0	11.5	12.1	12.7	13.3	14.0	14.7	15.4	16.2	68.7

Benefits of sustainable harvest of fuelwood and NTFP

44. According to experiments conducted in the region of Mahajanga, the management of one hectare of forest by local populations allows a sustainable harvest of 0.35 ton (cubic metre equivalent) per year of fuelwood. It is considered that net revenues from wood fuel collection are half the producer price, which implies that with the actual producer price at \$ 15 per ton, net benefit per hectare and per year amounts to \$ 2.6. Benefits of sustainable harvest of NTFP per ha remain unchanged at \$4 per year as there is only a concentration of collection in the forest that is transferred.

45. In view of these benefits and by considering a progressive management transfer to local communes (0,2 million hectare a year during 5 years), the present value of sustainable collection benefit flows during 15 years at a discount rate of 10 % is \$ 14 million for wood-fuel collection and \$ 21 million for NTFP collection.

Table 10: flows of sustainable harvests benefits

<i>Sustainable Harvest Benefits (\$ million)</i>	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	PV
Fuelwood volume	0.0	0.1	0.14	0.21	0.28	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.4	0.35	4.2
Fuelwood benefits	0.0	0.5	1.1	1.6	2.1	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	13.6
NTFP benefits	0.0	0.8	1.6	2.4	3.2	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	20.8

Natural Forests Management Benefits distribution (protected areas network example)

46. The distribution of benefits associated with each natural forests management modality is closely tied with the type of benefits provided by each modality. For example, preserving the protected area network is beneficial to four social groups , including: (i) rice farmers in irrigated plains; (ii) water consumers in urban centers where water is supplied by rivers having their springs in protected areas, (iii) tourism operators; and (iv) the National Association for the management of protected areas (ANGAP).

47. As far as the distribution of economic benefits is concerned, rice farmers and drinkable water consumers (about 300,000 households, mainly rice farmers) obtain the highest flow of net benefits amounting to a present value of \$ 59 million (see table in part 1: Summary of benefits and costs). Flows of net benefits of tourism operators are \$ 55 million and those of ANGAP are approximately \$ 40 million.

Benefits come mainly from direct payments for biodiversity conservation as eco-tourism benefits are marginal with present entrance fees at \$ 5 and have to be shared by half with protected area neighboring communities.

48. In number, the main beneficiaries of protected area preservation include 265,000 rice growing rural households and 25,000 households supplied with drinkable water in urban areas, situated downstream the protected areas. Therefore, it can be said that biodiversity conservation has a positive economic effect on poor populations in Madagascar.

49. On the other hand, preserving the protected areas, to the extent that it prevents deforestation through slash and burn practices, may be detrimental to a fifth social group that includes slash and burn farmers (about 50,000 households after 10 years). This social group experiences lost economic opportunities that amount to a present value of \$ 61 million (see table in part 1: Summary of benefits and costs).

50. Following the identification of potential winners and losers along with the corresponding monetary evaluation of earnings/losses, three remarks can be made: (i) ANGAP is worst-off among the three categories of beneficiaries; its main source of revenues (direct payment for biodiversity conservation) is uncertain and is likely to decrease; (ii) ANGAP nearly receives nothing from eco-tourism benefits, as the quasi totality of earnings go to tourism operators, although the protected area network is a natural asset that is essential for the development of tourism in Madagascar; and (iii) the earnings of the 300,000 households of rice farmers and drinkable water consumers compensate the losses of the 50,000 slash and burn farmers practicing *tavy* ; such earnings increase with time whereas the losses of the farmers practicing *tavy* stabilize after 10 years because of fallow periods necessary for the soil to recover its fertility.

51. The establishment, for equity sake, of a transfer system in which the gaining households (water users) would financially compensate the losing households (slash-and-burn farmers) is in theory envisageable and economically possible, but present three sorts of difficulties , including: (i) it is not easy to identify which households would practice *tavy* without the project ; (ii) the setting up of a mechanism for transfer of part of the benefits of the gainers towards the losers would certainly present high transaction costs because of the high number of contributors and recipients and of the difficulty of organizing mandatory levies on the contributors ; and (iii) Madagascar is one of the poorest countries of the world. Consequently, gaining households, whether in rural areas or in urban areas, are by majority households who live below the absolute poverty line (\$ 1 per day).

52. Nevertheless, the global impact of the project on local populations is beneficial because the monetary gains of the beneficiaries surpass or equal the losses incurred by the upstream farmers who, due to the project, cannot continue practicing slash-and-burn practices.

53. Another solution consists in promoting activities that provide alternative to pressures in communes peripheral to protected areas and conservation sites, to compensate for the foregone revenues associated with slash-and-burn paddy production and unsustainable fuelwood and NTFP harvesting practices.

2.4.Alternatives to deforestation

54. As calculated in the first part of the assumptions section, putting 6 millions hectares of natural forests under more effective conservation modalities will result in losses for upstream farmers practicing slash and burn agriculture and non sustainable wood fuel collection. Theses losses are mainly

slash-and-burn paddy production and unsustainable wood fuel and NTFP collection. With the hypothesis on yields retained in the calculation of the avoided deforestation opportunity cost, the cumulated losses over 15 years would be 3.9 million tons of paddy production from tavy, 7.75 million tons for fuelwood non sustainable collection and a present value of \$ 28.5 million for NTFP extensive collection.

55. The progressive management transfers of 1 million hectare during the five years of project implementation would provide the upstream farmers a cumulated sustainable collection over 15 years of 4.2 million ton of fuelwood at a present value of \$ 13.6 million of NTFP sustainable collection.

56. In addition to management transfers, improved measures for carbonization and household stoves would be set up in order to reduce wood-fuel consumption. Improvements in carbonization and wood stoves will reduce the cumulative consumption over 15 years of wood for energy by 7.5 million tons, maintaining consumption at the current level of 10 million tons per year. In fact these improvement neutralize only the effects of population growth on wood for energy consumption. Then reforestation is needed, especially in the three provinces where wood-fuel come from natural forests, i.e. Tuléar, Mahajanga and Antsiranana. With a mean volume from plantations taken as 100 tons per hectare after ten years, the surface that is needed to supply the wood-fuel losses not covered during the ten first years by management transfers is around 55 000 hectares of reforestation.

57. Paddy yields in the hillsides around conservation areas are around 0.8 ton per hectare and without soil conservation techniques slightly decreasing over 5 years to around 0.7 ton per hectare. According to the experiences of EP I and II, conservation techniques of agriculture lands allows for an increase of around 14 tons over 15 years in paddy production. With such yields, 280,000 hectares must be put under conservation agriculture activities to compensate the production losses compared with the situation without project (3.9 million tons over 15 years).

58. In summary, in order to compensate losses for upstream farmers practicing slash and burn agriculture and non sustainable wood fuel collection, there is a need for deforestation alternatives to be financed through ODA within the project or with other projects. Deforestation alternatives comprise activities to reduce wood fuel consumption, around 55 000 hectares of reforestation in fast growing species like Eucalyptus and conservation agriculture for around 280 000 hectares. All theses activities show, according to the experience of EP II and Energy Project II, positive returns for the country, even by taking into account only direct or on-site benefits.

Sensitivity analysis / Switching values of critical items:

59. The sensitivity analysis for the 3 types of natural forests management look at the switching values for variables used in the calculation of the different element of the costs and benefits. The results of the sensitivity analysis are summarized in the table below. Because of the weakness of the available data, these switching values are necessarily imprecise and should be considered only as comparison tools between management types.

60. The results suggest that the outcomes are more sensitive to even small changes in estimated flows of costs and benefits for conservation sites and natural forests management transfers. This finding reinforces the fact that it is important to design conservation sites and management transfers in such a way so as to maximize in the first case watershed protection benefits and in the second case the development of biodiversity-related revenue generating opportunities.

Table 11: Switching values for the three types of natural forest conservation modalities

<i>Percentage of variation</i>	<i>Protected Areas</i>	<i>Conservation Sites</i>	<i>Management Transfers</i>
Management costs	+ 70 %	+30 %	+20 %
Tavy (rain fed rice) foregone revenues	+ 100 %	+ 16 %	+ 5 %
Fuelwood foregone revenues	+ 114 %)	+ 18 %	+ 12 %
NTFP foregone revenues	+ 100 %)	+ 25 %	+ 15 %
Biodiversity conservation	- 33%	- 8 %	-
Eco-tourism	- 25%	-	-
Watersheds Protection	- 23 %	-3 %	-
Sustainable fuelwood collection	-	-	- 6 %
Sustainable NTFP collection	-	-	- 5 %

61. For natural forest conservation activities, the elements of costs and benefits for which there exist a non negligible probability of important variation over the 15 coming years are the amount of direct payments for conservation of biodiversity for protected areas and conservation sites. Indeed, contrary to benefits related to eco-tourism and to protection of watersheds, the national benefits of conservation of biodiversity are not sustainable as they are related to the capacity of international NGO's and funds for the environment to capture the rich country households' willingness to pay for conservation of biodiversity, in general, and to the capacity of Madagascar of attracting part of such funds to preserve the Malagasy biodiversity.

62. Besides, it is little probable, taking account of the already relatively high level of direct payments for conservation of Malagasy biodiversity, that such benefits will increase significantly in the coming years. It is even more likely that such benefits will decrease as it seems to be much easier for an international NGO to secure financing for the creation of a newly protected area than to finance the management of an existing protected area network managed by a national organization.

63. For protected areas, biodiversity conservation direct payments switching value is \$ 2 per hectare and per year at the beginning of the project and 1 \$ after 15 years, amounting to an annual total amount of direct payments for conservation of biodiversity in protected area network of \$ 2 million. Such an event is not very probable if an *Endowment Fund* of \$ 50 million being constituted. Indeed, by taking as a hypothesis an interest rate of 6 % per year and running costs of 10 %, such an endowment funds would allow to ensure a sustainable financing of \$ 2.5 million per year.

64. Conversely, the situation of conservation sites is much more fragile. The amount per hectare and per year of direct payments for conservation of biodiversity that cancels the NPV is \$2.3 instead of \$2.5 per hectare at the beginning of the project, that is a decrease of 8 % compared with assessments. In other words, if within 15 years, direct payments for conservation of biodiversity are less than \$ 4 millions per year for conservation sites, the conservation modality is not economically viable. Therefore, the creation of effective mechanisms to continue to capture direct payments for conservation of biodiversity in conservation sites is indispensable.

4. Fiscal impact and cost recovery

65. From a financial analysis standpoint the project is comparable to education and public health projects. Indeed, the project finance neither institutions that will generate revenues (even if the organization

managing protected areas collects entry fees) or fiscal intermediaries. Consequently the financial analysis consists of evaluating the incremental recurring costs induced by the project and identifying durable financing sources to cover these costs.

66. ANGAP financial resources at present are provided on the one hand by direct payments for biodiversity conservation and on the other by entrance fees paid by eco-tourists visiting the protected areas, that is \$ 250,000 for 100,000 visitors. Entrance fees should normally increase with the number of visitors but maintaining direct payments at such exceptional level for a long time is uncertain though it is to be noted that the latter makes up the major part of ANGAP financial resources. Consequently, ANGAP financial resources are not sufficient to cover their current and investment expenses and above all they are not sustainable. For the time being, ANGAP is surviving thanks to international community support.

67. Three proposals are put forward to meet this structural financing deficit for the management of protected areas : (i) putting in place an *Endowment Fund* ; (ii) increasing entrance fees at protected areas, (iii) establishment of a green tax.

(i) A \$ 50 million *Endowment Fund* is being raised. Assuming a 6 % interest rate and 10% operating costs a year , this endowment fund would ensure sustainable financing up to \$ 2.5 million a year.

(ii) Doubling park entrance fees (\$ 10 per visitor because willingness to pay for visiting parks is higher than \$ 5 and closer to \$ 15) would increase ANGAP tourism revenues to \$ 0.5 million a year (half the park entrance fee of 10 \$ because the other half is given to neighboring communes)

(iii) Protected areas and their accommodation infrastructures are essential assets for the development of tourism in general in Madagascar. Therefore, a green tax could be established for tourism operators and tourists themselves. It could be withdrawn from tourism visa revenues. Madagascar hosts 200,000 foreign visitors a year and they pay \$50 each for a tourism visa. To achieve \$ 5 million financing a year, about 50 % of these tourism visa revenues should be transferred to ANGAP (this proportion would decrease with the expected increase of visitors).

68. In the medium term, conservation site financial needs are estimated at \$ 3 million per year. Contrarily to protected area case, the only source of sustainable financing is the direct payments for biodiversity conservation which are not yet secured in an endowment fund. That should be done rather quickly after the implementation of the project in order to sustainable finance the conservation site recurrent management costs.

69. In the medium term, management transfers financial needs are estimated at \$ 1 million per year. Financial benefits of management transfers are not sufficient to absorb recurrent cost. A tax on carbonization could cover recurrent costs.

70. Besides, the various solutions imagined to compensate and stabilize slash-and-burn farmers require financing through ODA for development, which is, by nature, not sustainable, even if these alternatives are economically viable on their own.

Annex 5: Financial Summary
MADAGASCAR: Third Environment Program Support Project

Years Ending
December 31

	IMPLEMENTATION PERIOD						
	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7
Total Financing Required							
Project Costs							
Investment Costs	32.2	21.1	25.7	19.5	19.4	0.0	0.0
Recurrent Costs	6.8	6.6	5.9	5.8	5.9	0.0	0.0
Total Project Costs	39.0	27.7	31.6	25.3	25.3	0.0	0.0
Total Financing	39.0	27.7	31.6	25.3	25.3	0.0	0.0
Financing							
IBRD/IDA	8.0	8.0	8.0	8.0	8.0	0.0	0.0
Government	6.2	6.0	6.0	6.0	5.0	0.0	0.0
Central	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Provincial	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Co-financiers	22.8	11.7	15.6	9.3	11.3	0.0	0.0
User Fees/Beneficiaries	0.0	0.0	0.0	0.0	0.0	0.0	0.0
GEF/Bank	2.0	2.0	2.0	2.0	1.0	0.0	0.0
Total Project Financing	39.0	27.7	31.6	25.3	25.3	0.0	0.0

Main assumptions:

Annex 6(A): Procurement Arrangements

MADAGASCAR: Third Environment Program Support Project

Procurement

General

1. The third Country Procurement Assessment Review (CPAR) has been conducted in November 2002 for Madagascar and a workshop took place on May 2003 for the validation of a joint CPAR/CFAA action plan to ensure rapid implementation of procurement reforms. The Procurement Code issued in 1998 will continue to govern until a new code will be set up and adopted. No special exceptions, permits or licenses need to be specified in the Grant documents for international competitive bidding since Madagascar procurement practices allow IDA procedures to take precedence over any contrary provisions of local regulations.

Use of Bank Guidelines

2. Goods and works financed by IDA will be procured in accordance with *IDA Guidelines for Procurement under IBRD Loans and IDA Credits dated January 1995 and revised in January 1996, August 1996, September 1997, and January 1999*. Bank Standard Bidding Documents (SBD), and Standard Evaluation Report (SER) will be used for both International Competitive Bidding (ICB) and National Competitive Bidding (NCB) procedures. NCB advertised locally will be carried out in accordance with the Madagascar's procurement laws and regulations, acceptable to IDA provided that they assure economy, efficiency, transparency, and broad consistency with key objectives of the Bank Guidelines. For NCB procedures, the Government will give assurance during negotiations that the following principles would be adhered to: (i) all bids would be submitted in one envelope to be opened publicly; (ii) point systems would not be used for bid evaluation for works; (iii) the award of contracts would be announced to all bidders; (iv) any bidder would be given adequate response time (at least four weeks) for preparation and submission of bids; (v) bid evaluation and bidder qualification criteria would be clearly specified in bidding/pre-qualification documents and will not be applied arbitrarily; (vi) eligible firms would not be precluded from participation; (vii) no preference margin is granted to domestic contractors and suppliers; (viii) contracts would be awarded to the lowest evaluated bidder in accordance with predetermined and transparent methods; (ix) bid evaluation reports would clearly state the reasons to reject any non-responsive bid; and (x) prior to issuing the first call for bids, draft standard bidding documents shall have been prepared and submitted to the Association, and found acceptable. To mitigate risks of delays for the proposed project, proper prerequisites for the use of Bank standard bidding documents, including evaluation reports for National Competitive Bidding procedures (NCB) have been agreed on with the Government during negotiations and the Procedures Manual would be submitted to and found acceptable by IDA.

3. Consultancy services financed by IDA will be procured in accordance with IDA Guidelines for the Selection of Consultants by World Bank Borrowers dated January 1997, revised in September 1997, January 1999 and May 2002. The Standard Request for Proposals (RFP) as developed by the Bank will be used for the selection of consulting firms. Simplified contracts, acceptable to the Bank, will be used for short term assignments, i.e. those not exceeding six months, or for those costing less than USD200,000. The Government has been briefed during appraisal as well as negotiations about the features of the most recent consultants Guidelines, in particular with respect to advertisement, proposals opening and the various steps of IDA review.

4. Procurement of Works. The project will finance works contracts for an estimated total amount of

US\$16.63 million equivalent, of which IDA will finance US\$12.27 million, and GEF will finance US\$ 2.30 million including *inter alia*: (i) civil works for the construction of facilities for fire management, and (ii) works related to the construction of offices , rehabilitation and improvement of existing facilities. Since there will not be large contracts exceeding US\$500,000 equivalent per contract, civil works procurement shall be carried out through National Competitive Bidding (NCB) procedures and contracts for small works, estimated to cost less than USD50,000, will be procured through quotations procedures. For scattered, remote located works and/or for which activities quantities of work involved cannot be defined in advance and where criteria set out in para. 3.8 of the Guidelines are met, ANGAP, DGEF, DGE and ONE may adopt force account procedures. Doing so would also reflect the available implementation capacity in these institutions that has been established following significant institutional strengthening efforts supported under EP-I and EP-II. Works to be implemented following the force account method would be specified in the annual operational plans to be agreed between these institutions and the PISU.

5. Procurement of Goods. The project will finance the purchase of goods for an estimated total amount of US\$7.88 million equivalent, of which IDA will finance US\$5.72 million and GEF will finance US\$1.00 million, including (i) furniture and IT equipment, (ii) vehicles, boats and motorcycles and (v) communication equipment. Most of the goods will be procured through (a) ICB procedures when costing more than USD250,000 per package, (b) NCB when costing between USD250,000 and 50,000 , (c) Shopping International and National procedures acceptable to the Bank, based on the evaluation of at least three price quotations and in accordance with provisions of paragraph 3.5 and 3.6 of the Guidelines, for items costing less than USD50,000, including office equipment, furniture, training materials, office supplies and documentation, and (d) also, to facilitate speedy procurement, vehicles and motorcycles may be procured from the United Nations Agencies such as IAPSO and UNICEF. To the extent practicable, contracts shall be grouped into bid packages estimated to cost the equivalent of US\$250,000 or more.

6. Consultancy Services and Training. The project will finance the contracting of consultancy services for studies, technical assistance, service contracts, training and study tours up to an estimated total amount of US\$10.08 million, of which US\$4.67 million will be financed by IDA and GEF will finance US\$3.85 million.

Firms. Firms will be recruited on the basis of the Quality and Costs Based selection (QCBS) method, using the Bank's Standard Request for Proposals, to provide services including (i) studies and researches; (ii) the technical assistance for organizational design, institutional development, training and capacity building; (iii) project management and supervision support, independent audits and review, and (iv) the project's auditors. Selection based on consultants qualifications (CQ) can be used for the recruitment of training institutions and for assignments that meet criteria set out in para. 3.7 of the Guidelines and for contracts which amount do not exceed US\$100,000 or equivalent. Single Source selection can be used to contract of firms for assignments that meet criteria set out in para. 3.8 to 3.11 of the Guidelines and for contracts which amount do not exceed US\$100,000 or equivalent. For contracts based on a short list of consultants estimated to cost USD100,000 or less per contract, the short list may consist entirely of national consultants if a minimum of three qualified ones are available.

Individuals. Individuals will be recruited in cases where a firm is not needed. Such individuals will be selected and recruited on the basis of qualification and experience in accordance with Section V of Bank Guidelines.

7. Incremental Recurrent Costs. The project would finance incremental recurrent costs up to an amount of US\$7.82 million equivalent. Incremental recurrent cost would include (i) expenditures for

the contracting of auxiliary personnel required for the implementation of the project; (ii) expenditures and supplies for the operation and maintenance of facilities required for the implementation of the project (such as expenditures for office supplies, rental fees, services, operation and maintenance of equipment financed out of the proceeds of the grant, as well as for domestic and international travel and per diems related to project implementation activities. All procurement within this category shall be done according to the Project Implementation Plan approved by IDA and adopted by MinEnEF, while any amendment to the Plan will also have to be acceptable to IDA.

Advertising

8. A general procurement notice (GPN) will be prepared and issued upon Board Approval in the United Nations Development Business listing all contracts above US\$ 500,000 for works and US\$ 250,000 for goods. It would be updated annually for any outstanding major procurement. Specific Procurement Notices for works and goods to be procured -will be advertised in the national press of wide distribution. Requests for expression of interest will be published in local newspapers and in the UNDB for consultancy contracts estimated to cost more than US\$ 200,000. Responses will be recorded in a register established at the PISU.

The related bidding documents, as applicable, will not be released – or the short list for consultant services will not be prepared – before eight weeks after the GPN has been published. Specific procurement notices will be advertised in the national press of wide circulation and internationally for large contracts. Sufficient time will be allowed to obtain bid documents and to prepare bids.

IDA Review

9. All contracts for construction of civil works and goods above US\$100,000 equivalent will be subject to IDA's prior review procedures. The use of IDA's standard bidding documents will considerably expedite the prior review process as IDA review will primarily focus on invitations to bid, bid data sheets, contract data, technical specifications, bill of quantities/schedule of requirement and other contract specific items. The review process would cover about 80 percent of the total value of the amount contracted for works. Procurement post review of contracts awarded below the threshold levels will apply and should cover 20% of contract in term of number, in the event samples of post reviews indicate major problems, additional reviews, financed by the Borrower, should cover the remaining portion of contracts. Draft standard bidding documents for NCB will be reviewed and agreed upon with IDA as part of the Project Implementation Plan.

10. For consultant services, prior review will include the review of budgets, short-lists, selections procedures, terms of reference, letters of invitation, proposals, evaluation reports and draft contracts. Prior IDA review will not apply to contracts for the recruitment of consulting firms and individuals estimated to cost less than US\$ 100,000 and US\$ 50,000 equivalent respectively. However, IDA prior review will apply to the Terms of Reference of such contracts, regardless of value, to single-source hiring, to assignments of a critical nature as determined by IDA, to contracting of PISU key staff or to amendments of contracts raising the contract value above the prior review threshold. For contracts estimated to cost less than US\$ 100,000 and more than US\$ 50,000 the borrower will notify IDA of the results of the technical evaluation prior to opening the financial proposals. Documents related to procurement below the prior review thresholds will be maintained by the borrower for ex-post review by auditors and by IDA supervision missions. The Project Unit will be required to maintain all relevant procurement documentation for subsequent review by IDA. The Project Unit will submit to IDA periodic procurement schedules detailing each procurement package in progress and completed as part of the normal project reporting exercise.

Procurement Implementation Arrangements

11. Procurement responsibility for the project rests with the respective services within PISU. The PISU will be responsible for the quality of these procurements and adherence to Bank procedures. The tasks of PISU will comprise: (a) maintaining a register of all interested bidders; (b) maintaining a detailed list of technical specifications of goods and services to be financed by the project; (c) preparation of the procurement plan and calendar; (d) preparation and/or finalization of pre-qualification /bidding documents and requests for proposals; (e) bid evaluation and preparation of evaluation reports; (f) contract approval process; (g) receipt of goods and services and dispatching; and (h) processing international and local price quotations.

Procurement Capacity Assessment

12. A procurement capacity assessment was conducted during project's appraisal, and the findings are highlighted in the table below. During pre-appraisal, assurance was given that PISU will (a) maintain a procurement specialist; (b) submit a draft procurement plan for the first year acceptable to IDA; and (c) give assurance that it will (i) apply the agreed procurement procedures and arrangements; (ii) use standard bidding documents acceptable to the Bank (annexed to the Manual of Procedures of the PIP); and (iii) annually review the procurement plan with IDA.

Action Plan to Strengthen PISU's Procurement Management Capacity

Tasks	Responsibility	Due Date
Finalization of project Manual of Procedures	PISU	Prior to project effectiveness
Establishment of filing system	PISU	Prior to project effectiveness

Procurement Plan

14. The Procurement Plan for works, goods and services to be procured through the PISU during the first implementation year of the project will be agreed between the Government and the Bank during negotiations. It will be part of the Project Implementation Plan approved by Government and acceptable to the Association. For each subsequent year, the procurement plan related to the agreed Annual Work Program will be updated and submitted to the Bank for review and approval. These plans show and will show the step-by-step procedures for procurement, contract packages for goods, works and consultants services and training, estimated cost and the procurement/selection method, the activities which follow procurement, such as manufacture, shipment, delivery and installation of goods; mobilization, construction and completion of works. It is mandatory that all procurement be carried out in accordance with the formally agreed procurement plan (original and formally up-dated). Therefore, for the purpose of this project, agreed Procurement Plans will determine procurement methods and it is not necessary to set up aggregate total amounts.

Procurement methods (Table A)

Table AA: Project Costs by Procurement Arrangements (IDA)
(US\$ million equivalent)

Expenditure Category	ICB	NCB	Other	N.B.F.	Total
1. Works		1.17 (1.00)	12.78 (11.27)		13.95 (12.27)
2. Goods	3.35 (2.70)	1.43 (1.14)	2.10 (1.88)		6.88 (5.72)
3. Services			6.08 (4.67)		6.08 (4.67)

4. Training			2.27 (2.27)		2.27 (2.27)
5. Recurrent Costs			6.22 (5.59)		6.22 (5.59)
6. Grant to Trust Fund for Biodiversity Protection			7.50 (7.50)		7.50 (7.50)
7. P.P.F.			1.98 (1.98)		1.98 (1.98)
TOTAL	3.35 (2.70)	2.60 (2.14)	39.93 (35.16)		44.88 (40.00)

Table AB: Project Costs by Procurement Arrangements (GEF)
(US\$ million equivalent)

Expenditure Category	ICB	NCB	Other	N.B.F.	Total
1. Works		2.05 (1.70)	0.60 (0.60)		2.65 (2.30)
2. Goods		0.90 (0.72)	0.10 (0.08)		1.00 (0.8)
3. Services			4.00 (3.85)		4.00 (3.85)
4. Training			0.50 (0.50)		0.50 (0.50)
5. Recurrent Costs			1.60 (1.55)		1.60 (1.55)
TOTAL		2.95 (2.42)	6.80 (6.58)		9.75 (9.00)

Table A11: Consultant Selection Arrangements (IDA)
(US\$ million equivalent)

Consultant Services	Selection Method							
	QCBS	QBS	SFB	LCS	CQ	Other	N.B.F.	Total
A. Firms	1.98 (1.67)				1.76 (1.76)	4.21 (3.17)		7.95 (6.60)
B. Individuals						0.40 (0.34)		0.40 (0.35)
TOTAL	1.98 (1.67)				1.76 (1.76)	4.61 (3.51)		8.35 (6.94)

Table A12: Consultant Selection Arrangements (GEF)
(US\$ million equivalent)

--	--

Consultant Services	Selection Method							
----------------------------	-------------------------	--	--	--	--	--	--	--

	QCBS	QBS	SFB	LCS	CQ	Other	N.B.F.	Total
A. Firms	1.50 (1.45)				0.50 (0.50)	2.00 (1.90)		4.00 (3.85)
B. Individuals						0.50 (0.50)		0.50 (0.50)
TOTAL	1.50 (1.45)				0.50 (0.50)	2.50 (2.40)		4.50 (4.35)

Prior review thresholds (Table B)

Contracts of goods costing more than US\$100,000 and works costing more than US\$100,000 per contract per contract will be subject to prior review by IDA. All other contracts will be subjected to post review.

All procurement documents for consulting contracts with firms for amounts exceeding US\$100,000 per contract selected on the basis of a short list and any contract involving individual consultants exceeding US\$50,000 per contract will be subject to prior review by IDA. In addition, for consultant contracts with firms exceeding US\$100,000 per contract, the technical evaluation report will also be required by IDA for prior review. All other contracts will be subjected to post-review.

Table B: Thresholds for Procurement Methods and Prior Review¹

Expenditure Category	Contract Value Threshold (US\$ thousands)	Procurement Method	Contracts Subject to Prior Review (US\$ millions)
1. Works	Higher or equal to 500 50-500 Less than 50	ICB NCB Price Quotations	All (XXX) All above US\$100,000 None
2. Goods	Higher or equal to 250 50-250 Less than 50	ICB NCB National shopping	All (XXX) All above US\$100,000 None
3. Services Consultants, training, audits, other services			
a) Firms	Higher or equal to 100 Less than 100	QCBS QCBS, CO, Other	All (XXX) None
b) Individuals	Higher or equal to 50 Less than 50	IC IC	All (XXX) None

Total value of contracts subject to prior review:

Overall Procurement Risk Assessment: Average

Frequency of procurement supervision missions proposed: One every months
(includes special procurement supervision for post-review/audits)

¹⁾ Thresholds generally differ by country and project. Consult "Assessment of Agency's Capacity to Implement Procurement" and contact the Regional Procurement Adviser for guidance.

Annex 6(B): Financial Management and Disbursement Arrangements MADAGASCAR: Third Environment Program Support Project

Financial Management

1. Summary of the Financial Management Assessment

Country issues

The CFAA diagnostic completed in June 2003 identified serious weaknesses in public sector budgeting, accounting system, reporting and auditing. To mitigate this high fiduciary risk, it was agreed that the EP3 will be implemented with the support of a Project Implementation Support Unit, -- the PISU -- to be set up within the Ministry of Environment, Water and Forests. Operational responsibility for project activities rest with the following executing agencies: DGE, DGEF, ONE and ANGAP. The DGEF, ONE and ANGAP have extensive experience from previous IDA projects in implementing activities of this nature. An agreed action plan with the Borrower has been developed during the pre-appraisal mission to ensure that the ingredients for sound financial management are in place before Board presentation.

The CPFA (Country Profile of Financial Accountability) carried out in September 1998 confirmed also the weak capacity of the accounting profession in Madagascar. A number of accounting firms were operating below the international standards due to the lack of regulatory framework, proper auditing standards, clearly defined guidelines and procedures for systematic peer reviews, continuing education requirements, quality control mechanisms to harmonize methodology. To improve the capacity and the competitiveness of the local auditing firms, the following measures have been taken: i) obligation for local auditors to enter into partnership with international accounting firms while auditing Bank/IDA financed projects in order to improve the quality of audit reports and ensure practical training and real transfer of methodology in the areas of organization and execution of audit assignments; ii) the use of QCBS method rather than Least Cost for the recruitment of auditors. To improve the capacity and the competitiveness of the local auditing firms, the following measures have been taken: i) obligation for local auditors to enter into partnership with international accounting firms while auditing Bank/IDA financed projects in order to improve the quality of audit reports and ensure practical training and real transfer of methodology in the areas of organization and execution of audit assignments; ii) effective participation of the international accounting firm while carrying out audit works in the field.

FM Risk Analysis

Risks	Risk rating	Risk Mitigation Measures
<i>Implementing Support Entity (PISU):</i> The PISU is a new entity and has no experience with implementing an IDA-financed project.	Moderate	Technical assistance has been envisaged through the PPF to ensure that the FM capacity is in place before Board presentation. The PPF will finance: i) the preparation and implementation of the project accounting manual of procedures to provide clear guidance to staff; ii) the harmonization of the accounting systems to be used by the CCP and the other executing agencies in order to facilitate the consolidation of the EP3 financial statements and the preparation of FMRs ; iii) the review of the accounting software in place to satisfy the project needs and IDA requirements; iii) the training session for the project staff to encourage consistent application of

		control procedures and ensure proper application of Bank procedures as well as efficient use of the new computerized system.
Funds flow: Lack of experience of the PISU and the Foundation (Trust Funds) in the management of disbursements from the World Bank.	Moderate	Before grant effectiveness, a training session will be organized to familiarize the PISU and Foundation staff with the Bank procedures ie: (financial management, disbursements and procurement procedures)
Staffing: The PISU finance and accounting function is not staffed yet. Selection may not be based on technical criteria.	Moderate	Recruitment prior to Board presentation of an adequate number of qualified accounting staff, in conformity with the Bank procedures. Use of external recruitment agency for selection and hiring process.
Accounting Policies and Procedures	Low	N/A
Internal Audit Activities entrusted to various executing agencies may not be executed in conformity with the terms of contract.	Moderate	Recruitment of internal auditors to ensure that project activities have been executed in compliance with the terms of contract.
External Audit The CFAA for Madagascar concluded that country public financial management poses a major fiduciary risk.. The CPFA (Country Profile of Financial Accountability) carried out in September 1998 confirmed also the weak capacity of the accounting profession in Madagascar.	Substantial	Local auditors who intend to audit the financial statements of Bank financed projects were invited to enter into partnership with international auditing firm to strengthen their capacity. -Effective participation of the international auditing firm in the fieldwork. - Reinforcement of the accounting profession after the completion of the ROSC mission. - Recruitment of technical auditors to ensure the effectiveness and quality of works/activities carried out by the executing agencies.
Monitoring and Reporting:	Low	N/A
Information Systems	Low	N/A

Strengths and weaknesses

The ONE and ANGAP have strong experience in managing World Bank funds for being responsible for the implementation of the EP2 which closed in July 2003: their accounting system follows generally accounting standards acceptable to the Bank.

The main deficiencies noted in the PISU and other executing agencies systems are summarized in the following table which also provides relevant measures to address them:

Significant Weaknesses	Resolution
PISU: The PISU responsible for the coordination and the financial management of the EP3 is a new created entity. The PISU responsible for the coordination and the	Recruitment of qualified and skilled accounting staff in conformity with the Bank procedures; Recruitment of the project key staff (a manager, a financial expert,

<p>financial management of the EP3 is not created. The ingredients for sound project financial management including accounting, budgeting, reporting, auditing, staffing and internal controls are not in place yet;</p> <p>Incapacity of the computerized system actually in place (used by the MEnvEF/DGEF within the context of EP2) to produce financial reports required for managing and monitoring project activities.</p>	<p>two accountants, a procurement specialist and a responsible for monitoring and evaluation) in conformity with the Bank procedures;</p> <p>Preparation and implementation by a consultant acceptable to IDA of an accounting and financial manual of procedures in order to facilitate adequate record keeping, satisfy reporting requirements and ensure consistent application of control procedures;</p> <p>Recruitment of an accounting firm acceptable to IDA to audit the EP3 accounts;</p> <p>Invitation of the manufacturer to review the accounting software used by the Ministry of Environment during EP2 in order to facilitate the production of all financial reports including FMRs;</p> <p>Users training provided by the manufacturer to ensure efficient use of the computerized system.</p>
---	--

Significant Weaknesses	Resolution
<p>ANGAP:</p> <p>Absence of appropriate segregation of duties.</p> <p>Vacancy of the Director of finance position.</p> <p>Accounting manual of procedures not reflecting the outline of the accounting system, the format and content of the financial reports to be produced, the integrality of control procedures required for ensuring timely preparation of reliable information and safeguarding assets.</p> <p>Incapacity of the computerized system actually in place to produce financial reports required for managing and monitoring ANGAP's activities.</p> <p>Inadequacy of the number of internal auditors in place commensurate with the ANGAP's structures and the volume of the work program to be handled</p>	<p>Clear definition of the entity's organizational structure and responsibility assignments with respect to the following functions: budgeting, accounting, administration of cash/bank accounts and procurement;</p> <p>Recruitment of a Director of finance</p> <p>Update and implementation of the accounting manual of procedures to facilitate adequate record keeping and the maintenance of proper control over assets;</p> <p>Invitation of the manufacturer to review the accounting software in place and to implement a new one capable of producing all financial reports required for managing and monitoring ANGAP's activities;</p> <p>Recruitment of internal auditors in sufficient number to ensure a better control of the decentralized structures.</p>

by the internal audit department.	
<p>ONE:</p> <p>Accounting manual of procedures not being updated to reflect the entity organizational structure, the new Chart of accounts, the budgetary process and the format and content of FMRs</p> <p>Incapacity of the computerized system actually in place to produce financial reports required for managing and monitoring ONE's activities.</p>	<p>Update of the accounting manual of procedures to provide clear guidance to staff.</p> <p>Invitation of the consultant having implemented the current accounting software to bring necessary adjustments and to provide users training in order to allow timely production of all financial reports for managing and monitoring ONE's activities.</p>

Implementing Entities

Under the supervision of the MinEnvEF, the PISU has been established within this Ministry to support project implementation. The implementation of project activities will be entrusted to the ONE, ANGAP, DGEF and DGE which will receive timely payments from the PISU on the basis of physical progress (output-based) following results agreements between the MinEnvEF and the executing agencies. The PISU will be headed by a manager nominated by the MEnvEF and will be responsible for program management including: i) coordination of the implementation of the program; ii) consolidation of the work programs and budgets; iii) maintenance of records and separate accounts for all transactions related to the PISU, the DGEF and DGE; iv) preparation, consolidation and production of project annual financial statements and quarterly FMRs; v) contracting and supervision; vi) management of disbursements for all components, and replenishment applications for the special accounts; and vii) monitoring and evaluation of the various activities supported under the project. Apart from the Coordinator, the PISU staff will include specialists in financial management, procurement and monitoring and evaluation.

ONE and ANGAP will keep an accounting system satisfactory to IDA and prepare their own financial statements as well as basic information on project management/monitoring as required by the PISU.

Staffing

The finance and accounting function in the PISU is not entirely staffed yet. The Director of finance is already in place but the three accountants respectively in charge of the maintenance of PISU accounts, and the records of DGE and DGEF financial transactions need to be recruited. The recruitment of the accounting staff will be conducted in conformity with the Bank procedures and should be completed *prior* to Board presentation.

Accounting policies and procedures

The PISU will be responsible for the project financial management aspect as well as the maintenance of DGE and DGEF accounts. However to facilitate the flow of funds and ensure timely payments of private firms, consultants and other agencies they have contracted, DGEF and DGE will be staffed with treasurers responsible for: i) assuring individual payment of works completed and services rendered; ii) maintaining a simple cash book showing clearly cash received, payments made and cash balances. ONE and ANGAP will maintain separate accounts for all transactions to each component for which they have implementation responsibility and will produce their individual annual financial statements. The PISU, ONE and ANGAP

will use an accounting system in compliance with generally accounting standards and IDA requirements. Since the PISU is a new created entity with no experience in the design and implementation of such system it was agreed that a consultant will be recruited to provide support regarding this aspect. The consultant will be responsible for the preparation and implementation of the project procedures manual which will describe inter alia the outline of the project accounting system, the accounting policies to be followed, the formats of books and records, the Chart of accounts, the financial reporting, and relevant information to facilitate record keeping and maintenance of proper control over assets. The consultant will also review ONE and ANGAP accounting systems in order to assess their adequacy and ensure their harmonization with PISU system.

The project accounting system will use standard book accounts (journals, ledgers and trial balances) to enter and summarize transactions and will operate on a double entry accrual principles. The financial statements will be prepared under the historical cost convention. Project accounts will be maintained in Malagasy currency (FMG). As a result, the opening and closing balances of the Special Accounts (SA) held in \$ US should be translated at the rate ruling respectively on the opening and closing dates. Expenditures made out of the SA should be stated at the rate ruling on the transaction dates. The actual exchange rates used should be disclosed.

To ensure timely production of financial information required for managing and monitoring project activities, the PISU will be equipped with an accounting software similar to this one already used by the ONE and ANGAP within the context of EP2. However necessary adjustments must be envisaged to meet the Bank reporting requirements.

2. Audit Arrangements

Internal Audit

To ensure that project activities have been implemented correctly by executing agencies in conformity with the terms of contracts/convention, a qualified internal auditor will be appointed to carry out internal audit activities for the project. All issues identified during internal audit should be addressed quickly to improve the performance of the executing agencies. Internal audit aims also at ensuring efficient use of funds by executing agencies and adequate protection of assets acquired under the grant.

External Audit

The project consolidated financial statements as well as ANGAP and ONE accounts will be audited annually by independent and qualified auditors acceptable to IDA, in accordance with International Standards of Auditing and the new Guidelines describing Audit Policy and Practices for World Bank-financed Activities. The audited financial statements should reflect the activities supported by the grant. The auditors may provide a single

opinion on the annual financial statements instead of expressing separate audit opinions on special accounts and statements of expenditures (SOEs), provided such statements reflect the balances and transactions associated with any special accounts and SOEs. This opinion will state whether the financial statements fairly present the financial transactions and balances associated with the implementation of the project, and if the expenditures financed by the grant were appropriate. The auditors will be also required to carry out a comprehensive review of the internal control procedures and provide a management report outlining any recommendations for their improvement. The audit

report will be submitted to IDA not later than six months after the end of each fiscal year. The auditors should be recruited prior to grant effectiveness. Since the project is expected to be effective in 2004 a

separate audit is not required for the PPF: amounts disbursed for this purpose will be accounted for in the first reporting period of the new project. The terms of reference of the audit will be reviewed by the financial management specialist of the Bank/IDA to ensure the adequacy of the audit scope, drawing special attention to particular risk areas identified during project preparation or implementation, that may not be emphasized under a normal audit.

A technical auditor will be also recruited to verify the quality and effectiveness of works/activities carried out by the executing agencies/contractors in conformity with the terms of contract between the PSU and these entities.

Reporting and Monitoring

To monitor project implementation, the PISU will produce the following reports :

- ***Annual financial statements*** comprising:

- a) Summary of sources and uses of funds (by components/subcomponents/project activities/grant category and showing all sources of funds: IDA, government and other donors);
- b) Project Balance Sheet;
- c) Special Accounts statements;
- d) Statement of Expenditures;

- ***Quarterly FMRs***

The FMRs comprises a financial reports, physical progress reports and procurement reports to facilitate project monitoring. The FMRs should be submitted to IDA within 45 days of the end of the reporting period (quarter). Models of these reports will be determined as part of project appraisal and be agreed at negotiations. Their content and format will be presented in the project accounting manual of procedures.

ONE and ANGAP will produce their own annual financial statements and all financial reports required by the PISU for the preparation of the project consolidated financial statements and quarterly FMRs. Among financial reports to be prepared on a quarterly basis are the following: a statement showing for the period and cumulatively cash receipts by sources and expenditures by main classifications (components/activities/category), balance sheet, and physical progress report. Detailed reporting as well as accountability arrangements will be documented in the procedures accounting manuals of these entities.

Information Systems

The PISU, ONE and ANGAP will use a computerized and integrated financial management system capable of recording and producing in a timely manner all financial reports required for managing and monitoring project activities. This computerized system would in particular facilitate: annual programming of activities and project resources, record-keeping (general accounting and cost accounting), financial and budgetary management, fixed assets management, procurement management, follow-up of project implementation progress, monitoring of key indicators to assess the results and impact of the project, preparation of quarterly Financial Monitoring Reports as required by the Bank/IDA. To achieve these objectives the accounting software actually in place and used by the executing agencies within the context of EP2 will be

reviewed by the manufacturer to meet the PISU, ONE and ANGAP requirements. The TORs for this consultant will be reviewed by the Bank Financial Management Specialist. The new computerized system will be fully functional before project implementation begins.

Impact of procurement arrangements

Procurement arrangements do not present substantial risk.

3. Disbursement Arrangements

Funds Flow

The flow of funds from IDA, GEF, the government and other donors is presented as follows :

The special account would be replenished on the basis of documentary evidence provided to IDA by the PISU, justifying the payments made from the account for works, goods and services that are eligible for financing under the grant. All supporting documents will be retained by the PISU and made available for review by Bank/donors supervision missions and external auditors. The project implementation and accounting manuals will describe in details all procedural aspects regarding financial management (payments, replenishment, reporting, internal control).

Disbursements from IDA grant

For the implementation of EP3 the following bank accounts to be managed by the PISU will be opened in a local commercial bank under conditions satisfactory to IDA:

- Special Account A: Denominated in US \$, disbursements from the IDA grant will be deposited on this account to finance activities under components 1, 2 and 3 in accordance with the disbursement percentages indicated in the DCA;
- Special Account B: Denominated in US \$, disbursements from the GEF grant will be deposited on this account to finance activities under components 2 in conformity with the disbursement percentages indicated in the DCA;
- Project account: Denominated in local currency, counterpart funds from the government will be deposited on this account to finance project activities in accordance with the disbursement percentages indicated in the DCA. The amount of the initial advance will be agreed upon negotiations and should be deposited prior to grant effectiveness.

Funds deposited in these accounts will be used to ensure timely payments of all executing agencies (ONE, ANGAP, DGEF, DGE), contractors and suppliers of goods and services. The initial advance to executing agencies would be made in conformity with the terms of contract/convention between the PISU and these entities. Subsequent payments will be based on physical progress after appropriate authorization and approval by the PISU. The special account would be replenished on the basis of documentary evidence provided to IDA by the PISU, justifying the payments made from the account for works, goods and services that are eligible for financing under the grant. All supporting documents will be retained by the PISU and made available for review by periodic Bank supervision missions and external auditors. The project implementation and accounting manuals will describe in details all procedural aspects regarding financial management (payments, replenishment, reporting, internal control).

Disbursements from the Trust Fund for Biodiversity Conservation

The Trust Fund will be managed by the Madagascar Protected Areas and Biodiversity Foundation. It will be used to finance exclusively EP3 activities to be executed by ANGAP. This financing will come from: i) interests generated by the start-up capital donated by various donors ; ii) IDA and GEF grants; and iii) government contributions from debts removal. Once the Foundation is set up, its capacity and system would be reviewed by a Bank/IDA Financial Management Specialist. Provided the outcome is satisfactory and a subsidiary grant agreement has been adopted between the Recipient and the Foundation, acceptable to IDA as well as conditions agreed at the time of appraisal, IDA resources would be transferred to the Trust Fund for the intended purpose as outlined and specified in corresponding implementation manual. The project implementation manual will describe procedures to be followed regarding disbursements from the Trust fund.

Disbursements from the FAGEC (Fonds d'Appui à la Gestion Environnementale des Communes)

Various funding partners, including IDA, have agreed to pool their resources to support activities to be carried out at the communes level for environmental management. Funds deposited in this account will be managed by a new independent entity whose capacity will be assessed before expenditures related to this specific program begin.

Method of Disbursement

The PISU would follow the transaction-based disbursements procedures (traditional mode) outlined in the Bank's Disbursement Handbook. The use of report-based disbursements could be possible thereafter if requested by the borrower and if the following criteria are met: i) the FM rating has been maintained at satisfactory level; ii) the timely submission of quarterly FMRs consistent with the form and content agreed during negotiations, and reliable for purposes of disbursement; iii) the submission of project audit report by due date. Detailed disbursement procedures will be described in the project accounting manual of procedures.

Minimum of Application Size

The minimum application size for direct payments, to be withdrawn directly from the Grant Account, and special commitments is a minimum of 20% of the amount advanced to each special account.

Retroactive Financing

Retroactive financing of up to US\$4 million from the IDA Grant is recommended for expenditures incurred after February 28, 2004.

Allocation of grant proceeds (Table C)

Table C.1.: Allocation of IDA Proceeds

Expenditure Category	Amount in US\$ million	Financing Percentage
1. Works	12.27	100% of foreign and 80% of local expenditures
2. Goods	5.27	100% of foreign and 80% of local expenditures
3. Services and Audits	4.67	85% of foreign and 75% of local expenditures
4. Training	2.27	100% of expenditures
5. Recurrent Costs	5.59	85% of expenditures
6. Grant to Biodiversity Protection Trust Fund	7.50	100% of amount disbursed
7. PPF Refinancing	1.98	
TOTAL	40.00	

Table C.2.: Allocation of GEF Proceeds

Expenditure Category	Amount in US\$ million	Financing Percentage
1. Works	2.30	100% of foreign and 80% of

		local expenditures
2. Goods	0.80	100% of foreign and 80% of local expenditures
3. Services and Audits	3.85	85% of foreign and 75% of local expenditures
4. Training	0.50	100% of expenditures
5. Recurrent Costs	1.55	85% of expenditures
TOTAL	9.00	

Use of statements of expenditures (SOEs):

Disbursements would be made against Statement of Expenses (SOEs) for contracts and goods not requiring the Bank's prior review. Therefore disbursements for all contracts for:

- goods and civil works of less than US\$100,000;
- consulting services, training by firms and individuals of less than US\$100,000 and US\$50,000 respectively;

- and all incremental operating expenses;

would be made on the basis of SOEs and certified by the PISU. SOE statements would be audited annually by independent auditors acceptable to the Bank. All SOEs supporting documentation would be kept therefore by the PISU and made available for review by *Bank* supervision missions and external auditors.

Special account:

Payments from the IDA grant and GEF grant would be administered by the PISU from two separate Special Accounts. The two Special Accounts would be maintained in US dollars in a commercial bank selected by the Borrower and acceptable to the World Bank. The authorized allocation, sufficient for about four months of eligible expenditures, would be US\$2,100,000 and US\$600,000 for the IDA and GEF funds respectively; however, the initial allocation will be limited to US\$1,050,000 and US\$300,000 for the IDA and GEF funds respectively until the aggregate amount of withdrawals from the Grant Account plus the total amount of all outstanding special commitments entered into the Bank shall be equal to or exceed SDR2,120,000. The corresponding figure for GEF funds would be US\$750,000. The Special Accounts would be managed by the PISU which would be responsible for preparing disbursement requests. These requests would be submitted at least on a monthly basis. Replenishment of the Special Accounts would follow Bank procedures. Disbursements would be made under the authorized signature from a designated representative of the Borrower. The Special Accounts would be audited annually by independent auditors acceptable to the Bank.

Action Plan

The present action plan agreed with the borrower describes main actions to be taken to strengthen the PISU, ONE and ANGAP financial management systems and to build their capacity to produce quarterly Financial Monitoring Reports:

	<u>Actions</u>	<u>Date due by</u>	<u>Responsible</u>
1	Agreement on Terms of reference for: i) PISU and ANGAP key staff; ii) consultant in charge of the preparation and implementation of the accounting manual of procedures; iii) external auditors.	Completed	MinEnvEF/ ANGAP/IDA
2	Appointment of PISU and ANGAP accounting staff: Financial officer, accountants).	02/03/2004	MinEnvEF/ANGA
3	Appointment of Consultant in charge of: i) the preparation and implementation of the project accounting manual of procedures; ii) the update of the ONE and ANGAP accounting manual of procedures.	Completed	MinEnvEF
4	Consultant starts the preparation /update of the accounting manual of procedures: <ul style="list-style-type: none"> • First draft of the manual for comments • Final draft incorporating comments; • Implementation of the manual of procedures and users training. 	02/10/2004 02/18/2004 03/01/2004	Consultant
5	Agreement on Terms of reference for consultant responsible for: i) the review of the accounting software implemented at ONE, ANGAP and MEWF; and ii) the implementation of the new computerized system;	Completed	MinEnvEF/PISU, ONE, ANGAP, IDA
6	Invitation of the manufacturer to review the computerized system implemented at ONE, ANGAP and MEWF in order to satisfy project and executing agencies requirements: <ul style="list-style-type: none"> • Submission of the financial proposal to the CCP; • Negotiations and award of the contract to the consultant • 	02/03/2004 02/04/2004	Consultant MinEnvEF/PISU, ONE, ANGAP
7	Consultant starts the design and implementation of the new computerized system: <ul style="list-style-type: none"> • Installation of the computerized system • System testing to ensure compliance with project's expectations and IDA specifications: • Corrective actions and retesting; • Complete users training and start operating the system; • Obtain user acceptance and approval 	02/06/2004 02/20/2004 02/28/2004 03/15/2004 03/18/2004	Consultant
8	Recruitment process of external auditors: <ul style="list-style-type: none"> • Finalization and issuance of the Request for Proposal (RFP); • Reception of proposals, evaluation, selection; • Appointment of external auditors 	01/16/2004 02/17/2004 02/20/2004	MinEnvEF/PISU

Supervision Plan

- Periodic review of implementation progress.

Annex 7: Project Processing Schedule
MADAGASCAR: Third Environment Program Support Project

Project Schedule	Planned	Actual
Time taken to prepare the project (months)	15	
First Bank mission (identification)	09/01/2002	09/15/2002
Appraisal mission departure	10/10/2003	01/20/2004
Negotiations	12/10/2003	
Planned Date of Effectiveness	03/01/2004	04/01/2004

Prepared by:

Project preparation was coordinated by the Ministry of the Environment, Water and Forests with assistance from specialized environmental institutions, including: ONE, ANGAP, ANAE, and SAGE. Preparation of the project was embedded in the design process of EP-III under the guidance of a joint GoM-donor taskforce.

Preparation assistance:

A Japan PHDR Grant (TF051121) for US\$698,700 was received and used for project preparation by the Ministry of the Environment, Water and Forests. In line with the Letter Agreement, proceeds of the Grant were used to contract consulting services for: (i) development of sustainable financing mechanisms for the environment; (ii) carrying-out of an institutional assessment; (iii) preparation of a the M&E framework for EP-III; and (iv) carryin-out of a gender assessment. The activities carried out under the Grant have contributed substantially to the design of the project. Sustainable financing mechanisms related activities have been instrumental in defining the legal and operational aspects of the Tust Fund for Biodiversity Protection. The institutional assessment has been the basis for the adoption of an institutional vision for the sector by the Minister of the Environment, Water and Forests. M&E related work has facilitated the specification of the agreed EP-III Results Framework and corresponding M&E system. The Gender Assessment has played an important role in defining social aspects related to the project.

Bank staff who worked on the project included:

Name	Speciality
Martien van Nieuwkoop	Task Team Leader
Christophe Crepin	Regional Program Manager and Co-TTL (Protected Areas and Environmental Sustainable Financing)
Bienvenu Rajaonson	Environment/Forest
Ziva Razafintsalama	Social Analysis
Jean-Christophe Carret	Environmental Economics
Boris Utria	Domestic Energy
Sylvain Rambelon	Procurement
Slaheddine Ben-Halima	Procurement
Gervais Rakotoarimanana	Financial Management
Raj Soopramanien	Counsel
Charles di Leva	Counsel
Michael Fowler	Disbursements
Kristine Ivarsdotter	Social Safeguards

Michel Simeon	Environmental Safeguards
Serigne Omar Fye	Safeguards Compliance
Amadou Konare	Environmental Safeguards
Gayatri Kanungo	Processing
Rondro Rajaobelison	Processing
Claudia Sobrevilla	Peer Review
Stefano Pagiola	Peer Review
Andrew Tilling	External Peer Review
Robert van der Plas	Domestic Energy

Annex 8: Documents in the Project File*
MADAGASCAR: Third Environment Program Support Project

A. Project Implementation Plan

- A1: EP-III Results Framework
- A2: Project Implementation Manual (draft)
- A3: Procurement Plan (draft)
- A4: CostTab Tables
- A5: Resettlement Process Framework
- A6: Mikea Indigenous Peoples Development Strategy
- A7: Environmental Management Plan

B. Bank Staff Assessments

- B1: Pre-Appraisal Aide-Memoire, July 2003.
- B2: Strategy and Policy Context for the Management of the Protected Areas System of Madagascar
- B3: Profile of the Protected Areas System in Madagascar
- B4: Institutional Analysis of ANGAP
- B5: Domestic Energy Assessment
- B6: Economic Analysis
- B7: ANGAP Sustainable Financing and Gaps Analysis
- B8: Impact Assessment and Evaluation of EP-II
- B9: Stakeholder Participation Plan
- B10: Monitoring and Evaluation of the Protected Areas System and Support Zones
- B11: Appraisal Aide Memoire, January 2004 and related documents (Financing plan; PA Prioritization table-Estimation des Ressources par Bailleurs de fonds; EPIII Result based outputs and target sites-PRINCIPAUX RESULTATS ATTENDUS)

C. Other

- C1: Environmental Analysis, Vol. 1, Vol. 2
- C2: Institutional Analysis Vol. 1: Vol. 2, Vol. 3, Vol. 4, Vol. 5 and Vol. 6
- C3: Gender Assessment
- C4: M&E Plan and System
- C5: MECIE Performance Evaluation
- C6: OSF Reports (Forest Sector Governance)
- C7: EP3 Intervention Areas

*Including electronic files

Annex 9: Statement of Loans and Credits
MADAGASCAR: Third Environment Program Support Project

Project ID	FY	Purpose	Original Amount in US\$ Millions				Cancel.	Undisb.	Difference between expected and actual disbursements ^a		
			IBRD	IDA	SF	GEF			Orig	Frm	Rev'd
Total:											

MADAGASCAR
STATEMENT OF IFC's
Held and Disbursed Portfolio

In Millions US Dollars

		Committed				Disbursed			
		IFC				IFC			
FY Approval	Company	Loan	Equity	Quasi	Partic	Loan	Equity	Quasi	Partic

Total Portfolio:

		Approvals Pending Commitment			
FY Approval	Company	Loan	Equity	Quasi	Partic

Total Pending Commitment:

Annex 10: Country at a Glance
MADAGASCAR: Third Environment Program Support Project

LETTER OF ENVIRONMENTAL POLICY

Final Version

Ministry of Environment, Water and Forests

January 2004

CONTENTS

Introduction	4
1 Environmental Threats	5
2 Lessons learnt	6
2.1 Results and lessons learnt	6
2.2 Baseline scenario without environment program	8
3 Commitments by the GoM	9
3.1 Main axes of environment management in Madagascar	10
3.2 Recommendations for environment management	11
4 Vision for 2015	12
5 Overview of the Environment Program 3 (EP-III)	13
5.1 Goal	13
5.2 Objectives	13
5.3 Results of EP-III	14
5.4 Definition of intervention zones	17
5.5 Benefits	17
6 Strategic Choices for implementation of EP III	18
6.1 Meeting National priorities	18
6.2 Ensuring sustainability of environment management	19

6.3	Strengthening synergy between various components of the EP	19
6.4	Development of partnership with other sectoral programs	19
6.5	Strengthening collaboration with decentralized territory communities	20
6.6	Promoting participatory management and natural resource management transfer	20
6.7	Intervention based on program-contracts and result-based contracts	20
6.8	Importance of involvement of private sector and civil society	20
6.9	Institutional framework	20
7	Monitoring & Evaluation	20
7.1	Effective Planning	21
7.2	Strong coordination	21
7.3	Efficient, transparent and clear procedures	22
8	Risks	22
8.1	Uncertainty of financing	22
8.2	Long-term sustainability of national institutions	22
8.3	Interdependence of policies, strategies, programs, and projects	22

Conclusion 23

PREFACE

The present document provides the 'Letter of Policy' of the GoM for the management of Madagascar's environment. It does not substitute the sectoral policy, but complements it. It is founded on the Malagasy Environment Charter and is in line with the national development policy. The aims of the letter of policy are:

- Reaffirm the priority granted by the GOM to environment and its commitment to ensure its protection;
- Provide a clear vision of objectives pursued, priorities defined by government, as well as intervention strategies / modalities to come up with efficiency expected in protection and management of the environment.

The document elaborates upon the following eight issues (8 chapters) :

- Environmental Threats
- Lessons learnt from ten years of implementation of the Environment Action Plan (EAP)
- Commitments by the Government to the environment sector
- Vision for 2015
- Overview of the Environment Program Phase III (EP III)
- Strategic Choices for implementation of EP III
- Environment Management
- Risks

In summary, the letter of policy attempts to respond to both the political and operational concerns of the overall program. In that respect, it will serve as a referential document in the management of environment in Madagascar.

It also provides an opportunity to showcase EP 3 to the technical and financial partners involved in the environment sector in Madagascar. It outlines how the Environment Action Plan in its third phase expects to come up with strategies for sustainable management of natural resources; how best to integrate the economic and social redressal program engaged by the government and; to what extent EP 3 would significantly contribute to the success of the overall environment program.

It presents a global vision by the year 2015, for the Malagasy Charter of Environment, and tries to put into perspective the baseline status of environment in the absence of environmental actions. The letter of policy also documents the new measures in the management of the environment, in the context of the status of environment after ten years of environmental actions through the first two phases of EAP.

This letter of policy is a dynamic document and will be updated periodically. It is coupled with other documents, namely: the "Manual of implementation of EP 3" and the "Financing Plan " for EP-3.

Introduction

The implementation of Madagascar's Environment Action Plan has, since 1990, evolved through strong support of large international financial institutions – the World Bank and the International Monetary Fund. For about twenty years the action plan has been a part of the Structural Adjustment Program (SAP). Results obtained during uninterrupted implementation periods of SAP indicate growth rates higher than population growth rates. Annual growth is 3.5% for 1988-1990 period and 4.3% for 1997–2000 period.

However, the results seen to date overshadow the true poverty situation being faced in the country including the rural population and the unfavored social layers. Based on the recent trend in the Per capita Growth Domestic Product (GDP), Madagascar is ranked among the fifteen (15) poorest countries worldwide. GDP fell from US\$ 383 in 1960, to US\$ 220 in 1999, and to US\$ 200 in 2000. The socio-political crisis that recently shook the country in 2002 tends to reinforce such an economic precariousness and acute poverty situation. This increase in poverty has been a major factor contributing to the accelerating degradation of the environment. The rapid disappearance of forest cover by 25% of area in 1950 to 16% in 1995 is an illustration of the same. Such a situation clearly highlights the close interconnectedness of environment and poverty.

With such a statement, the GoM means to implement a coherent poverty reduction agenda, observing and following the "Economy - Social – Environment" trilogy. To this end, the revised Poverty Reduction Strategy Paper (PRSP), in the sense of integrating environmental concerns in the macro-economic framework, sectoral strategies and action plans aimed to reduce poverty, has had an impact. The strategy strongly revolves around three axes:

- Restore a rule of law and a good governance society,
- Stimulate and promote a broad-based economic growth, and
- Stimulate and promote broad-based human and material securing and social protection schemes.

At the 2013 horizon, it is envisaged to halve the poverty rate.

In 1990 Madagascar adopted the Malagasy Environment Charter, which sets the overall framework for executing the environment policy. It defines the general principles and provisions that translate in operational terms the national environment policy, keeping in line with Madagascar overall development.

The Environment action plan (EAP) seeks to "Curb the degradation spiral by reconciling population with their environment ". Taking into account the fact that reversal of environmental trends accumulated over centuries could not be done within a five year plan, EAP is a long term plan that would be implemented over at least fifteen (15) years. It is financed mostly by international donors and, more marginally, through credits contracted by the Malagasy State.

The first phase of EAP (EP-I) implemented from 1990 to 1995 has been completed and focused upon implementing institutional schemes, and was driven to dealing with urgent issues.

The second phase of EAP (EP-II) sought, on the one hand, the scaling up of actions conducted or

initiated at field level and, on the other hand, integrating the Environment program into the national development.

The third phase of EAP (EP-III), planned to commence as of July first 2003, means to consolidate the assets gained from the first two phases. It will essentially aim to conserve and value the importance and quality of the natural resources to allow sustainable economic growth and better quality of life.

Achieving the EP goals includes the following objectives :

- a) Models for sustainable management of renewable natural resources and for biodiversity conservation are adopted and owned by populations in the intervention areas.
- b) The biodiversity and renewable natural resources of representative eco-regions is conserved and managed on a sustainable footing with active multi-stakeholder participation;

1 Environmental Threats

Threats on biodiversity

Madagascar is known to be a biodiversity rich country. A large part of its biodiversity can be found in areas other than the existing Protected Area network. However, Madagascar has also been identified as a "hotspot" due to the magnitude and extent of pressures on its natural resources as exemplified by the disappearing forest cover. In fact, while deforestation fell from 200 000 ha in previous years to 100 000 ha per year, according to Conservation International recent estimates in 2001, risk for destruction or loss of natural habitats and biodiversity remains actual. At the planet scale, it is recognized that the loss of one hectare forest in Madagascar has a more serious effect on the world biodiversity than that of one hectare forest elsewhere.

Deforestation and irrational exploitations of forests

Deforestation, mainly due to human action, fires and natural disasters stands as one of the main threats to the environment in Madagascar. It is further related to rapid demographic growth, generalized impoverishment of populations, the need to accede to land, necessity to increase food crops failing high agriculture productivity and increase of needs for fuelwood, timber and services.

Accelerated reduction of forest cover is mainly attributable to slash and burn practice ("tavy") to meet food needs for a significant part of the rural population. But tavy is not only an economic problem. It is also the expression of socio-anthropological and cultural aspects on the close, deep and, sometimes, antinomic, relationship between man and forest. This secular ancestral space-consuming practice transmitted from generation to generation has become both a thinking and living mode for the people in Madagascar.

Deforestation is also related to activities of harvesting woody products to cover energy needs. Such a stock, aggravated by deficiency in managing forest exploitations due to weak control and forest regulation schemes, conjuncted by predominance of some socio-anthropological aspects and due to land tenure problems, leads irremediably to decreased forest surface areas, destruction of habitats, loss of biodiversity. All of which results in ecological and economic imbalance.

Soil Degradation

Deforestation and uncontrolled practice of pasture fires in combination with heavy soil erosion leads to considerable losses of surface layer of soils (in some cases, higher than 150 – 200 tonnes per hectare per year on bare soil) and to degradation of watersheds. Erosion as a phenomenon is characterized by strong manifestations such as lavaka and turbidity of rivers. Such soil losses engender decrease of fertility inducing low agriculture productivity, considerable damage on hydroagricultural and port infrastructures, sedimentation of marine and coastal areas and increase in risks of damage related to natural disasters.

Soil degradation would cost the country about US \$ 150 to 300 million per year (World Bank review in 1988) which is between quarter and half the average annual income per inhabitant. It stands as a handicap and actual danger for country economic growth as soil is one of most important production factors.

Water problems

Rivers and streams feed the water perimeters for agriculture production, and ensure water supply to urban and rural towns and villages. Such water drains sediment to low points. Such a situation translates into decrease of level of water table, drying up of sources, siltation of lowlands and destruction of infrastructures (hydro-agriculture, port, road etc).

Degradation of marine and coastal areas

The coastal area, particularly reef areas and mangroves, experience numerous impacts due to high concentration of economic activities (fishing, aquaculture, agriculture, livestock, tourism, town planning). Degradation of watersheds affects almost all coastal areas of the country: siltation of coastal plains and ricefields, salinization of soils, degradation of reefs and mangroves. Some portions of coastline experience coastal erosion. Household and industry waste, as well as hydrocarbon spillage entail marine pollution and loss in marine biodiversity.

Diagnoses conducted at level of marine and coastal areas indicate poor living conditions of coastline communities, overexploitation of marine and coastal resources, and existence of conflicts in the use of coastline and marine resources and space.

Pollution in urban areas

In urban areas, water and air pollution results from expansion of industrial activities that are little concerned about negative environmental harm and impact, inadequate sanitation and increase in traffic. Such pollution in urban areas harms the health of the population thereby compromising its productive capacity.

Natural disasters

Due to its geographic location, both its natural and physical location, Madagascar faces considerable natural disaster risks. Periodical passages of cyclones, seasonal locusts or draughts prevailing in the South, among others, engender important damage, the economic costs of which are considerable. At the environment level, ecological changes tend to be irreversible.

2 Lessons Learnt

2.1 Results, lessons learnt, and perspectives

2.1.1 Results

Environment program objectives have been overall satisfactorily achieved, though slightly below the initial expectations. Main results obtained are as follows :

At the institutional and legal level

Establishing a trust and cooperation climate with multilateral donors (World Bank, United Nations Development Program, Global Environment Facility, European Union) and bilateral donors (United States, Germany, Japan, France, Netherlands, Switzerland, Norway) allowed the country to implement its environmental policy. The program also benefited from considerable technical and financial support from international Non Government Organizations (NGOs) involved in the environment sector (World Wildlife Fund, Conservation International, Wildlife Conservation Society) in implementing actions. A multi-donor secretariat was created for more effective coordination between the donors.

Setting up of the following national institutions helped to achieve thematic actions in the area of environment :

- The National Office for Environment (ONE) in charge of coordinating Environment Program ;
- The National Association for Environmental Actions (ANAE) in charge of managing mini-projects for soil conservation and improvement of rural living framework ;
- The National Association for Protected Areas Management (ANGAP) in charge of managing the national protected area network ;
- The Center for Training in Geographical information Sciences (CFSIGE) in charge of environment related training and education;
- The Support Department to Environment Management (SAGE) in charge of implementation of renewable natural resources management .

Environment Program has provided an opportunity for strengthening existing national institutions : the Directorate for Land Office in charge of land tenure securing - the Foibe Taosarintanin'i Madagasikara (FTM) (Madagascar Cartography Center) in charge of cartography, remote sensing and geographical information – the Directorate of Water and Forests, in charge of forest management.

Within institutions established during the first two phases of EAP, the following have been set up : the National Board for Environnement (CNE) – the Interministerial Board for Environment (CIME) – the environment units in sectoral Ministries - the Observatory of Forest Sector - the environmental mediators - the consultation structures and committees.

For more efficiency in the field of environment management, numerous tools relative to various themes have been developed over the period. A selected few among various others are:

- Developing legal and regulatory tools : Malagasy Environment Charter and its modifying clauses, law on local community management of renewable natural resources (GELOSE) and its application texts, Sectoral Policies compatible with environment in the sectors of industry, tourism, energy, mine, roads, fisheries and aquaculture, textile, Decree on Environmental Impact Assessment Legislation (MECIE) and its application texts, Code of Protected Areas (COAP), Environment Related Education Policy (PERE), New forest legislation, Forest policy (POLFOR), New legislative and regulatory texts for improving recovery of forest revenues, ratification of international conventions relative to environment.

- Designing referential documents : Document steering the policy of Integrated Management of Coastal Areas (GISC)- National Strategy of sustainable management of biodiversity (SNGDB) – A bill on intellectual property rights and genetic property rights – Forest Master Plans - Fishery and Aquaculture Master Plan – Policy of MILK industry (under way) – Watershed Management Plans, land use maps and forest evolution maps, Management Plan of Protected Area Network.

At technical level, assets relate to :

- Defining methods or methodologies (developing spatial approach, regionalization of implementation of program, initiation to and strengthening of eco-regional approach, developing tools for decision making and referentials – National Forest Ecological Inventory, forest management plans, forest zoning, reports on status of environment, National and provincial Environment Management Charts, Environment Information System)
- Implementing direct field actions by various implementing agencies and the other national and international partners in various areas such as protection and management of natural biodiversity heritage, implementation of mini-projects for soil conservation, agroforestry and other community projects, transfer of management of natural resources (Secured Local Management, Contract-based forest management), environmental impact assessments, environmental education, creation of a study branch “environment” at level of higher education, ...

The main results and impacts of the activities conducted under the framework of the environment program are as follows :

- Reduction of deforestation rate is 0.7% per year in protected areas, 1.0% per year in classified forests, 1.5 % per year in state owned forests ;
- Degradation of crucial habitats regressed significantly from 1.66% per year to 0.62% per year ;
- Quality of biodiversity in protected areas in terms of endemism has improved from 0.61 to 0.74;
- Over 370,000 families benefited from mini-projects of water and soil conservation, entailing increase in production with positive results (10% per year during the period compared to a core group) ;
- Gross revenues from tourism associated to protected areas have increased rapidly (estimates at about US\$ 50 million in 2000 and 40% of foreign tourists) with benefits to local communities;
- The 'polluter – pays' principle is applied in investment decisions through implementation of Environmental Impact Assessment Legislation (MECIE).

2.1.2 Lessons learnt

Among various lessons learnt, important selected lessons include: i) need for replication of the impacts; ii) scattered activities over the region; iii) complexity of the overall program; iv) need for strengthening synergy with other projects / programs; v) need for competent human resources in organizational structures for environmental management created at the level of each Ministry

(decree N°349-2003 of 27.03.2003)(yet, unemployment among postgraduate students who conducted EIS) .

2.2 Baseline Scenario without environment program

In the absence of the Environment Program, the country would run the risk of greater catastrophies. The negative impacts on the environment (loss of both terrestrial and marine biodiversity, water, air, sea pollution, erosion etc) in themselves prove to be a heavy price to pay. Accelerating deforestation and soil degradation do not provide an enabling basis for sustainable development of the country. There would be very limited development actions being taken to address the downward spiral of environment degradation. Economic growth that is much sought after would only be a dream without the environmental viability aspects. Population would remain indifferent to any destructive action and to any degradation phenomenon.

In the area of fishery and aquaculture, sea pollution due to hydrocarbon disposals, degradation of lake based ecosystems due to landings in water plans (agriculture crop phenomena on slopes that are not planned for such an end) provide constraints difficult to manage in a well defined and analyzed programming without the baseline scenario.

Accelerated Deforestation

Acceleration of deforestation is in relation with rapid demographic growth, generalized impoverishment of populations, need to accede to land, need to increase food crop resources and increase in needs for fuelwood, timber and services. It is estimated that the forest cover will disappear within 25 years if current trends go on. Accentuation of such a phenomenon will ultimately entail transformation of continental water plans into marshes, which will decrease its importance in terms of fishing.

Rapid soil degradation

This phenomenon always entails considerable decrease of agriculture productivity. Such losses in soils accentuate decrease of fertility, inducing low agriculture productivity and provoke considerable damage on hydroagriculture, port, and transport infrastructures. Furthermore, they engender sedimentation of marine and coastal areas and aggravate damage risks related to natural disasters.

Non environment friendly development activities

Practicing unsustainable agriculture techniques, non observance of environmental standards in terms of investment (industrial projects, infrastructures) would inevitably lead to degradation of the environment and the living conditions. These would further contribute towards increasing poverty in both urban and rural environment. Nomadic agriculture and 'tavy' would remain the most practiced production alternatives.

Degradation of marine and coastal areas

Degradation of coastline, marine erosion, and irrational exploitation of fishing resources would induce poor living conditions among coastline-based communities and would ditch them further into poverty situation.. Besides, such a situation would be prejudicial to national economy, the fishing

sector being one of foreign currency sources for the country.

Loss in biodiversity

Material destitution and necessity to meet vital needs (food, energy) would encourage harmful human behavior and this in turn would lead to lack of respect for conservation of biodiversity and natural resources, in general. Lack of opportunity for economic and social incentives of preserving environment would aggravate the situation of poverty. Hence, in the baseline situation the vicious pattern of - degraded environment - poorer population – more rapid degradation of environment, would continue.

Continuous Deterioration of living conditions in Rural areas

The population strongly depends on agriculture to ensure their survival. Impact on soil degradation combined with effects of price fluctuations would induce decrease in agriculture productivity entailing constant decrease of incomes and further accentuating impoverishment of agriculture population. Such a poverty status would encourage clearing of new forest areas provoking destruction of natural resources; These situations would make rural economy vulnerable and lead to a slowdown in the overall economy.

Continuous Deterioration of living conditions in Urban areas

The most destitute layers of the society would always remain the most exposed to diseases related to air and water pollutions, such as respiratory and intestinal diseases, and the flu. This would result in poor human health and decrease of productivity thereby limiting the economic growth. A sickly and poor population would contribute indirectly to the rapid degradation of environment.

In summary, the existing trends for natural resource degradation would no doubt compromise the country's economic development by degrading production factors and capacity of natural ecosystems to regenerate. This would further destabilize the weaker sections of the society who do not benefit equitably from benefits of economic growth. The social broad based protection in the context of both human and materialistic amenities would not be possible without the program.

Degradation of natural pastures

The pastures are mainly degraded due to irrational use of fires (doro-tanety) for renewing natural pastures.

3 Commitments by GoM

The fact that Madagascar is among one the first countries of the African Continent to be committed to meeting its environmental challenges and to equip itself with an Environment Action Plan. This exemplifies the willingness of the GoM, which has been several times reaffirmed in its commitment to sustainable development for the benefit of the Malagasy population.

This is the vision for Madagascar to commit in front of the international community to increase the size of areas under conservation in order to achieve the 10% of the national total area in accordance with

IUCN standards

Preserving the environment is a top priority for achieving this large national objective. In addition, to conveying a strong signal to financial and technical partners in the environment sector in Madagascar, the GOM's political commitment to the environment is strengthened by its financial support to the Environmental Program. The government has also signed and ratified several international environmental conventions (for status of international conventions, see Annex).

3.1 Main axes of management of the environment in Madagascar

The GoM policy in environment is an integral part of the Poverty Reduction Strategy Paper and participates in the process for rapid and sustainable development. The Environmental Program, therefore, is aligned with other national programs and activities.

In terms of challenges for reducing poverty, contribution of the environment consists, more particularly, in improving living conditions among poor people through sustainable use of natural resources and internalization of environmental dimensions in the overall development policy and sectoral policies. The following will be considered:

- a) Cleaning some texts governing the environment such as the Malagasy Environment Charter;
- b) Drafting Code of Environment;
- c) Drafting legislative texts on processing and recycling waste (packaging products, household, hospital, and bio-medical, toxic garbage, chemical products);
- d) Reforming and redefining roles of diverse national institutions involved in institutional structure of environment management;
- e) Setting up an environmental control, monitoring, and surveillance body (independent body having decision making power), forming competent legal branch about environmental issues, as well as related tools, setting up of arbitration structure in case of environmental dispute;
- f) Defining roles and missions of structures of autonomous provinces and those of departments linked to Ministry of Environment, Water and Forests as well as i) setting up of decentralization and, namely anchoring environmental actions at commune level, ii) promoting partnership with private sector and opening to multiplayers of environment, iii) wider field presence than at central administration level.
- g) Strengthening role and competences of structures in charge of environment within sectoral ministries involved;
- h) Strengthening good governance in forest and environment areas that is characterized by separating State core functions from exploitation or field implementation functions;
- i) Designing a new environmental action cycle based on lessons learnt at end of EAP.

Coordinating anti-pollution actions in order to preserve environmental integrity at country level remains one of priorities of Ministry of Environment, Water and Forests.

Preserving essential functions in environment is also as important an aspect. In fact, environmental functions such as ecological function, hydric regulation function, climatic function, water and soil conservation function, and production function (leverage for sustainable development) are central to Madagascar, an essentially agricultural country.

These important environmental aspects need to be addressed in a sustainable manner at the national level (including technical, institutional, and financial levels). It is obvious that environment alone cannot bring development at the country level. Conversely, ensuring sustainability is not possible

without the environment. To be sustainable, development actions must draw a balance between the two to maintain a sound and enabling environment. Consequently, any development action must link closely to preserving the environment in particular, the environmental core (NODE). The form of such contribution is still to be defined.

For the environmental core to ensure the minimal threshold, the following themes have been identified starting from priority axes defined in the Malagasy Environment Charter:

- Soil conservation, protection of watersheds;
- Biodiversity conservation at level of terrestrial and marine protected areas, conservation forests and sites;
- Water preservation and source protection in protected areas, forests, conservation sites and RAMSAR sites ;
- Wide environmental education action from primary schools;
- Environmental surveillance actions;
- Integration of environmental dimension at level of population, in general, at level of groups or groupings, at level of private sector and sectoral policies;
- Coordination of anti-pollutions (solid, liquid, gas), waste management and processing;
- Environmental watch out, developing environment management tools and enactment of legislation: MECIE, international agreements, coordination, monitoring evaluation, policies, legislation, sustainable financing, strengthening institutions in charge of environment management, namely in the core;
- Vigorous agricultural extension with alternative environment friendly activities (apiculture, agroforestry, enhanced pastures, agro-ecological crops, associated crops, ...) and distribution of substitution practices to charcoal use.

The Ministry of Environment, Water and Forests (Ministry in charge of environment) will ensure that all environmental actions conducted are in line with the national priorities. It is the implementing agency that ensures overall coordination of the environmental activities. National institutions will be appointed by the Ministry in charge of Environment to fulfil the role of deputy implementing agency according to their national mission.

Other national institutions, established and strengthened in the first two phases of implementation of EAP will be involved in the program under the supervision of the Ministry, and will be responsible for conducting and coordinating of delegated tasks. Such institutions will have to define operational aspects of implementation in consultation with various partners and players, among others, implementation modalities, costs of activities. To such an end, they will have to report to the Ministry.

Recommendations

Based on the socio-economic situation and the environmental challenges that the country faces on one hand and, the global themes that are central worldwide – sustainable development and poverty reduction – on the other hand, the GOM has built its current economic and social redressal program by adopting " Rapid and sustainable Development – Poverty Reduction" as its motto. GOM is committed to meeting its obligations to both sustainable development and poverty reduction (Earth Summit in Rio 1992, Social development Summit Copenhagen, 1995, Millenium Summit 2000, Johannesburg Summit 2002).

From that perspective, sustainable development is defined as a process that integrates the following three fields: (i) economy, (ii) social, and (iii) environment. Sustainability of development aimed towards future generation seeks for synergy among these three areas and aims at: (i) sustainable economic

growth, (ii) social equity and (iii) ecological viability.

In order to ensure sustainable development and poverty reduction in the long-term, GoM decided to define sustainable development goals and to undertake related plans and programs. These are, among others, the Support Program to Rural Development (PSDR), The Program for Reform of Public Sector (PRSP), the Multisectoral Project for Prevention of HIV/AIDS (PMPS), the Sectoral Program of Transports (PST), the Program of Land Tenure Securing.

As provided in the PRSP, the role of the Ministry of Environment, Water and Forests to "safeguard the unique environment of Madagascar" would be fulfilled through the following operational objectives :

1. Conserve the importance and quality of natural resources
 - Develop institutional and regulatory frameworks required for protection of environment and nature;
 - Promote sustainable management of natural resources;
 - Ensure financial sustainability of various schemes for environment management, among others, of system of national parks, of Environmental impact assessments, of forest management through National Forest Funds FFN
2. Cater for economic, ecological, and social needs of population in forest, soil, and water resources
3. Curb deforestation and bushfires

In recognition of the global significance of the country's biodiversity, the GoM will continue the EAP through implementing the third phase of the Environmental Program III. Infact, EPIII will significantly make a wise use of ecosystems and of their sustainable potential impact in favor of poverty-reduction. It is again reiterated that foundations of sustainability rely on notions of "balance " and "renewal" of ecosystems and natural resources, as well as on acquiring the environmental reflex. Therefore, the following would be given particular attention:

- Partnership with civil society and private sector;
- Inter institutional synergy;
- Synergy with other national programs;
- coordination;
- sustainable financing;
- good governance;
- poverty reduction;
- continuity of activities that have been undertaken in a sustainable manner;
- making the legal and regulatory framework adequate and putting it under application;
- environmental education and communication;
- effective participation of local communities, especially the most vulnerable layers, in environment protection (planning, integrated programming of agricultural policies. In that respect, all environmental actions will develop within the sapatial framework of communes or commune groups (OPCI) and within the operational framework of Commune Development Plans or Intercommune Development Schemas.
- need for a national policy and for a national action plan in bushfires.

4 Vision for 2015

In line with the trilogy theory -'Economy– Social – Good governance' - as the foundation for

sustainable development and poverty reduction, one can propose a progressive alternative motto for Madagascar namely, 'Economy – Social – Environment'. Overall, better environmental conditions would improve with quality of life among the whole population. Additionally the success of environmental actions depends on the results and impacts of economic and social programs conducted at the country level. Significantly, the millenium objectives defined at the global level find a solid basis when taking into account the environmental aspects that guarantee both the quality of development and sustainability.

The progress in environment management may be illustrated through the following:

- Quality of life is defined by the access to natural resources (water, soil, forests) to meet the basic survival needs of a population. Placing these vital elements at disposal at lesser costs would generate well being of the population and enable them to fulfil their production functions;
- Ownership of environment conservation in all areas and at all levels: acquiring the environmental reflex, giving up cultural and sociocultural practices that do not grant values to production factors and natural resources, sectoral policies integrating the environmental dimension;
- Effective sustainable management of natural resources is acquired at national level;
- Natural forest Cover is maintained at its current level (situation in 2002) ;
- Biodiversity threat index, soil loss in intervention areas are regressing;
- Effective Representativeness of various ecosystems of the country in the protected areas system;
- Significant increase in contribution of environmental sector to GDP compared to its current level;
- Improved protection of sources and quality of water;
- Valorisation of waste (industrial, household garbage, packaging products) is initiated ;
- Reduction in use of fires in renewing pastures.

Poor existing status of environmental degradation in Madagascar will be replaced by a scenario reflecting economic and social development in perfect harmony with environment preservation (rivers that are less loaded in solid particules and suspended chemical products). Madagascar is progressively becoming a 'green island' again. In summary, the essential functions of the Environment core are preserved and made sustainable, with a guarantee on the quality of the environment, and better quality of life for both the current population and the future generations.

5 Overview of the Environment Program III (EP-III)

In 1991, Madagascar started implementing the Environment Charter with support from a group of bilateral donors (Germany, United States, Switzerland, France, Japan, Netherlands, Norway), international institutions (Global Environment Facility, International Development Association, United Nations Development Program) and worldwide NGOs renowned in environment sector (World Wildlife Fund, Conservation International, Wildlife Conservation Society). The Environment Action Plan, after 10 year of existence, is entering its third and final phase. The overall program has focused upon

prioritizing the environment and has significantly and actively involved the technical and financial partners of environment sector in Madagascar in its implementation.

5.1 Goal

The goal of Environment program is set out as follows: "Importance and quality of natural resources are conserved and wisely utilized in support of sustainable economic development and a better quality of life".

5.2 Objectives

Encouraged by the results and impacts of the earlier phases, the GOM for the implementation of the EPIII has specified two main objectives:

- a) Models for sustainable management of renewable natural resources and for biodiversity conservation are adopted and owned by populations in the intervention areas.
- b) The biodiversity and renewable natural resources of representative eco-regions is conserved and managed on a sustainable footing with active multi-stakeholder participation;

5.3 Results of EP III

5.3.1 *Sustainable development actions are implemented*

i. Community development plans and inter commune schemes take into account the environmental dimension : support to communes for developing and establishing Community Development Plans and development of intercommunal development schemes, promoting intercommunal regional exchanges and with the other development programs;

ii. Alternative sustainable development are implemented in keeping with Commune Development Plans and intercommunal schemes: improvement of management of cleared areas, support to transfer of management of rangelands, promoting conservation and sustainable water and soil use and implementation of pressure alternative activities; activities in line with orientations of LPDR such as increase in agricultural production with optimal use and sustainable management of natural resources, preserving the environment and rational management of rural space, development of private initiatives and knowhow in environment and sustainable management of natural resources

iii. The sectors of biodiversity are wisely utilized in a sustainable way : implementation of approaches for fair sharing of benefits and reorganization of management of marketed and marketable species, rational exploitation of natural resources in diversification of productions (silkworm farming, apiculture,...)

iv. Alternative energy is promoted : identification of renewable energy resources that are available and locally owned (for electrification and fuel), promotion of substitution biomass fuels and promotion of alternative energy use, in particular biomass, hydropower and solar energy;

v. Management of urban environment is improved : support to development and implementation of municipal programs for environmental actions and promoting prevention and reduction of pollution.

5.3.2 Forest ecosystems (natural and artificial), wetlands and water reserves are managed in a sustainable manner

- *Forests are managed in a rational way* : refining forest zoning, upscaling of forest management transfer, streamlining forest exploitation, promotion and application of norms and standards on forests and its products (eco-certification etc), setting up of complementary regulatory and economic tools and developing effective and sustainable forest management systems;
- *Artificial forest cover is increasing*: pursuing creation of Land reserves for reforestation and management of carbon sequestration pilot sites;
- *Management of woody fuels is improved*: support to using improved carbonization use techniques and promotion of models that are less woody fuel consuming ;
- *Wild fires are decreasing*: anti- bushfires awareness raising and motivation among population, strengthening law enforcement against bushfires and satellite monitoring of fires ;
- *Wetlands and water reserves are preserved in a sustainable way* : promotion of preservation and sustainable management of lakes and upscaling of protection of hydric basins.

5.3.3 Sensitive ecosystems of Madagascar are conserved and wisely utilized at the levels of Protected Areas and conservation sites.

- i. Representativeness of ecosystems is promoted* : reclassifying some protected areas, creating new terrestrial protected areas and conservation sites, development of marine park systems re-demarking some protected areas ;
- ii. Maintaining biodiversity and ecological processes is ensured in protected areas*: ecological monitoring of habitats, species, pressures and conservation, surveillance, and control measures, setting up conservation infrastructures and materializing zoning, developing targeted research ;
- iii. Ecotourism at level of protected areas is developed and made profitable with private sector* : improvement of service to visitors, setting up and improvement of ecotourism and service infrastructures, promotion of protected areas and conservation sites and assessment of ecotourism management.

5.3.4 Marine and coastal ecosystems are managed in a sustainable manner

- i. Sustainable management of activities on coastal and marine area is promoted in the 20 intervention coastline areas* : development and implementation of intercommunal management schemas, capacity building among players in Integrated Management of Coastal Areas;
- ii. Coastal and marine resources are wisely utilized and managed in a sustainable and equitable manner in the 20 intervention coastline areas*: upscaling of management transfer of renewable natural resources, promotion of labeling of catches;
- iii. Biodiversity and ecological function of marine and coastal ecosystems are maintained in the 20*

intervention coastline areas: promotion of non protected area site conservation allowing renewal of stocks and species, promotion of protection of endangered coastal and marine species, promotion of marine ecotourism;

iv. Prevention and reduction of pollutions and degradation in coastal and marine areas are limited : development and support to implementation of intercommunal plans for pollution prevention and reduction, setting up of intercommunal pollution and degradation observatories, strengthening prevention and reduction of erosion upstream special management marine and coastal areas.

5.3.5 Positive behavior change towards environment is observed

i. Decision making and information tools allow implementation of sustainable environment management : management of environmental working chart at central and decentralized levels , and facilitation of information exchanges, monitoring marine and terrestrial ecosystems and management of data on Malagasy biodiversity, development of economic accounting of environment;

ii. National capacities are strengthened for effective and efficient management of environment : enhancement of knowledge on environment, support to environmental communication, support to education and environmental training, promotion of attitudes enabling conservation of protected areas and conservation sites.

5.3.6 Sustainable financing bases of actions for management of natural and environment resources and environment are established

i. Specific financial sustainability tools are developed : setting up of a 'Trust fund' for protected areas, development of other financing tools and optimization of interface with other sectors for environmental action financing ;

ii. Reliability and transparency of system for managing funds and for monitoring is functional : improvement of existing management systems, development of management and administration capacities, strengthening coordination of activities and optimization of cost structure among implementing agencies ;

iii. Local financing systems are in place : development of local taxation mechanisms and support to sustainable local investment funds.

The aim is to ensure long term sustainable financing of environmental activities, and therefore is also to reduce dependence on external donor funding.

i. Setting up of a foundation : priority was set on creation and operationalization of a Foundation for the benefit of the national protected area system managed by ANGAP based on a preestablished sustainability plan with a well defined governance mode ;

ii. Ecotourism: because of the fact that Protected Areas provide one of two important destinations of tourism at country level with about 90,000 to 100,000 visitors, a cost recovery system will have to allow ANGAP to ensure sustainability of actions for protection of national heritage ;

iii. Payment for environmental services : the economic analysis conducted in the framework of preparing EPIII demonstrates that forests in general and the protected areas of the national PA network make the 'environmental services' of vital importance to the country. According to the 'beneficiary–pays' principle, payment for environmental services provided by forests of the National Forest Estate and protected areas of the national network should be envisaged in terms of financial participation by beneficiaries in management actions of sites involved ;

iv. Making development actions contribute to long term sustainability of essential functions of the Environmental Core (NODE).

5.3.7 Better environmental governance is in place

i. Development policies of country internalize environmental dimension: development of management tools and ensuring coherence between texts and procedures, making investments compatible with environment , monitoring, environmental control and setting up of complaint management mechanisms, integration of environmental dimension into territory planning policies, development of energy policy for sustainable water management, effective application of texts in force for environmental impact assessment legislation for any public investment program/project, setting up of a legal and regulatory environment favorable to rural development coupled with sustainable management of natural resources, accountability and capacity building among all rural development players in the environment sector.

ii. Institutional mechanism is strengthened: strengthening mission of (CNE, CIME) and development of partnership with environmental structures at level of sectors and decentralized communities ;

*iii. Environment administration is strengthened :*capacity building of Ministry in charge of environment, ensuring implementation of obligations under the international environmental conventions ratified by Madagascar and ensuring interface roles with Ministrie in charge of planning and in charge of finance;

iv. Forest department is strengthened: strengthening of forest administration, setting up of an autonomous structure to ensure forest operations, capacity building of players in forest management, broadening of watchdog and information devices initiated by the forest sector observatory ,and strengthening control of forest sector

5.3.8 Ensure good governance in management of Program

Complementing good governance at the sectoral level, governance issues will also be dealt through upgrading management of the Program. All service provisions will be conducted on a contract basis either through program-contracts, or through result-based contracts. Strategies to ensure good governance will include :

- transparent management and use of funds allocated according to agreements reached with donors and partners;

- implementation of activities according to provisions recorded in related referential documents with regard to procedure, standards, and regulations in force;

- setting up and effectiveness of a monitoring evaluation system.

5.4 Definition of intervention areas

The national environmental policy covers the whole country. However, with the overall aim to generate significant impacts among population (income increase) as well as in natural resource management (better conservation and wise utilization of natural resource), Intervention Zones will be defined according to the following criteria :

- importance of biodiversity (terrestrial and marine protected areas, conservation sites);
- magnitude of pressures (zones peripheral to protected areas, zones around conservation sites, classified forests, coastline and coastal zones, erosion zones, water points and sources);
- results and impacts from the first two phases of EAP ;
- local and/or regional dynamism.

5.5 Benefits

The implementation of the EAP will result in benefits at environmental, economic, and social levels on the one hand and also at local, national, global levels on the other hand. The economic analysis conducted shows undeniably not only environmental benefits, but also economic benefits generated by preservation of ecosystems and sustainable management of natural resources at level of all intervention zones of Program (arid zones, periurban zones , rainy zones, mountain zones).

5.5.1 Benefits at local level

The Environment program contributes to poverty reduction. The vulnerable layers of society and the rural poor who are entirely dependent on natural resources for survival will be the priority targets, especially in case of access restriction or limitation to such resources. Alternative actions planned will improve quality and standard of their living.

At economic level, equitable sharing of dividends from good management of biodiversity would be one of the main benefits derived by EP, in addition to promotion, commercial exploitation of non woody forest products and wise use of sectors, in particular, medicinal plants

As a result of the alternative projects to reduce pressures and development of mini-project, the promotion of sustainable cultivation techniques and practices (agroforestry, improved pasture, agro-écological crops, composting, wise use of agriculture products) would allow an increase in production and, therefore, the economy of a household. This will make the population more sedentary and will significantly reduce the threat to surrounding natural resources.

If current trends in ecotourism development in the Protected Areas and other natural sites in intervention zones of Program are enhanced, economic impacts for neighboring populations and private sector will also experience appreciable increase (transport and services, lodging, catering etc. This is an indication that the Project participates in poverty reduction.

5.5.2 Benefits at national level

The fact that the population in general, communities, public institutions, civil society and private sector acquire an environmental agenda and become responsible for good management of environment in the long term constitutes an important national benefit for the country.

Through capacity building and increasing accountability among entities involved in environment management the country will benefit through redressal at both social (health) and economic (productivity of soils and people, sustainability of infrastructures) levels. Through sensitization of the population and operators in techniques of processing and wise use of waste (packaging products, household garbage) the environment will contribute to economic development at the national level. Overall, the program will contribute towards increasing the GDP and in improving quality of life and, therefore, poverty reduction in Madagascar.

5.5.3 Benefits at global level

In addition to benefits in improvement of global environment through benefits from a well managed environment (carbon sequestration / trapping, halting desertification), one of invaluable benefits from the Environment program is the conservation of a unique biodiversity heritage. Preserving such wealth allows one to acquire and develop knowledge and is a first step towards promoting global ecotourism.

6 Strategic Choices for Implementation of EP III

6.1 Meeting National priorities

The results of the program would be realised through a programmatic approach funded by multiple financiers, including the Government of Madagascar, bilateral and multilateral donors, and non-government organisations, and coordinated through the institutional cooperation framework established under EP II. In order to secure concrete and tangible results in the management of environmental actions and, in particular, in resolving crucial problems (protection of ecosystems, management of fires, 'Tavy', management and wise-use of terrestrial, coastal, and marine resources), coordination, collaboration and effective organization are crucial. In that respect, recognition and understanding of the national priorities by all stakeholders is utmost important.

6.2 Ensuring sustainability of environment management

Several axes for setting up a sustainable financing mechanism have been identified : payment for environmental services, Bio prospecting, MECIE, Eco -certification / eco-labeling, National Forest Funds, Protected area Entrance fees , royalties, taxes on hydrocarbon, Intellectual property rights, carbon sequestration, cost recovery, tgreen taxes, filming duties , research duties.

The sustainable financing mechanism of the Environment program relies on implementation of three large axes: i) setting up of a foundation ; ii) putting in place a mechanism for equitable redistribution of tourism benefits; iii) payment for environmental services.

6.3 Strengthening Synergy between various components of Environment program

With the aim of generating significant impacts at the level of both population (income increase) and natural resource management (better conservation and resource valorization), Intervention Zones will be defined, in which program components will focus their interventions. Internal synergy among various components of the Environment program will be given importance to ensure better complementarity.

6.4 Development of partnership with other sectoral programs

Given that environment issues lie across the board, integration of environment dimension in sectoral development policies and actions is required. In addition, synergy with other national Programs such as PSDR, PST, FID, VOHIJORO /MESRES will have to be strengthened. Such partnerships with other sectoral programs has to be found at several levels, among others, at the level of intervention zones. Implementing this principle requires strong coordination and a high decision making ability. The overall approach therefore aims at strengthening synergies with various sectors, integrating environmental dimension in all development activities and valorizing complementarity among actions.

Need for specific collaboration is vital for implementation of environmental actions. For example, Forest management with sectors of trade, energy, industry, medicine, and research, development activities in rural areas with agriculture sector that are framed in Action Plan for Rural Development (PADR), management of Protected Areas and conservation sites with sector of tourism, management of coastal and marine areas with sector of fishery and fishing resources, management of urban pollution with sector of transport, taking account of gender approach with social and education sector

Significantly, the importance of partnership with the Support Project to Rural Development (PSDR) and other projects of rural sector is highlighted. Such are, among others, cases of implementation of activities of Commune Development Plans, of biodiversity valorization according to sector-based approach, effectiveness of a viable agriculture with participation of most unfavored layers, soil conservation, and regeneration of lands, optimal water use in agriculture development. In line with strengthening such a synergy, specific agreements will be established for financing by PSDR of targeted rural development actions at level of intervention zones of Environmental Program.

The Environment program will involve other stakeholders in the implementation of its activities (associations, NGOs). Wise use of community-based competences is an crucial aspect of the stakeholder participation approach.

Partnership with the outside needs to be strengthened, especially in keeping with NEPAD in which there are eight priority intervention axes in the environmental sector (fight against desertification, protection of wetlands, invading exotic species, global warming, environment protection transborder zones, economic governance, financing).

6.5 Partnership with decentralized territory communities

The environment program will contribute to maintain strong collaboration with decentralized territory communities in developing, programming and executing interventions, as well as monitoring and evaluation of environmental actions at the decentralized level. It will facilitate effective taking in hands of environmental management by communities. Practically all environmental actions will be anchored to communes and integrate the framework of commune or intercommune development plans.

6.6 Promoting participatory management and natural resource management transfer

Management of areas outside the protected areas, of some forest formations, marine and coastal zones, wetlands will be done in a participatory manner, involving neighboring communities who are main users of resources and capable of implementing community-based sustainable approaches. Such a conventional approach is reinforced through a legislative framework of management transfer for renewable natural resources, developed in the framework of EAP. This provides the foundations of support to sustainable management of natural resources at level of intervention zones.

6.7 Interventions based on program-contracts and result-based contracts

All service provisions in keeping with environmental programs will be delivered as contracts either through program contracts (case of services that cannot be divided into parts), or through result-based contracts (easily measurable and quantifiable impacts among both population and managed natural resources).

6.8 Importance of involvement of private sector and civil society

Participation of private sector and civil society (grassroot local communities, farmer organization, village-, commune-, region-, and nation-based consultation structures, economic operators, and other socio-professional private categories) will be sought out as it provides one of the bases for making environment management sustainable in Madagascar. Ownership of environmental actions will have to be translated into more emerging actions generated by grassroot communities, as well as non government groups through and for themselves (e.g., creation of Center for Biodiversity and Mahamalagasy "GASYBIO").

6.9 Institutional Framework

The proposed strategy and program will be executed based on transparent procedures and an institutional framework that has been developed to ensure greater institutional effectiveness and efficiency. Annex 1 provides details of the proposed institutional framework for the sector that will be pursued under the environment program.

7 Program Management and Monitoring & Evaluation of Results at Field level

As an implementing agency of environmental actions in Madagascar, the Ministry of Environment will be responsible for implementing the 'letter of policy'. The institutional arrangements for EPIII will be defined in the framework of the Manual for Execution.

Management of the Program will be based on some basic principles, including:

7.1 Effective planning

Achieving environmental objectives defined in the Environment Charter requires a flexible but rigorous action plan in its implementation and its monitoring. The Ministry of Environment, Water and Forests will require the following :

- Any project, any action in line with the competence of Ministry be recorded in Public Investment

Program (PIP) of Ministry, such a project or action requires a national counterpart or not ;

- All such projects or activities provide sound information allowing the Ministry to follow evolution of their implementation ;
- All such projects work in all transparency (technical, financial, and namely when they are research activities) with the Ministry.

Technical assistance and reviews have been an important aspect in the implementation of the EAP. Since the beginning of EP II, the Environment program has opted for a decentralization policy. The Ministry will see to it that the major part of the financing goes directly to concrete field actions. The approach based on decentralization will be strengthened in the course of EPIII with supporting measure of decentralization of means, especially financial ones, with a ratio of at least, 70% at provincial, regional, and local levels.

Given that the Environmental Core (NODE) provides the essential element of environment management at country level, financing plan for the NODE will be developed by the Coordination Unit which will ensure coordination (direct management of funds or management of information for specific funds earmarked) including the Trust Fund.

7.2 Strong coordination

Limited coordination and leadership, to a large extent, were found to be impeding factors in the implementation of EP II. In that context the development and design of EPIII provided an opportunity for various partners to express the need for stronger and more effective coordination and leadership from the Ministry. In that respect, the Ministry of Environment, water and forests will:

- Coordinate its policy with those of other sectors;
- Coordinate programs and projects under its authority;
- Coordinate intervention of environment donors.

EPIII involves the 'multi-player' approach. However, it requires all the partners and stakeholders to meet the requisite conditions for participation in the Program including:

- Establishment of a formal contract between the Coordination Unit, the implementing agency involved, the partner;
- Observance of the logframe for the Program (specific objective / results / activities / location) ;
- Observing roles and responsibilities for national institutions in charge of coordination for achievement of strategic objectives and specific objectives;
- Obligation of partner to give to the person responsible for specific objective technical and financial information regarding the activities conducted in keeping with Program.

7.3 Efficient, Transparent and Clear procedures

Efficient planning and coordination requires setting up clear and transparent, applicable procedures uniformly. Good governance is not possible without clear rules. Such rules, in the form of manuals of procedures for fund management , implementation and monitoring evaluation of activities, of projects and the program, mitigating measures for environmental impacts will be developed.

It is of primary importance to set up, with the participation of all stakeholders players, a pragmatic and user friendly monitoring & evaluation system that gives timely and useful management information, in particular, lessons, or possible recommendations for streamlining and modifying the program. The monitoring & evaluation scheme, with measurable and clear indicators taking into account of setting up the 'National Monitoring and Evaluation Policy' by the Ministry of Economy, Finance and Budget, will be developed in the EP III Manual of Execution.

Particularly for the forest sector, implementation of monitoring and information devices initiated by the Forest Sector Observatory to ensure good governance at sector level will be pursued.

8 Risks

In view of the expanse and diversity of the Environment Program, which, by essence, involves multiple sectors, a wide range of stakeholders, as well as various requirements by donors in rules and procedures, the following risks have been identified:

8.1 Uncertainty of financing

As it stands, the financing plan for EP III includes pledged funds by various donors. Donor funding for various activities that will lead to program results is based upon each donors' priorities and choice of intervention areas. These need to be formally committed. Financing of a program needs to be confirmed prior to startup to ensure a coherent and definite financing plan. As a result an uncertainty in pledged amounts will affect the programmatic implementation of EPIII. The activities to be financed by donors also need to be aligned with the country's national priorities.

8.2 Long-term sustainability of national institutions

A multi stakeholder approach inviting participation of various players in the implementation of EP III may pose a problem in terms of sustainability and viability of implementing agencies created to fill the institutional gap stated during development of Malagasy Environment Action Plan.

8.3 Interdependence of policies, strategies, programs and projects

Lack of ability to achieve development goals and possible failure of other project and programs may compromise the efforts focused upon by the Environment Program. As a result the populations will revert back to unsustainable practices which remain as the last resort for fall back.

Conclusion

The GoM reiterated its willingness to encourage and promote effective management of Madagascar's environment and decided to continue the implementation of the Environment Program in its third phase, as of July 1, 2003. Recognizing its wealth of biological diversity and of human actions which lead to negative impacts on the environment including its unique biodiversity, the GoM aims to implement environmental actions in line with the international agreements and conventions on 'sustainable development and poverty reduction' that have been adopted globally.

To that end, GoM founded its development policy based on the on trilogy theory 'Economy – Social – Good governance'. Recognising that the basic foundations of sustainability rely on notions of balance and renewal of ecosystems and natural resources, as well as on adoption of an environmental agenda, EP III will focus upon ecosystems and their sustainable potential for use in the context of poverty reduction.

The letter of policy is founded based upon the Malagasy Environment Charter and reaffirms commitments by the GoM to implement environmental actions for sustainable development leading to benefits for the Malagasy population. It also provides an opportunity for implementing a programmatic approach funded by multiple financiers.

ACRONYMS

ANAE	Association Nationale d'Actions Environnementales
ANGAP	Association Nationale pour la Gestion des Aires Protégées
CFSIGE	Centre de Formation aux Sciences de l'Information Géographique et de l'Environnement
CIME	Conseil Inter-Ministériel pour l'Environnement
CNE	Conseil National pour l'Environnement
COAP	Code des Aires Protégées
FTM	Foibe Taosarintanin'i Madagasikara (Institut Géographique National)
GELOSE	Gestion Locale Sécurisée
MECIE	Mise en Compatibilité des Investissements avec l'Environnement
Ministère	Ministère chargé de l'Environnement, Eaux et Forêts chargé de l'Environnement
NODE	Noyau Dur Environnemental
ONE	Office National pour l'Environnement
ONG	Organisme Non Gouvernemental
PADR	Plan d'Actions pour le Développement Rural
PAE	Plan d'Action Environnemental
PAS	Programme d'Ajustement Structurel
PE-1	Programme Environnemental phase 1
PE-2	Programme Environnemental phase 2
PE-3	Programme Environnemental phase 3
PIB	Produit Intérieur Brut
PIP	Programme d'Investissements Publics
PMPS	Projet Multisectoriel pour la Prévention du VIH/SIDA
PRSP	Programme de Réforme du Secteur Public
PSDR	Programme de Soutien au Développement Rural
PST	Programme Sectoriel des Transports
SAGE	Service d'Appui à la Gestion de l'Environnement

Additional Annex 12 SOCIAL AND ENVIRONMENTAL ANALYSIS

MADAGASCAR: Third Environment Program Support Project

Background:

With its surface area of 586,760 sq km, Madagascar is the fourth biggest island worldwide. It extends into the ocean through a continental plateau that is large on the western coast (45 - 100 km) but narrow on the eastern coast (< 20km).

Its relief is characterized by asymmetry in the axis of its length. Such asymmetry, combined with the effects of two winds, trade wind and monsoon, is at the origin of its deep regional climatic subdivisions.

At the geological level, two fundamental types of substrata can be observed. (i) Two third of the island are made of crystalline basements, very ancient rocks that have experienced several metamorphic phenomena, and (ii) one third is made by more recent sedimentary rocks.

Soils, which are the response of evolving geological substrata, are of two main types: *ferruginous soils for sedimentary rocks, and ferralitical soils for crystalline basement.*

Thanks to its physical, morphological and lithological context, Madagascar has considerable but poorly distributed water resources over the territory.

Marine and coastal ecosystems include natural rich and diversified environments:

- *Coral reefs*, over a length of 3,000 km, which develop in warm and clear water;
- *Mangrove* forest stands on warm marine shores, to brackish waters that are not reached by waves; the most important ones are located in the Western part of the country;
- *Wetlands*, distributed along the coastline in which the biodiversity is still little known;
- *Coastline forests*, in the background of mangroves, sheltering a rich biodiversity.

The Malagasy vegetation is highly diversified; its distribution matches physical units. It is characterized by extremely fragile biodiversity. Developing almost in a closed pattern, species are "insular"; the biodiversity does not stand deep disruptions of ecosystems. Unfortunately, over 200,000 ha of natural forests are cut or burnt every year for different namely anthropogenic reasons. The natural forest has a very rich fauna with a very high rate of endemism. But such fauna wealth runs risks of decreasing or disappearing with continual destruction of ecosystems of the big island. Such exceptional physical and natural Malagasy environment presents a threatening deterioration because of pressures caused by various factors.

At the social and economic level, the Malagasy population, namely rural population and the most deprived layers, lives under acute poverty conditions in spite of the results obtained during periods of uninterrupted application of Structural Adjustment Program, initiated for over twenty years, which have indicated growth rates higher than the population growth rates— annual growth is 3.5% for the period of 1988 – 1990 and 4.3% for the period between 1997 – 2000. In fact, per capita Gross Domestic Product (GDP) rose from US\$ 383 in 1960 to US\$ 220 in 1999, and to US\$ 200 in 2000. Recent estimates indicate that 75% of Malagasy live below the poverty threshold and that 59% are destitute. This statement ranks Madagascar among the fifteen (15) poorest countries worldwide. The increase of population's poverty and the environment, which has been accelerated during the same period, go hand in hand.

To deal with such issues, Madagascar adopted in 1990 the Malagasy Environment Charter, which sets the overall framework for the implementation the Environment policy. The Environmental Action Plan (EAP), which is scheduled to be implemented over a period of at least 15 years, was started. It seeks the « reconciliation of man with his environment ». The first phase of EAP (EP 1) started in 1990 for a period of five (5) years focused on setting up institutional devices and was driven to tackling urgent issues. The second phase, EP 2 (1997 – 2002) sought, on one hand, to pursue actions conducted or initiated since EP 1, on the other hand, to integrate the Environment Program into the national development policies and strategies framework.

Environmental Program Phase III (EP3)

The third phase (EP 3) was formulated based on the results obtained during the first two phases of the Environmental Action Plan. It intends to consolidate the lessons learned from the previous phases aiming essentially at “Conserving and valuing the importance and quality of natural resources” in order to secure a sustainable economic growth and a better life quality ».

For this purpose, two major objectives will be pursued:

- Methods of sustainable management of renewable natural resources and of biodiversity conservation are adopted and owned by population,
- The nationwide sustainability of environmental and natural resources management is ensured.

To such an end, the Government has developed a logical framework and the main areas involved in EP 3 are as follows:

- Development actions in priority intervention areas;
- Forests management;
- Management of Protected Areas and Conservation Sites;
- Management of marine and coastal ecosystems;
- Development of tools, policies and information for management of environment;
- Development of Sustainable financing systems;
- Involving population in general in the daily management of environment

EP 3 actions and activities will affect and interest, among others, rural populations, and the most deprived layers, indigenous populations located in the program’s intervention and influence areas. The program also reaches forest operators, small handicraft operators and economic operators. A significant presence of women and children in groups and populations involved is noticed.

The program’s intervention areas will cover the whole national territory in its normative aspects and in the aspects of environmental impact assessment legislation, as well as in the application of international conventions to which Madagascar has adhered. However, efforts will be focused in areas which fulfil the following four (04) criteria: (i) importance of biodiversity, (ii) extent of pressures, (iii) lessons learnt from the first two phases of EAP, and (iv) the existence of local and/or regional dynamic, which are all found in agro-ecosystems, non protected forest areas, Protected Land Areas, marine and coastal ecosystems, and wetlands. In other words, 527 out of the existing 1390 communes will be involved.

Furthermore, the implementation of EP 3 will rely on the strategies set forth in the National Letter of Environmental Policy, in which the main points are:

- Compliance with national political and economical priorities;

- Sustainability of environment management;
- Synergy among the different components of the Environment Program;
- Partnership with the other sectoral programs;
- Partnership with decentralized territory authorities;
- Participatory management and transfer of natural resource management;
- Intervention based on contract-program and result-based contract;
- The importance of the Involvement of private sector and the civil society.

EP 3 will be implemented under technical supervision of the Ministry in charge of the Environment, Water and Forests, with the participation of several actors at all levels, namely of national institutions involved, communes and grassroots communities. A strong work and synergy interrelationship with national and sectoral programs / projects will, among others, focus on poverty reduction, rural development, tourism, transport, energy and mine, fisheries and aquaculture. EP 3 also provides for active participation of civil society and private sector

The Program's institutional arrangement

The institutional arrangement of the program is based on project management principles summed up as follows:

- Borrower: The Government, who is a signatory of Grant and Credit Agreements, is the work manager for the program. Financial supervision will be ensured by the Ministry of the Environment, Water and Forests;
- Executing entities: In order to better manage the program and the partner institutions, an EP 3 Coordination Unit located within the General Coordination of Projects (CGP) of the Ministry will be set up. Its role will essentially consist in technical and financial management of the program log frame and EP 3 monitoring evaluation;
- Project Management: Entrusted to organizations that have a national mission, such as Direction Générale des Eaux et Forêts (DGEF), Direction Générale de l'Environnement (DGE), Office National pour l'Environnement (ONE), Association Nationale pour la Gestion des Aires Protégées (ANGAP);
- Other partners for the Project management and/or Service Providers: Communes, NGOs, Associations, service providers...

Program funding

The total cost of program is estimated at USD 155 million. This amount will be supported by the contributions of the following entities: Government of Madagascar, and multilateral bilateral donors, and private entities, international NGOs, and private institutions. Implementation and monitoring and evaluation costs of the mitigation measures of the potential negative impacts of the EP 3 activities are estimated and consolidated in the execution costs of each activity.

The Program's scope, effects and impacts

The effects and impacts of the EP3 are considerable and this is why efforts will be focused on targeted communes in order to maximize the use of available funds and the implementation of actions and activities of natural resources degradation risks mitigation. will further seek to:

- Reduce incidence of "tavy" on sensitive habitats;
- Decrease pressures in intervention areas;

- Maintain forest and lake areas at their 2001 level;
- Attain overall efficiency index of protected areas that is equal to 70% and to 45% for conservation sites;
- Reduce destruction rate among mangroves and coral reefs;
- Enhance ownership degree among target groups;
- Cover at least 20% of financing needs at the end of EP 3 through new mechanisms;
- Bring to more than 80% the satisfaction rate among actors about forest management and environment management.

EP 3 is expected to bring out benefits at local, national, and global levels. Their impacts spread over time and respond to sustainability concerns. They are, among others:

- At the economic level: (i) equitable sharing of proceeds from commercial exploitation of non woody forest products and valorisation of industries, in particular medicinal plants; (ii) increase of agricultural production fairly substantial increase of production and, therefore, improvement of household economic life; (iii) positive economic impacts provided by eco tourism development on populations neighbouring Protected Areas, and for the private sector; (iv) environmental services, namely hydrological services, which allow to maintain the productivity of 600,000 hectares of irrigated perimeters; (v) economic benefits amounting to USD 245 million, 53% of which come from decreasing sedimentation in irrigated perimeters. (Present Benefits to over 15 years with a 10% rate) (*Aide-mémoire PE3 – Mission d'appui à l'analyse économique et financière du programme - 20 mars - 8 mai 2003 - Jean Christophe Carret.*). Generally, EP 3 through its different activities, seeks to contribute in the increase of GDP and the improvement of life conditions.
- In terms of Behavior Changing: acquisition of the environmental reflex among the population in general - communities, public institutions, civil society and private sector – is essential to ensure an environmental management with the contribution of everyone and to allow actions and activities of least costs, which have very probably sustainable.
- In terms of biodiversity. A quality management of the biodiversity will ensure the contribution to the conservation and valorisation of a unique assets

Environmental Management Plan (EMP)

A priori, the phase 3 Environment Program aims at conservation actions. In that respect, EP3 seeks to minimize its negative impacts on biophysical, economic, and social environments while implementing its activities. In addition, it seeks to ensure that the other sectors integrate the environmental dimension and apply mitigation measures in their activities in case of environmental bias. The environmental analysis conducted identified potentially negative effects/impacts that might occur while implementing EP 3. Such potentially negative effects/impacts are distributed into three categories resulting from superimposition of categorization by the World Bank and of national categorization of MECIE Decree n 99-954 of December 15, 1999. (Mise en Compatibilité des Investissements avec l'Environnement).

The Government of Madagascar committed to make ALL efforts to ensure that the populations will not have to move away after the creation of Protected Areas, Conservation sites and Land reserves. Such efforts consist in keeping the populations in their residence area without having to go somewhere else to find the natural resources that they need to survive, and to be able to exploit said natural resources while protecting the environment. Despite such measures taken, the Process Framework has been developed to prevent and minimize potential negative impacts translated into involuntary economic and social move of

the population for all activities related to the creation of Protected Areas, conservation sites, land reserve and limitation of Protected areas. These activities are classified in the category 2, but provide for integrated impact study (See table 1 below) in order to collect and be aware of preoccupations of directly affected population and to be able to intervene at. Thus , EP 3 activities are classified in the moderated and minor impact categories 2 and 3.

Category 2 impacts analysis

On the contrary, moderated negative category 2 effects/impacts are raised in the creation and classification of Protected Areas, conservation sites and land reserves, as well as in the development of ecotourism. For the creation of Protected Areas, a Process Framework (see annex of the Environment Management Plan) was established as tools according to the World Bank's guidelines, in order to ensure full participation of the populations living in and around the AP in the areas delimitation, as well as the development, implementation, monitoring and evaluation of proposed activities.

There exist technical, institutional, and legal mitigation tools and measures and they have been applied during the previous phases of the environment program. They have allowed mitigating or minimizing some negative effects/impacts related to the category 2. These are namely: the code of Protected Areas (COAP) (*law n 2001-005 of February 21, 2001*) and its application text, the Decree MECIE, the Manual for Creation of Protected Areas, the Management Plan of the Protected Area Network (Plan GRAP). The Development, and Management Plans of each Protected Area include zoning of the area. The Process framework will be added to the above existing tools in order to prevent impacts on the local and indigenous populations' interests with regard all activities the category 2 activities. In addition, implementing this category will consist of what follows:

- Conducting an integrated environmental impact assessment with an option between EIE and PREE according to the target of the activity (see table 1 below), which includes a phase of consultation / information of the public.
- Conducting impact study according to participatory approach in order to identify the major occupations of the population that is directly affected;
- Realizing the preconditions to conducting activities that would minimize the major negative potential effect/impact identified during the screening carried out during the environmental analysis of EP 3.

Table No 1 presents the steps, as well as the entities involved in the implementation of an integrated impact study:

Table 1: Integrated Impact Study Process

	EIE	PREE	Integration of environmental dimension in Bidding Documents
Selection of environmental study type	Association Nationale pour la Gestion des Aires Protégées (ANGAP) Office National pour l'Environnement (ONE) Ministère de l'Environnement, des Eaux et Forêts (MINENVEEF)		
TOR (terms of reference)	ANGAP – ONE - MINENVEF	ANGAP - MINENVEF	ANGAP

Conduct of environmental study	ANGAP – Service providers	ANGAP	
Assessment of environmental study	Technical Assessment Committee (CTE)	MINENVEF – Ministry in charge of Tourism	
Implementation of EMP	ANGAP – Service providers	ANGAP – Service providers	Service providers
Monitoring	MINENVEF – ONE - ANGAP -	MINENVEF - Ministry in charge of Tourism	ANGAP
Control and assessment	MINENVEF	MINENVEF	ANGAP

The use of tools is fundamental for the program to minimize or eliminate category 2 effects/impacts provided that related procedures and measures are scrupulously applied.

Cases of the Mikea forests

Population living in and around the Mikea Forests in the south west of Madagascar is an „indigenous population“ according to the World Bank’s Operational Guidelines 4.20. In fact, Mikea as known as socially, economically and culturally different from other tribes in the malagasy society, vulnerable and neglected by the successive administrative authorities, and have no means to defend their own lands. Mikea used to practice, and in certain areas continue to practise subsistence farming, and live mainly on forest natural resources through fishing, hunting and gathering. The objective of this « Strategic framework for the Development of the Mikea Populations » (CSPDM) is to define required basis for the elaboration of a Development Plan of the Mikea Populations (PDPM), corresponding to Indigenous Populations Development Plan required by the Operational Guidelines 4.20. Such PDPM should be developed by and for the Mikea and will define the program and activities that Mikea consider as profitable for them in terms of social, economic and cultural development. PDPM could eventually result in the creation of Protected Areas (PA) and be implemented under the EP 3 in Madagascar.

A Development Strategic Framework is a pre-condition to a Development Plan

While a Plan is usually prepared in compliance with the World Bank’s D.O 4.20, it is necessary for the case of the Mikea populations to start with a strategic framework which will serve as bases and define the required steps for the development of harmonious, realistic and feasible “Plan. Such choice has been dictated by the following constraints:

The research team has not had enough time to assimilate the notion of “indigenous population”, which is new to them, particularly when it comes to the “development of the indigenous population” in the sense of preservation of a cultural unity and pursuing a development strategy for a unique ethnic group, which is slightly different from the usual notion of development. .

The total amount of time assigned to the elaboration of the Development Plan was 8 weeks, divided in two phases of 4 weeks, and spaced out a month apart. Compared to the content recommended by the Operational Guidelines, such duration was too short.

Living in the forest, the Mikea respond to the definition of « indigenous population » have had a certain distrust towards foreigners and State representatives, and therefore, would not confide themselves to them easily. The research team would therefore need more time to establish mutual trust and to better apprehend the living method and aspirations.

The CSDPM will therefore include: (i) an ethnographic, socio-economic, organizational and cultural presentation of the Mikea society and populations; (ii) the legal context on land rights in Madagascar as

well as their relevance to the Mikea populations; (iii) a strategy for the consultation and participation of the Mikea to the development of the PDPM; (iv) an institutional evaluation of the different partners associated to support Mikea populations in the development of PDPM; and (v) an implementation calendar as well as estimative budget for the development of the PDPM.

The PDPM is a pre-condition to determine the vocation to assign to the Mikea

The Government has committed not to determine the vocation of the Mikea forest without the development of the PDPM. Under the development of PDPM, discussions on the negative or positive impacts of the different options, will be conducted, and that the PDPM is to guarantee that the choice that has been made does not have harmful effects on the Mikea populations and that the latter draw economic and social benefits compatible with their culture. Whatever the vocation that would be chosen to be reflecting the Mikea populations' aspirations, the Government has committed to ensure that PDPM implementation through the development of EP 3 funding guarantees the preservation and development of the unique but vulnerable human capital that is the indigenous Mikea population. A budget of US\$ 730.000 has been allocated to fund the preparation and execution of PDPM

Category 3 minor impacts analysis

The other potential negative effects/impacts identified during the screening of activities of the logical framework that are not listed among the category 2 have been classified in the category 3 qualified as minor effects. Under category 3, it is necessary to take into account the integration of gender aspects in all the Program's implementation activities. Furthermore, the effective execution of the mainstreaming activities at the level of specific objectives 21, 22, 23 of the logical framework of the EP 3, particularly, the development of aid tools to decision-making, the diffusion of information, education / training of the people, institutional capacity building, will enforce the application of mitigation measures. To this regard, a social mobilization and an adoption of attitudes favorable to the environment are expected to ensure sustainability of the actions.

Charter of responsibility and Impacts Monitoring and Evaluation

At the institutional level, result-based contract modalities and principles are adopted for EP 3. The measures and responsibilities that fall to each entity will be specified in said contracts. For that purpose, it is important to have environmental specialists within entities working in EP 3, to build their technical capacities in order to identify in time the potential negative effects/impacts and to find appropriate solutions. Responsibilities in implementation of mitigation measures are summarized in hereafter Table 2:

Table 2: Charter of responsibilities

Institution	Responsibility for implementation of EP 3	Responsibility for implementation of mitigation measures: <u>Formulation and execution</u>	Responsibility for implementation of mitigation measures: <u>Monitoring</u>	Responsibility for implementation of mitigation measures: <u>Assessment and Control</u>
Borrower	- Government: Signatory of Grant and Credit Agreements - Financial supervision: Ministry in charge of Finance - Technical supervision:	Monitoring with the state departments	Monitoring with the state departments	- Assessment and Control of measures taken for execution of activities

	MINENVEF			
Executing entities	- Coordination Unit: technical and financial management of the logical framework of the program - Monitoring-Evaluation of EP 3	- Impact Assessment Studies (EIE)	Monitoring with the unit executives and the state departments	
Project Management	- Daily management in specific objectives of the logical framework: DGEF (1), DGE (2), ONE, ANGAP	Formulation of measures: - Screening of activities - Promoter of environmental impact studies (EIE) - Formulation and integration of mitigation and/or environmental measures in bidding documents - Assessment of PREE studies	- Monitoring of implementation of each activity and of integration of environmental dimension and measures in each activity	- Assessment and Control of achievement of the activity and of measures taken for its execution Participation in control and surveillance
Service Providers	Communes, NGOs, Associations, private sector.			
Service Providers	- Achievement of activities / actions	Achievement: - Implementation of measures advocated during execution	- Set up the system of participation by beneficiaries	Set up the system of participation in control and surveillance
Recipients	- Achievement of activities / actions which fall on them	Achievement: - - Implementation of measures which fall on them	- Participation in monitoring the setting up of measures	Surveillances and participation in controls

DGEF(1) : Direction Générale des Eaux et Forêts
DGE(2) : Direction Générale de l'Environnement

Mitigation measures are part of EP 3 activities and are listed in the Program's Implementation Manual. In that respect, they integrate the environmental, economic, and social parameters in the monitoring and evaluation system of EP 3. The specifications document provides the respective measures, roles, and responsibilities of stakeholders involved, namely the grassroots communities on the monitoring of the application of indicated measures and parameters.

Finally, recommended measures both consolidate and capitalize the positive effects/impacts secured during the first two phases of the environmental program, as well as those provided for in EP 3. They contribute to maintaining the vital natural resources for sustainable development and poverty reduction of Madagascar.

Additional Annex 13: GEF - INCREMENTAL COST ANALYSIS MADAGASCAR: Third Environment Program Support Project

1. National Development Objectives:

The over-riding National Development Objectives for Madagascar are: poverty alleviation, stimulation of sustainable economic growth, and creation of sustainable livelihoods. A Poverty Reduction Strategy Paper (PRSP) has been drafted, providing a blueprint for achieving these Objectives. The Government of Madagascar (GoM) has recognized the importance of environmental protection activities in pursuing its development agenda, both because the fragile nature of Madagascar's ecosystems circumscribes development options, but also because the country's rich natural resources could, if wisely managed, provide a means for achieving sustainable development objectives.

The Government of Madagascar (GoM) adopted the Madagascar Environment Action Plan (NEAP) in 1989, to give greater coherence to efforts to manage the natural environment. The Programme Goal was defined as: 'natural resources are conserved and wisely utilised in support of sustainable economic development and a better quality of life'. The Programme was designed to be implemented over fifteen years in three phases. Now entering its third and final phase, NEAP is the key vehicle for advancing the GoM's national conservation objectives.

2. Global Environmental Objectives:

Madagascar's rich eco-regions constitute some of the World's highest conservation priorities. The Island is characterised as a conservation 'hotspot' on account of its exceptional species richness and habitat diversity and the scale of anthropogenic pressures facing its biota. A unique, insular flora and fauna has evolved on the Island, following millions of years of isolation from continental landmasses. The country's ecosystems are however characterised by high fragility, meaning that they are particularly susceptible to degradation even where human population densities are low. There is an urgent need to contain human-induced threats to ecological integrity. But as an LDC, Madagascar lacks the wherewithal to fund the full array of actions needed to meet this challenge; absent international assistance there is a high risk that key global environmental benefits derived from the Island's biodiversity will eventually be extinguished.

The Global Environmental Objectives of the project are to protect key global environment benefits attached to the Island's biodiversity, and create conditions for sustaining conservation actions. The project will secure GEF incremental funding to complement other financing sourced from the GoM and donor community to implement phase III of NEAP (EP III). Funding will be dedicated in support of the two Development Objectives specified by the GoM for EP III: DO1: The biodiversity and renewable natural resources of representative eco-regions is conserved and managed on a sustainable footing with active multi-stakeholder participation; and DO2: The systemic framework for sustainable environmental management is further strengthened through the incorporation of management objectives into public policy-making and investments.

3. Systems Boundary:

The principal threats to biodiversity in Madagascar stem from habitat conversion, human-induced fires and unsustainable offtakes of certain commercially important wild resources. A comprehensive range of interventions will be spearheaded under EP III to mitigate these pressures. Baseline and incremental costs

for the Programme have been estimated within the scope of these interventions over the period 2004-2009 (5 years) for 530 of Madagascar's 1563 provinces, which are the target of NEAP interventions. It should be noted that while EP III will focus on 530 Provinces, GEF support to the Programme will focus on a more limited number of areas, targeting key elements of the PA system. . Five activity bundles have been set for the purpose of assessing the incremental costs and baseline—corresponding with the agreed EP III Results Framework prepared by the Government of Madagascar. The baseline includes a range of activities that, while an integral part of EP III, are justified in terms of the country's sustainable development objectives. A number of development programmes that will contribute to environmental objectives, but which are not formally integrated into EP III are identified and costed, but are not specifically included in the baseline assessment. These initiatives are listed as Associated Financing. Associated projects would be carefully coordinated with EP III through the Institutional and Programmatic Coordination device provided by the Multi Donor Secretariat for Rural Development and Environment. . Incremental activities are classed as initiatives, within EP III, that will generate mainly global benefits and that will not be pursued as part of the national development agenda if the decision were to be based solely on the domestic cost-benefit calculus.

4. Baseline:

Sustainable Development: The total cost of the baseline for sustainable development activities under EP III is US\$ 23.5 million. USAID will appropriate US\$ 8.2 million for sustainable agricultural intensification; development of community associations, and education at three sites in the humid forest (Ranomafana-Andringitra Corridor, Andasibe- Zahamena Corridor and Anosy). A further US\$ 3 million will be allocated to improve marketing arrangements for agricultural produce. International NGOs will allocate US\$ 1.5 million for environmentally compatible development schemes in conservation corridors, to reduce pressures on natural resources. The French Government will appropriate US\$ 2.8 million in support of environmentally compatible economic development in the Mahafaly Plateau and Lac Alaotra. Finally the European Union will contribute US\$ 8 million to intensify agriculture in the buffer zones surrounding two key PAs: Bemaraha and Mananara Nord.

Associated Financing (US\$ 63 m These estimates count development assistance within the EP III focus areas (forest/ coastal ecosystems)/ Provinces.) includes an allocation (US\$ 5 m) from USAID to improve farming systems on the Eastern Escarpment of Madagascar; an estimated US\$ 30 m from the World Bank for agriculture support to EP III target areas under the Madagascar Rural Development Support Project; US\$ 15 from IFAD for micro credit/ agricultural support activities in two EP III target zones, US\$ 8 million from the French Government for farming systems research and strengthening farming extension services, and US\$ 5 million from UNDP for complementary poverty alleviation initiatives.

Sustainable Forest Management: The total cost of the baseline for this component is US\$ 46 m. The total expected Government budgetary outlay on forest and water sector management is estimated at US\$ 7.5 m. WB-IDA will provide funding support amounting to US\$ 14.5 m to improve forest sector management; activities will strengthen regulatory enforcement and permitting systems at the local level, support the formulation and implementation of forest zoning and management plans, contribute to the development of new multiple use conservation sites to expand the range of forest management systems, develop market based instruments to uncover and capture financial benefits from forest management, and spearhead the transfer of management rights for forest resources to local communities. IDA will appropriate a further US\$ 3.5 m for reforestation activities and to improve the efficiency of charcoal production, thus reducing pressures on natural forests, and particularly the Western Dry Forest imposed by household energy demands. USAID will provide a total outlay of US\$ 11.3 m to finance capacity building activities to strengthen the operational accountability of the Forest Service (US\$ 4.3 m); to establish two ecological Corridors in the Moist Forest Biome (US\$ 4 million) strengthen management of private sector forest

plantations (US\$ 2 m) and for a site-based reforestation demonstration (US\$ 1 m). Tany Meva will invest US\$ 2 million in reforestation initiatives, and efforts to improve the sustainability of charcoal production at the commune level. CI will provide US\$ 1.8 m for policy services to the forestry sector, and for the conservation of vital forest corridors. GTZ will appropriate US\$ 2 m for local schemes in support of sustainable forest management. The Government of France will allocate funding of approximately US\$ 3.4 million for forestry research, forest management at Alaotra Lac and the transfer of forest management rights to communities. This substantial investment in strengthening forest sector management at the national, regional and local levels is expected to make a substantive contribution to reducing anthropogenic pressures on the forest resource, and improving management accountability and transparency.

Management of Protected Areas and Support Zones: The total baseline is US\$ 11.5 m, broken down as follows:

(a) Protected Area Management: The planned government budget appropriation to cover the core costs of PA administration is estimated at US\$ 7 million. This will cover the costs of staff salaries and core operations at 37 existing sites and new PAs established expressly to protect biodiversity, in addition to system-wide planning, monitoring, enforcement, and ancillary PA management functions.

(b) Natural Resource Management in PA Support Zones: Tany Meva will supply US\$ 1 million in funding to assist with the further transfer of management rights over natural resources to communities in buffer areas and PA support zones. USAID will provide funding of US\$ 2 million to improve market linkages for natural resources, improve market access and strengthen micro-enterprises. This funding is intended to uncover business opportunities for sustainable natural resource management within PA buffer areas and support zones, and should contribute to the definition of incentives for PA management. The Government of Madagascar will provide US\$ 1.5 million to cover the costs of supporting community based natural resource management.

Coastal and Marine Resources Management: FAC would provide funding amounting to US\$ 1.7 million to strengthen traditional coastal fishery management activities. WWF and WCS would appropriate US\$ 3.25 million for integrated coastal zone management in ecologically sensitive areas outside PAs. The Government of Madagascar will contribute US\$ 1 million for artisanal fisheries support. The total cost of the baseline for this component is US\$ 5.95 million.

Associated financing is estimated at US\$ 20 million, of which, US\$10 million is for GoM funded fisheries management services. Additionally, US\$ 10 million from the African Development Bank (ADB) will meet the costs towards improved fishing equipment and associated development activities for fishing communities in the coastal villages.

Environmental Mainstreaming: The total baseline allocation for this component amounts to US\$ 15.9 million. The GoM would invest US\$ 1.5 million towards improving environmental impact assessment and policy making. USAID would appropriate US\$ 1.2 million to strengthen the environmental impact assessment capacities of ONE, US\$ 1.25 million to improve governance systems, for environmental regulation and for associated civil society advocacy activities, and US\$ 0.8 to assist the GoM to coordinate donor-sponsored interventions under EP III. WB-IDA would make an appropriation of US\$ 8.5 million to strengthen environmental legislation, environmental management coordination, and improve information systems to record and address malfeasance at the local level. CI would provide funds for awareness raising, and policy advocacy (US\$ 0.5 million).

USAID would invest US\$ 1.25 million in establishing a multi-sectoral information service for Madagascar,

providing a locus for coordinating information exchange. The funding would establish the hardware and support systems for knowledge management. UNDP would provide funding amounting to US\$ 0.9 m for knowledge management services aimed at policy makers, to assure better integration of natural resource management objectives into poverty alleviation, livelihood improvement and efforts to strengthen governance.

5. Incremental Activities to Generate Global Benefits

The GEF, WB-IDA, UNDP and various Bilateral donors and NGOs would provide financing to cover the incremental costs of select EP III interventions under the Protected Areas Management; and Mainstreaming components.

Protected Area Management:

(a) Core Protected Areas

The GEF would provide funding through the WB to assist the GoM to realise priority objectives of the Madagascar Protected Area Plan (Plan de Gestion du Réseau des Aires Protégées or Plan GRAP). Funding would be allocated to targeted PAs, to deliver sustainable and replicable on-the-ground impacts. GEF funding would be allocated to the following interventions:

[i] US\$ 1.5 million to strengthen the PA System by: (a) Status modification of three protected areas; (b) delineation of 8 protected areas, (c) creating 1 new terrestrial PA and 2 marine Parks, (d) change in borders of nine protected areas.

[ii] US\$ 6.5 million to strengthen PA management functions in 27 PAs to be funded under the project, including enforcement, monitoring, development of Comités Régionaux d’Orientation to serve as a device for coordinating PA management and bio-regional scale activities, and the development of infrastructure. This sub-component would receive US\$ 3.0 million in IDA funding;

[iii] US\$ 1 million to finance the incremental costs of overcoming barriers to the advancement of eco-tourism in existing and new PA sites selected for GEF/ WB support (to be co-financed by IDA: US\$ 3 million). These barriers include: absence of suitable tourism products, including trails and interpretation facilities; lack of articulation of PAs in tourism markets; and development of protocols and infrastructure to engender responsible tourism. Barrier removal is expected to increase visitation and gate fee returns, contributing to an improvement in financial sustainability.

Several bilateral donors and NGOs have committed incremental funding to complement the GEF/ IDA investment in PA’s. USAID would provide US\$ 2 million to fund capacity building at activities in ANGAP’s headquarters and Regional Offices to improve operational planning systems, and strengthen management capabilities. FAC would provide US\$ 0.25 million in funding for management of the Mahafaly Plateau PA. KfW: would commit US\$ 5 million for PA management at three sites (Ankarafantsika; Andringitra; Marojejy). WCS would provide funding of US\$ 1.25 million towards management of the Masoala PA. Other NGOs will contribute a further US\$ 1 m for PA management activities. The EU would provide funding for operations in two PAs: Bemaraha and Mananara Nord (US\$ 2 million)

The WB would further allocate US\$ 7.5 million towards the development and operationalisation of a PA Trust Fund. WB funding would be allocated to wards set up and endowment costs. Co-funding has been committed by WWF and CI (US\$ 1 million each in endowment funding) and from KfW (US\$ 4.2 million in sinking funds KfW would provide further funding of US\$ 460,000 per year for 15 years

through a debt swap following the cessation of EP III. This funding lies outside the systems boundary and is not counted in the baseline).

(b) NRM in PA Support Zones

The GEF would provide funding of US\$ 4.5 million through UNDP to finance the incremental costs of barrier removal to effect sustainable natural wild resource harvests in buffer areas and protected areas in priority protected areas (also supported by the WB-GEF). Activities would address the threats posed to biodiversity from the over harvest of certain commercially important species (particularly wildlife and plants for international trade); as well as create an incentive for local communities to better manage ecosystems and protect biodiversity. GEF funded Project activities would focus specifically on the Western dry forest/ spiny forest Ecotone, Mangrove Ecosystems and Coral Reefs: selected specifically owing to the gaps in management knowhow in these eco-regions, and because NRM demonstrations are being funded by other financiers in the moist forest biome in Eastern Madagascar. The following barriers will be addressed: a) need to establish proven techniques for ensuring regeneration of what is harvested and define thresholds for sustainable off-take; b) definition of what are the most appropriate community-based institutions for SNRM; c) need to improve proportion of resource value received at the farm gate, and; d) improve capacities of community institutions for SNRM.

USAID would appropriate US\$ 3 million for NRM demonstration activities at two sites in PA support zones/ corridors in the moist forest A further US\$ 0.6 million would be allocated to strengthen controls over the trade in CITES listed species. WWF would appropriate an additional US\$ 0.8 million for NRM activities in the eco-region, plus an additional US\$ 1 million for activities targeted at the Spiny Forest Eco-region: complementing core PA management interventions. These initiatives are wholly complementary to planned GEF investments in NRM.

Knowledge Management: UNDP would provide incremental financing amounting to US\$ 0.9 million to establish a networked community of practice to acquire and disseminate knowledge on sustainable natural resource management. The focus will be on integrating sustainable use activities into baseline development programs. Incremental funding would be allocated to disseminate information pertaining to the ecological, social and economic sustainability for Natural Resource Management in support of biodiversity conservation.

6. Incremental Costs and Benefits:

The baseline for Madagascar EP III has been costed at US\$ 102.35 million The baseline cost estimate omits baseline costs attached to complementary GEF interventions including the Critical Ecosystem Partnership Fund and Anjozorobe Forest Management Medium-Sized Project.. The Programme has been costed at US\$ 153.35 million. The GEF would fund incremental costs, amounting to US\$ 13.5 million. Co-financing of US\$ 139.85 million has been committed, constituting funding appropriated by the GoM, IAs, bilateral agencies and NGOs towards implementing EP III. GEF funding has been committed for activities generating clear global benefits, and would not be justified solely on account of domestic benefits. GEF funding for ecotourism and community based wild natural resource management is being committed to offset the positive incremental costs of barrier removal activities, to uncover long-term domestic benefit flows from natural resource conservation and utilization, to compensate for domestic management costs, and build capacities and know how to assure a paradigm shift to sustainable natural resource use from unsustainable exploitation practices Incremental costs for barrier removal are

positive owing 1: inability to compensate the high one time costs of effecting the paradigm shift from unsustainable to sustainable utilization from domestic benefits, ii. inability to recover costs from diffuse beneficiaries, and iii. a mismatch in the temporal incidence of costs and benefits. GEF funding is justified to defray the high one time costs associated with the acquisition of know how and development of local capacities to assure sustainable utilization of wild biological resources. Associated financing for sustainable development activities in areas of conservation interest has been conservatively valued at US\$ 83 million (this figure is not counted as direct co-financing).

Table 1: Incremental Cost Matrix

Component	Cost	Cost (in US\$)	Domestic Benefit	Global Benefit
Sustainable Development [No Direct Project Support]	Baseline	USAID: 11.2 FAC: 2.8 EU: 8 CI: 0.8 WWF: 0.3 WCS: 0.4	Improved farming systems enhance food security and rural livelihoods;	Targeted eco-development in critical ecosystems helps offset pressures for forest conversion to satisfy basic welfare needs;
		Total= 23.5		
Forest Ecosystem Management WB-IDA	Baseline	GoM: 7.5 WB-IDA: 18 USAID: 11.3 GTZ: 2 FAC: 3.4 Tany Meva: 2 CI: 1.8 Total = 46	Improved governance in the forest sector increases rent recovery and enhances economic growth and sustainability; energy source substitution provides new options for meeting long-term household energy needs;	Transfer of management rights to local communities addresses barriers to sustainable forest utilisation tied to common access; greater accountability abets rational allocation of forest rights, accounting for public goods; reduced pressure on critical eco-regions for wood fuel; carbon sequestration benefits maintained;
Protected Area System Management WB-IDA WB-GEF UNDP-GEF	Baseline	(a) <u>Core Protected Area</u> GoM: 7 Sub Total: 7 (b) <u>NRM in Support Zones</u> USAID: 2 m Tany Meva: 1 GoM: 1.5 m Sub Total= 4.5 m Total: 11.5	Diffuse long-term hydrological benefits and option values;	Partial conservation of globally significant biodiversity. Limited basic level ecosystem services maintained.
	Increment	(a) <u>Core Protected Area</u> GEF-WB: 9 WB-IDA: 13.5 USAID: 2 Kfw: 9.2 EU: 2 FAC: 0.25 WCS: 1.25 CI: 1.5 WWF: 1.5 Sub Total: 40.2 (b) <u>NRM in PA Support Zones</u> GEF-UNDP: 4.5	Improved watershed integrity in key areas; enhanced economic potential from tourism; Ecological sustainability of natural wild resource use is	PA management capacities are further enhanced, improving the delivery and sustainability of threat mitigation interventions; protection of existence values, carbon sequestration benefits and future use values; The removal of barriers to the unsustainable use of natural wild resources help mitigate

		USAID: 3.6 WWF: 1.8 Sub Total: 9.9 Total: 50.1	assured and option values for development in PA buffers are maintained;	threats to PAs and articulate tangible conservation incentives for local communities;
	Total Alternative	Total= 64.6		
Coastal Zone Protection [No Direct Project Support]	Baseline	FAC: US\$ 1.7 GoM: 1 WWF: 1 WCS:2.25 Total= 5.95	Improved livelihoods for coastal communities.	
Environmental Mainstreaming WB-IDA UNDP	Baseline	USAID: 4.5 WB-IDA: 8.5 UNDP:0.9 CI:0.5 GoM: 1.5 Total = 15.9	Negative externalities arising from unregulated economic development are avoided; Hardware and systems established for improved knowledge management and learning;	Improved institutional sustainability for environmental management and mechanisms for sustaining global benefits through integration of environment and development;
	Increment	UNDP: 0.9 Total: 0.9	Policy decisions founded on better information	Networked knowledge management systems promote replication of good conservation practices;
	Total Alternative	Total= 16.8		
Total	Baseline	US\$ 102.85		
	Increment GEF Non GEF	<i>US\$ 51</i> <i>US\$ 13.5</i> <i>US\$ 37.5</i>		
	Total Costs	<i>US\$ 153.85</i>		
	Associated Financing	<i>US\$ 83</i>		

Annex 13 A: Baseline Linkages to GEF and IA Programs and Activities

1. Past donor involvement related to biodiversity conservation and environmental protection within the framework of the NEAP:

Sustainable soil and water management	France, Germany, IFAD, Japan, Norway, Switzerland
Multiple-use Forest Ecosystem Management	France, Germany, Switzerland, USAID, WWF
National Parks and Tourism	EU, Germany, France, Netherlands, USAID, WWF, CI
Marine and coastal environment	UNDP, WWF, CI
Regional and local management	France, UNDP, USAID
Strategic activities	UNDP, USAID
Support activities	IFAD, France, USAID, WWF

2. Specific donor-supported projects related to biodiversity conservation and /or protected areas in Madagascar since 1997:

DONOR	PROJECT	BENEF.	Start	Finish	AMOUNT in million
GEF	Water and forest management	MEF	06/97	06/01	0.9 USD
GEF	Protected area management	ANGAP	06/97	06/01	2.6 USD
GEF	Regional capacity building	SAGE/ ONE	06/97	06/01	4.6 USD
GTZ	Efficient charcoal use to protect natural forest	GreenMad	04/97	03/06	17.5 DEM
GTZ	Integrated forest development	MEF	03/98	02/06	25.5 DEM
KfW + KfW	Andringitra & Marojejy National Park	WWF	06/98	06/03	11.0 DEM
KfW	Ankarafantsika Reserve	CI	06/97	06/02	13.0 DEM
KfW	Marovoay watershed management	Erosion Program	01/98	01/04	6.5 DEM
NORAD	Zombitse Reserve Management	WWF	01/98	12/02	6.4 NOK
WB	Sustainable use of natural resources	EP II	06/97	06/02	30.0 USD
French GEF (AFD)	Plateau Mahafaly ecosystem conservation	WWF	10/01	10/05	6.0 FRF
SCAC	Natural resource mgt. transfer and training	EP II	09/97	03/02	12.0 FRF
SCAC	Natural resource mgt land tenure	EP II	06/02	06/05	5.5 FRF
UNDP	Support to biodiversity and marine components	EP II	01/98	12/02	9.6 USD
EU	Community forest		01/0	12/03	1.1 EUR
EU	Bemaraha National Park conservation & dev.	ANGAP	12/95	06/00	0.9 EUR
EU	Bemaraha phase 2	ANGAP	06/00	12/05	5.0 EUR
USAID	Support to ecoregional process, ANGAP, MWF	Miray	07/98	06/02	10.0 USD
USAID	Support to ecoregional planning process, community forest mgt. and compatible economic development	Landscape Development Initiative	07/98	06/03	19.0 USD

USAID	MWF	MEF	06/90	06/02	5.5 USD
DGIS	MWF	MEF	06/97	06/04	1.5 USD

Additional Annex 14GEF STAP Roster Technical Review by Ghilleen T. Prance MADAGASCAR: Third Environment Program Support Project

Key Issues

1. Madagascar as a centre of biodiversity

Madagascar is rightly classified as a hotspot of biodiversity because of its unique flora and fauna with an extraordinary amount of endemism. At the same time, as outlined in the proposal, this biodiversity is severely threatened by destruction of the natural habitats of the plants and animals. This island country also harbors a most important marine community including many coral reefs. With about 85 percent of the plant species being endemic including five endemic families and also five endemic families of primates, the biodiversity of Madagascar is one of the most important in the world to conserve. Madagascar has been isolated from Africa for a very long time and so has evolved its own biodiversity. It is a textbook of evolution and so is of utmost importance to conservation of the world's genetic splendor as well as to theoretical science. There are also a great variety of ecosystems in the island from humid tropical rainforest and mangroves to semi-arid dry forest and a unique type of spiny thicket in the southwest. Not all of these ecosystems are well represented in the current, far too small, protected area network of the country. It is therefore highly important that there be active involvement of GEF and other conservation and development agencies in Madagascar. Unless viable programmes of conservation and sustainable use of the ecosystems are developed we are likely to lose many unusual species of animals and plants and the people of Madagascar are likely to continue to live in poverty.

2. Scientific and technical soundness of the proposal

In spite of its extreme poverty and political difficulties Madagascar was the first country in the African region to draw up a National Environmental Action Plan in 1989, prior to the creation of the Convention on Biological Diversity. This action plan has three phases and the third one (EPIII) is about to begin. This proposal is for GEF involvement in EPIII. GEF had minor involvement with the latter part EPI and more with EPII. The technical strength of this proposal is that it draws heavily on the lessons learned from and addresses the needs that developed out of the first two phases of the EP. The other strength is the impressive group of participants in the overall programme where GEF will contribute only 8 percent of the total budget. The contribution of NGOs to the project even exceeds the amount requested in this proposal. The fact that so many government (both national and foreign) and non-governmental organizations are willing to participate shows the importance they place on the biodiversity and the poverty issues of Madagascar. The National Office of the Environment (ONE) was created at the beginning of EPI. ONE has had its ups and downs, but has had a major structural reorganization that will prepare it better to carry out EPIII. It is good to see how the framework for this phase has been so strongly driven by key Malagasy institutions rather than externally by the donor sector. Annex 2 to the proposal, which gives the details of EPIII, is an impressive document that touches on the needs of all the critical ecosystems of the country. It presents an excellent balance between conservation, sustainable use of biodiversity and capacity building at local and governmental levels.

The main goal of GEF participation is in the area of Protected Area (PA) management. It has the right focus, i. e. strengthening PA conservation through demonstrations of sustainable use management in PA support and buffer zones and on capacity building and technical assistance. The combination of ecological monitoring, surveillance, setting up of conservation infrastructure and research on practices for biodiversity

conservation is likely to greatly assist the consolidation of the PA system that is emerging from EPs I and II. The GEF part of this phase has also selected two of the crucial ecosystems of Madagascar forests and marine ecosystems including mangrove and seagrass communities. The latter are comparatively neglected and in great need of attention to develop sustainable resource management systems. Various important environmental problems such as overuse of fuel wood and alien invasive species and fires are also addressed in this proposal. The key performance indicators outlined in the proposal are sound. However, it would be good to define more precisely the number of square kilometers to be maintained intact rather than xxx Sq. Kms as in Annex 1 of the proposal. The goal of increasing the area of land that is in PAs is obviously a vital one in Madagascar.

It is obvious that there has been a close collaboration between agencies of the Government of Madagascar with the World Bank and UNDP in the preparation of this well-integrated project. The various elements of EPIII are well proportioned between the diverse elements involved.

3. *Environmental benefits and drawbacks of the project.*

There are excellent environmental benefits from the proposal especially because it aims to make the protected areas of forest economically viable. This is a project that will ensure the direct involvement of local peoples in the process of both demarcation of reserves and in the management of natural resources. The main benefits will be the greater protection of the important terrestrial and marine fauna and flora of Madagascar and the improvement of the livelihood of local peoples. It is good to see that both forest and mangrove and coastal communities are targeted in this proposal. Coastal communities and fisheries have been rather neglected in Madagascar because of the obvious interest in all the unusual terrestrial mammals and plants. The dry forests and spiny forests targeted in the proposal are also particularly critical and fragile ecosystems. The proposed project will also contribute to carbon sequestration and to the improvement of tourist experience in the country.

There are no obvious drawbacks to the GEF proposal. I am glad to see that the proposers are fully aware of some of the difficulties that the project will face such as the disconnect between stated policies and regulations of the government of Madagascar and their capacity to monitor and ensure enforcement on the ground. They are fully aware of the lack of transparency and efficiency in the Ministry of Water and Forests. It seems that appropriate action is in place to address this problem. The critical assumptions given in Annex 1 seem to be realistic and acceptable given the current political situation in Madagascar. It is to be hoped that the new government of the country will collaborate to improve this area. The implementation of the GELOSE law that transfers the management rights of renewable natural resources to local communities is also likely to cause difficulties for the project. However, the proposal fully addresses these obstacles and they are not true drawbacks to what is a most important project for the people and the biodiversity of Madagascar.

4. *Context within the goals of GEF*

This project is well tailored to the overall goals of GEF. It is a project to protect biodiversity and to build the capacity of government officials and local peoples to conserve and manage sustainably the biological resources of the country. It addresses several goals of the Convention on Biological Diversity: conservation, sustainable use of the ecosystems and equitable benefit for the local population. It also has a major element of capacity building. The GEF participation focuses on forest and marine ecosystems which are key ones to the goals of GEF. This proposal builds well on GEF participation in the second phase of the Environmental action plan for Madagascar (EPII). It also supports other GEF financing of projects to the NGO Fanamby for the Anjorozone montane forests, to Birdlife International for work on critical wetland

habitats and to Madagascar through UNDP to prepare a National Capacity Self Assessment. Interactions between these initiatives and the proposed work will be beneficial and catalytic to each other. The project is well integrated into the national plans for conservation and sustainable development. The goals of the Madagascar Environment Action Plan to see that “natural resources are conserved and wisely utilized in support of sustainable economic development and a better quality of life” fit well into the goals of GEF. This project is much more appropriate to GEF’s goals than the alternative projects outlined on page 24 of the proposal because, as stated, it indeed takes a more integrated approach to conservation and development. The integration with other development agencies and with several NGOs is also exactly within the working procedures of GEF. The various elements to be funded by GEF are well placed and appropriate within the broader context of the National Environmental Action Plan. This is a project that seems to fit all key GEF eligibility criteria.

B. Regional Context

For the African region the two greatest centers of biodiversity, both regarded as hotspots, are the Cape Peninsular and Madagascar. In worldwide terms of biodiversity Madagascar is a region of the highest priority. It is also a country of extreme poverty so any project that aims to increase sustainable income for local peoples is of vital importance to the region. The fact that Madagascar, after a time of governmental turmoil, is settling down with a new government is also of relevance. The project is likely to have the opportunity to enhance the political stability.

1. *Replicability*

The development of a National Environmental Action Plan in Madagascar is well ahead of many other countries in the African/Indian Ocean region and so this programme will certainly have lessons to give and has already contributed to the design of other initiatives in the region as a whole. It is important that the project has earmarked a budget for the transfer of knowledge and for institutional strengthening activities to other places. Data from this project will be of particular value to other oceanic island nations with a high level of biological endemism such as the Mascarenes and Seychelles. Within Madagascar the lesson learned in the specific areas to benefit from this project can be easily transferred to other areas in the country. To achieve this the capacity building element is of particular importance.

2. *Sustainability of the project*

This phase of the environmental action Plan is aimed at producing sustainability. Its viability depends upon the political stability and the maintenance of law and order in Madagascar and the continued commitment to biodiversity of the government. The emphasis on regional capacity building within the country and on sustainable sources of income for local people add to the likelihood of sustainability of the results of this project.

A key element to add to the sustainability of this project is the proposed establishment of a Trust Fund for long term funding. Although this proposal is not requesting funds for that element of EPIII, it is to be hoped that the GEF involvement will encourage the creation of this fund. Some of the aspects of EPIII such as enhanced tourism will generate funds to increase sustainability, but these are unlikely to be enough to make the protection of Protected Areas self-sufficient in the immediate future. Therefore the Trust Fund is of considerable importance for the sustainability aspect of the overall project. It is also important to hold the government of Madagascar to its commitment to distribute a proportion of visa and gate fees and debt-forgiveness funds directly to protected area management.

C. Other issues

This project has good stakeholder participation of both the Madagascan government and the local peoples. It is designed to help at the local level and will further involve local communities in the management of protected areas and in reaping economic benefit from the income generating aspects. It is positive to see that women are mentioned as participants and stakeholders in the project. There is also a strong capacity building element in the GEF part of the plans for EPIII which is likely to be one of the most important aspects for building sustainability into conservation in Madagascar.

D. Conclusions

This is a logical and well-prepared case for the continued involvement of GEF in Madagascar, a key environment. It builds well on previous programmes, is well integrated with other governmental and non-governmental organs and has a strong element of capacity building. It is also a good balance between conservation and sustainable use of biodiversity. It clearly falls well within the focal areas of GEF and so merit their support. The proposal has provided logical key performance indicators and is aware of the likely obstacles to success. An important aspect is that this project is well integrated into the national environmental programme of the country. It will do a lot to enhance the conservation of biodiversity in Madagascar through improving the system of Protected Areas.

Additional Annex 15A: Institutional Framework

MADAGASCAR: Third Environment Program Support Project

Environmental Institutions

Following the integration of the Ministry of Water and Forest and the Ministry of the Environment into a single Ministry in January 2003, an institutional assessment has been carried out with the objective to develop a coherent vision concerning the institutional set-up of the sector and the organizational structure of the Ministry. Recognizing the need to improve the effectiveness of environmental institutions in Madagascar, the vision specifically seeks to improve: (i) institutional sustainability; (ii) financial sustainability; (iii) transparency and good governance; (iv) participation; and (v) institutional presence at the local level. Points of departure for the development of the vision have been: (i) maintenance of a close linkage with the PRSP and GoM's overall emphasis on good governance; (ii) recognition of the communes as the principal actors at the local level; (iii) continuation of the process of disengagement of the State with increased separation of policy-making/regulatory functions and operational functions; (iv) explicit recognition of the need for improved capacity and decision-making authority at the de-concentrated levels; (v) establishment of a result-based culture under which budgets are allocated and executed based on results agreements between the Minister and corresponding services and specialized institutions; and (vi) recognition of the need for more active coordination with other sector programs.

Following these considerations, the institutional assessment has resulted in a broad vision for the sector that has been adopted by the GoM. This vision, along with a transition strategy, is described in detail in a series of detailed reports included in the Project Files (Annex 8). It proposes a redeployment of the institutional set-up of the environment sector under which: (i) the Ministry is streamlined by concentrating on essential policy-making, regulatory and coordination functions; (ii) core operational functions are transferred to specialized institutions and entities under control of the State; and (iii) non-core operational functions are left to service providers from the private sector under competitively defined contractual arrangements.

Ministry of Environment, Water and Forest. At the central level, the role of the DGE is to ensure integration of the environment and sustainable development into public policy-making and public sector investment programs. The role of the DGEF is to ensure sustainable management of natural resources that fall under the jurisdiction of the MinEnvEF. The role of the CGP is to coordinate investments in the sector as well as to ensure adequate synergy of environment sector investments with other sector programs. Under the new institutional vision the de-concentrated structure of the Ministry consists of 6 inter-regional offices, 22 regional offices and 107 local offices. The de-concentrated structures ensure application of policies, regulations and norms as well as provision of support to communes (e.g. forest management transfers). By focusing in essence on policy-making, regulatory and coordination functions, required staff at the Ministry totals 547 of which 33% at the central level (against an actual total of 835 of which 49% at the central level). In line with these functions, financing of the Ministry depends on the public budget to cover recurrent costs in an amount of about FMG 19 billion/year.

Specialized Institutions. Under the new institutional set-up, three specialized institutions ensure various aspects of core public environmental functions, including: (i) *Association Nationale pour la Gestion des Aires Protégées*, ANGAP; (ii) *Association Nationale pour la Gestion des Eaux et Forêts*, ANGEF; and (iii) *l'Office Nationale de l'Environnement*, ONE.

ANGAP maintains its delegation to protect Madagascar's biodiversity patrimony for which purpose it manages the country's national system of terrestrial, wetland and marine protected areas. In line with the envisaged expansion of the national protected areas system, the number of personnel is expected to increase from 708 to 813. However, in line with its stated function, it is proposed to increasingly deploy staff at the frontline by reducing numbers at the central level (37 instead of 63) and reducing the number of staff in the inter-regional offices. Recurrent costs of ANGAP in the new institutional set-up are estimated at about FMG 23 billion/year. Financing of these costs are expected to be increasingly covered by park entrance fees, returns from the Trust Fund for Biodiversity Conservation and earmarked tax revenues generated in the tourism sector.

According to the new institutional set-up, ANGEF is responsible for all operational aspects concerning the conservation and sustainable management of forest resources in Madagascar. In essence, ANGEF is a spin-off of the operational functions of the DGEF. Doing so would establish a better division of operational and control functions that are currently concentrated in the DGEF, which is thought to be essential to improve forest sector governance. ANGEF would also integrate existing semi-autonomous sector institutions in charge of forest plantations that are formally owned by the State. It is estimated that ANGEF would employ 322 staff of which 42 or 13% at the central level. Total recurrent costs are estimated at about FMG 19 billion/year. Financing of recurrent costs is expected to come from forest concession fees covering about 2.5 million ha as well as from carbon sequestration opportunities. In view of the fact that forest concession fees actually amount only to FMG 3 billion, there is a need for an in-depth analysis of the potential revenue-generating capacity of the sector as part of the institutional transition plan.

Following uncertainties about its exact mandate resulting in duplication of functions with the Ministry, the institutional assessment has clarified the role of ONE by stating its mission as the prevention and mitigation of environmental risks and pollution. In this context, ONE would be responsible to carry-out all operational functions associated with the application of Madagascar's MECIE legislation, as well as to maintain an environment information management system. ONE would employ a total of 30 staff with an annual recurrent cost budget of about FMG 4 billion. These costs could easily be covered by MECIE associated environmental permit fees, particularly if public investments are effectively made to comply with MECIE requirements.

Non-Core Functions. To promote environmental management and sustainable development initiatives initiated at the commune level, the new institutional set-up foresees the creation of the *Fonds de Appui au Gestion Environnementale Communautaire* (FAGEC). This is in essence a sinking fund financed from the public budget as well interested donors that would support, through a matching grant mechanism, environmental investments such as reforestation, non-traditional forest products etc. Service providers from civil society or the private sector would assist communes in the implementation of these investments. Rather than financing specialized agencies (e.g. ANAE, SAGE) for these activities as was the case under EP2, the creation of FAGEC reflects a concentration of the role of the State in financing or facilitating the financing of activities in this domain. Doing so is in line with the "privatization" of ANAE and SAGE that was formalized at the end of EP2. It is estimated that FAGEC would employ 27 staff and requires a recurrent budget of about FMG 5 billion/year. Financing comes from the public budget and the donor community. Key factors for the successful establishment and operation of FAGEC appear to be its capacity to keep administrative costs as a percentage of investments at the bare minimum as well as its ability to generate positive results on the ground.

Project Implementation Arrangements

Project implementation arrangements have been defined in the context of the new institutional framework.

The elaborated transition plan defines for each specified output in the EP3 results framework the specific responsibility for each institution or entity that is involved in the program. Specific responsibility include: (i) coordinating role; (ii) regulating role; (iii) monitoring and control role; (iv) operational/implementation role; (v) financing role; or (vi) contracting role.

Implementation arrangements for the IDA/GEF project in support of EP3 have been incorporated in an Operational Manual that follows the format of BP 10.00 as included in the World Bank Operational Manual. In line with this Manual, the Ministry of the Environment, Water and Forest takes a lead regarding the overall coordination of the Project, including the relationship with IDA. As far as specific project components are concerned, ANGAP takes the lead regarding the implementation of protected areas management activities, DGEF takes the lead regarding the implementation of forest ecosystems management activities, while DGE and ONE are both responsible for selected elements of environmental mainstreaming activities under the Project. Since ANGAP and ONE (and FAGEC once created) as specialized institutions are not formally part of the MinEnvEF, it is foreseen that subsidiary grant agreements will be signed between these two institutions and the Ministry of Economy, Finance, and Budget.

Institutions or entities that have been assigned a lead role under EP3 (ANGAP, DGE, DGEF, ONE, FAGEC) prepare annual implementation plans that define the activities, procurement actions and budget required to generate indicated outputs of the EP3 results framework. The annual implementation plan forms the basis for a results agreement between the Minister of the Environment, Water and Forest and the coordinating institution. The results agreement is subsequently the basis for the execution of the agreed budget. In order to establish a closer linkage between budget execution and outputs, result-based modalities are being piloted under the PPF that was put in place to support preparation of the Project. Annual implementation plans would be ready for review by IDA by September 30 of each year during the Project implementation period.

A Project Implementation Support Unit (PISU) established in the MinEnvEF under the PPF, would provide operational support to ANGAP, ONE, DGEF and DGE as far as procurement, financial management, M&E, safeguards compliance and reporting functions are concerned. The composition of the PISU would reflect these responsibilities. PISU staff would hold competencies and qualifications acceptable to IDA. The PISU coordinator would report directly to the Minister of the Environment, Water and Forest. The PISU would play an important role in ensuring the agreed result-based execution of the Project through verification of agreed deliverables prior to the authorization of subsequent resource transfers by the MinEnvEF from the Special Account to the Project Accounts held by ANGAP, ONE, DGEF and DGE.

Overall guidance and strategic orientation of the Project would be provided by the EP3 Task Force. The Task Force would be presided by the Minister of the Environment, Water and Forest or his delegate and co-presided by a representative from the donors that provide financial support to EP3. Participating members from the government side would be the heads of ANGAP, ONE, DGEF, DGE, the coordinator of the PISU and representatives of any other relevant stakeholders in EP3. From the donor side, the Task Force would be open to representatives from institutions and agencies that provide financial support to EP3, including bilateral donors (France, Germany, Japan, Switzerland, USA), multilateral institutions (EU, IDA, UNDP) and international and national NGOs (CI, Tany Meva, WCS and WWF). The Task Force was set-up during the preparatory stage of the EP3 and has proven to be a useful partnership and participatory platform for all EP3 stakeholders with the GoM clearly in the driver's seat.

M&E

A dedicated M&E design study has been conducted as part of the preparation process of EP3. This effort has resulted in a series of reports that describe in detail: (i) program impact and output indicators; (ii) M&E operational procedures; (iii) M&E system requirements; (iv) required M&E training efforts; and (v) M&E performance assessment arrangements. Results of the M&E design study form the basis for up-grading the existing M&E system that was used under EP2. A diagnostic that was carried out as part of the M&E study revealed the following areas of improvement: (i) need to move to some form of standardization in view of the heterogeneity of systems being used by the various institutions; (ii) need to install capacity for spatial analysis; (iii) need to integrate different data types; (iv) need for a more result-based institutional culture; (v) need for better data quality through better and more diversified collection methods; and (vi) need to make M&E reports more accessible to decision-makers and other relevant stakeholders.

As far as indicators are concerned, the Task Force, with the assistance of a specialized consulting firm, has elaborated and agreed a comprehensive Results Framework for EP3 that specifies expected impacts and outputs at the program level (see Annex 1A). A total of 12 impact indicators have been defined that cover ecological, economic, social and governance aspects of the program. Impact of IDA/GEF support to EP3 will be measured against achievement of a sub-set of these indicators as specified in Annex I.

Consequently, success or failure of the IDA/GEF financed project is determined by success or failure of EP3 as a whole, meaning the collective effort of the GoM and donors at the program level. One of the characteristics of EP3 as a sector-wide approach is that all donors have agreed to measure the impact of their support based on the agreed EP3 impact indicators. Doing so would allow the GoM to concentrate M&E efforts on a relatively limited number of impact indicators. At the same time, it implies that all relevant stakeholders either succeed or fail collectively as far the impact of their efforts in support of EP3 is concerned. Similarly, all donor have agreed to specify their contribution to EP3 based on a selection of the agreed set of output indicators for EP3 in a manner that reflects both focus and level of individual donor support. Doing so reflects the adopted approach under which each EP3 donor is committed to deliver certain outputs, while using agency-specific procedures to achieve these outputs.

To adequately measure the contribution of IDA/GEF support to EP3 use will be made of a sub-set of defined output indicators whose levels have been adjusted in relation to the available IDA/GEF financing envelope for particular EP3 program elements. For instance, while it is envisaged that under EP3 a total of 1.0 million ha will be reforested, the specific contribution of the IDA/GEF project to this output will be 100,000 ha as indicated in Annex I. Also, based on the methodology proposed by IUCN, ANGAP has developed an overall evaluation scheme for efficiency in management of the PA network, which allows, on the one hand, to annually evaluate management efficiency, both for individual sites and sites as a whole, which are under the parenthood of an interregional Directorate, as well as efficiency among the national Network as a whole; and, on the other hand, to draw international comparisons.

Baseline levels of all impact indicators are available. In essence, they are based on the end-of-EP2 situation, as reported among other in the corresponding ICR. Particularly ONE's *Tableau de Bord Environnementale* (TBE) as well as the forest cover map 1990-2000 prepared by CI based on satellite imagery from NASA are useful references in this respect. In order to better position ONE to capture impacts on the ground, the project would support the progressive move towards the establishment of regional TBES.

As far as institutional responsibilities for M&E of EP3 are concerned, ONE through its *Tableau de Bord Environnementale* will continue to play an important data collection and analytical role concerning program impacts. Complementary efforts at the program impact level will be provided by: (i) OSF for forest governance related indicators; (ii) CI for forest cover related indicators; and (iii) INSTAT for

economic and social indicators. Primary responsibility concerning the monitoring of program results based on agreed output indicators lays with ANGAP, ONE, DGE and DGEF (and FAGEC once created) for those aspects of the EP3 results framework for which they have been assigned lead responsibility. To the extent possible, these institutions would deploy participatory mechanisms that would allow beneficiaries and other stakeholders to express their voice and opinion about EP3.

The PISU will consolidate the information that is generated by the output monitoring efforts of these entities in a manner that is consistent with the agreed EP3 results framework. The envisaged result-based budget execution modality, under which the PISU signs off on resource transfers from the Special Account into ANGAP's, ONE's, DGE's and DGEF's project accounts based on output progress reports, is expected to provide a strong incentive to keep output monitoring on track and up-to-date. In addition, the close link between budget execution and results will provide an effective handle regarding cost-efficiency aspects of EP3.

Reporting formats have been defined to facilitate monitoring of different program aspects, including outputs, procurement, expenditures, training, recruitment, etc. Following these formats, the PISU would prepare quarterly progress reports which would be presented to the Minister for the Environment, Water and Forest and subsequently discussed in the Task Force. Progress reports would be made available to relevant stakeholders in a manner consistent with an agreed dissemination and disclosure protocol.

In terms of system requirements, detailed specifications have been prepared covering database, communication, computing hardware and software architecture. Specifications have been differentiated for the numerous institutions and entities that have lead responsibility for the various elements of EP3 as described in the agreed results framework. Without going into details, it worth mentioning that in terms of computing architecture emphasis is placed on: (i) compatibility with existing databases; (ii) capability of integrating technical, cartographic and financial information; (iii) data-entry quality control protocols; (iv) capacity for electronic archiving; and (v) user-friendly back-up functions. In terms of communication architecture emphasis is placed on web-based applications differentiated in four domains according to identified user profiles. To facilitate implementation of the recommended system, the M&E design study provides specific guidance in terms of required equipment, software, training, and quality standards. It also specifies the required organizational aspects of how best to move from the existing to the recommended system. To ensure that the recommendations are cost-effective, an effort is made to utilize existing hardware and software to the extent possible. Following this roadmap, and in view of ONE's central role in the M&E process, detailed technical specifications of the environmental information management system to be installed in ONE under the Project have already been prepared so as to be able to move forward quickly once IDA/GEF financing becomes available.

ANNEX 15(B): SUMMARY OF THE INSTITUTIONAL ANALYSIS OF ANGAP

An Institutional Audit was carried out in July- August 2002. The information provided within has been collated from the FTHM Study-July 2002, ANGAP's Strategic Management Plan and associated resources.

Institutional Analysis: An overview of its structure and responsibilities

Organizational level

- Decentralization of structure and responsibilities. Maintain separation at 3 levels.
- Refocus the qualities of each level in relation to its central function and purpose
- Strengthening functions that are crucial to achieve objectives

- Organize sites according to the new thematic filing system as defined in the GRAP Plan
- Link operational agents directly to the park Management

Steering level

- Reinforce monitoring and internal control
- Set up management monitoring (including follow up of implementation of recommendations) and analytical accounting

Operational level

- Set up a strategic management of human resources
- Separate monitoring and resource allocation functions
- Emphasize partnership principles and actions
- Strengthen support functions
- Put in place an ecological policy directly at the site level for ANGAP staff.

Capacity Building Action Plan for ANGAP

ANGAP has developed a detailed plan for capacity building in order to strengthen the management systems within. An important activity in efforts towards capacity building is training. Several categories have been identified which would cover all aspects of training. These training categories include:

1. Functional generic training: It targets all network staff and is based on ANGAP's main field of activities.
2. Update training: It is meant to assist in catching up with the gap between current knowledge and the most recent innovations. This training helps in skills and knowledge updating.
3. Retrofit-Recap training: It is related to the employee's needs to self-adjust their individual competences.
4. Improvement: It focuses on the organization rather than on individuals and concerns 3 different issues.

A detailed institutional analysis matrix for ANGAP has been prepared which highlights the strengths and weaknesses at the various institutional levels. This is available in the Project File No: B4 and in the GEF Brief: Addendum 1 to Annex 10: Institutional Analysis of ANGAP and WayForward).

Additional Annex 16: Sumamry of the Profile of the Protected Areas System in Madagascar MADAGASCAR: Third Environment Program Support Project

PA Profile

The network of Madagascar's protected area system, with a total surface area of about 1,685,100 Ha, is composed of 18 National Parks, 5 "Integral" Nature Reserves and 23 Special Reserves (46 terrestrial PAs). These 46 PAs are managed through 36 management units (Unite de Gestion or UG's) which fall under 5 regional directorates and the headquarter. This is because in ten cases, two small adjacent PAs fall under a single management unit (namely MDA_Foret d'Ambre; Bemaraha; Mantadia/ Analamazao; MSL_NMG; Manongarivo_Tsaratana; Marojejy_Anjanahibe Sud; Andringitra_Ivohibe; Zahamena; B_Baly/Namoroka; Kirindy Mitea_Andranomena). Therefore reference to the protected areas is generally made through the management units (UG's). The National Association for the Management of Protected Areas (ANGAP), is responsible for the preservation of this rich heritage. The Protected Area System Management Plan (Plan GRAP) is a key tool for the future of this PA network as it sets out the criteria used to define how the PA network's structure and composition will assure a comprehensive representation of Madagascar's exceptional biodiversity. The geographic coverage of the PA network in Madagascar may be seen in the attached map of the PA network in Madagascar (Figure 1).

Prioritization Process

The methodology employed for the prioritization process in the protected area network has been re-iterative and adaptive, and has been developed in a consultative manner during the preparation phase of the EP III. In the initial stage, selection criteria were established for guiding the consolidation of the protected areas system and a detailed priority setting exercise was undertaken in which criteria ratings assigned for each criteria for prioritization were described. These criteria included (i) richness in diversity, (ii) uniqueness, (iii) vulnerability, (iv) irrigated area downstream of PAs susceptible to sand erosion, (v) potential for drinking water supply, (vi) contribution to protection of a watershed, (vii) frequency of visitors, (viii) tourism Potential, (ix) impact on local development, (x) needs in infrastructure and equipments and in management/planning tools (xi) financing needs and self-financing capacity. Each of the protected areas were rated on a scale of one to five based on which met these criteria. In the final stage, in addition to the ratings of the PAs by the above methodology, the incremental cost of funding PAs that were not covered by other donors was also taken into account.

Of the net 36 UG's in the network, the project has prioritized 22 for conservation and management activities through IDA/GEF support. Specifically, GEF will lend support to 15, of which it would be a primary donor for 12 (Foret d'Ambre, Andohahela, Manongarivo/Tsaratana, Zahamena, Ankarana, Foret de Mikea, Zombitse, Analamerana, Sahamalaza, Nosy Ve, Cap Ste Marie, Ambohitantely, Lokobe) and a secondary donor for 3 (Tsimanampetsotsa, Mangerivola, B_Baly/Namoroka). While the remaining 7 (Ranomafana, Isalo, Mantadia/ Analamazao, Ambatovaky, Midongy and Nosihara) will be supported by IDA. Notably, although a few of the selected PAs (eg. Lokobe, Ambohitantely, Cap Sainte Marie, Nosy ve, Sahamalaza etc) showed an overall lower score, they were still considered for support based on the linkages between the IDA and GEF funding outside the PAs and complimentarity to the donor funding in the PA system in support of the ecosystem approach. Besides these, factors such as uniqueness in habitat (aquatic habitats, mangroves, low altitude moist forest etc), endemic and indicator faunal species (lemurs, birds) or a significantly high tourist frequency, were also taken into account during the final selection.

Detailed information on the prioritization process including the biological characteristics of each PA, the

threats and root causes analysis and, the selection criteria matrix for prioritization of the protected areas in the network is available in the Project Files Nos: B3 (and in GEF Brief, Annex 7: Profile of the Protected Area System in Madagascar. The prioritization table was finalized during the appraisal mission in January 2004 (see Project File No. B.11).

Figure 1. Project sites in the PA network in Madagascar

