

MIRAY Program for Ecoregion-based Conservation & Development

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Pact

MIRAY

FINAL TECHNICAL REPORT

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LISTE DES ACRONYMES

Acronyme	Français	Anglais
AGERAS	Appui à la Gestion de l'Environnement Régionalisée et à l'Approche Spatiale	Support to Landscape Ecology Approach
AGEX	Agence d'Exécution	Executing Agency
AIS	Association des Intervenants du Sud	Association of Southern Actors
ARSIE	Association du Réseau Systeme d'Information Environnemental	Environmental Information System Network Association
ANAE	Association Nationale d'Action Environnementale	National Association for Environmental Action
ANGAP	Association Nationale pour la Gestion des Aires Protégées	National Association for the Management of Protected Areas
ANT	Antananarivo	Antananarivo
AP	Aire Protégée	Protected Area
APN	Agent de Protection de la Nature	Nature Protection Agent
ATR	Assistant Technique Régional	Regional Technical Advisor
CA	Conseil d'Administration	Management Board
CAF	Cadre d'Appui Forestier	Forestry Support Project
CAPE	Composante Aires Protégées et Ecotourisme	Protected Areas and Ecotourism Component
CBNRM	Gestion des ressources naturelles par les communautés	Community-based Natural Resources Management
CCV	Centre Culturel Villageois	
CDD	Comité Départemental de Développement	County Development Committee
CEDII		
CEEF	Cantonement de l'Environnement, des Eaux et Forêts	Local Environment, Water and Forest Office
CEF	Cantonement des Eaux et Forêts	Local Water and Forest Office
CFE	Comité de Fonds pour l'Environnement	Committee for Environmental Funds
CFSIGE	Centre de Formation en Sciences de l'Information Géographique et de l'Environnement	Geographic Information and Environmental Science Training Center
CG	Commissaire Général (Provinces)	General Commissioner (Provinces)
CGDIS	Commissariat Général au Développement Intégré du Sud	General Commission for the Integrated Development of the South
CGP	Coordination Générale des Projets	Projects General Coordination
CI	Conservation International	Conservation International
CIRAD	Centre International de Recherche pour le Développement	
CIREF	Circonscription des Eaux et Forêts	Sub-regional Water and Forest Office
CIREEF	Circonscription de l'Environnement, des Eaux et Forêts	Sub-regional Environment, Water and Forest Office
CMP	Comité Multilocal de Planification (FIA)	Multilocal Planning Committee
CNA	Cellule Nationale AGERAS	National AGERAS Unit

COBA	Collectivité locale de Base (GCF, GELOSE)	Local Community (CBNRM, GELOSE)
COEFOR	Contribution à l'Etude des Forêts Classées	Contribution to the study of classified Forest Project
COAP	Code des Aires Protégées	Protected Area Management Legislative Code
CoRDAL	Comite de Developpement Regional de l'Alaoatra	Regional Development Committee of Alaotra
COGAP	Code de Gestion des Aires Protégées	Protected Area Management Legislative Code
COGES	Comité de Gestion (DEAP)	Management Committee (DEAP)
CRAPED	Comité de Réflexion et d'Appui au Programme Environnemental et de Décentralisation	Steering Committee for Environmental Program and Decentralization Support
CRD	Comité Régionale de Développement	Region Development Committee
CTA	Cellule d'Appui Technique (AGERAS)	Regional Technical Unit (AGERAS)
CTC	Conseiller Technique Central	Central Technical Advisor
CTO	Conseiller Technique en Organisation	Organizational Technical Advisor
CTR	Conseiller Technique Régional (ESFUM)	Regional Technical Advisor (ESFUM)
DAI	Development Alternatives Inc	Development Alternatives Inc
DEAP	Droit d'Entrée dans les Aires Protégées	Protected Area Entrance Fees
DEM	Modele Numerique de terrain	Digital Elevation Model
DGEF	Direction Générale des Eaux et Forêts	General Directorate of Forestry Service
DIANA	Diego-Ambanja-NosyBe-Ambilobe	
DIE	Direction des Information Environnementale	
DIRANGAP	Direction Inter-Régionale (ANGAP)	Inter-Regional Office (ANGAP)
DIREEF	Direction Inter-Régionale de l'Environnement, des Eaux et Forêts	Environment, Water and Forest Inter-Regional Office
DIREF	Direction Inter-Régionale des Eaux et Forêts	Water and Forest Inter-Regional Office
DVRF	Direction de la Valorisation des Ressources Forestieres	Direction Of Forest Resources Valorization
EDC	Eros Data Center	Eros Data Center
EIS	Système d'Information Environnemental	Environmental Information System
EMC	Ecosystèmes Marins et Côtiers	Marine and Coastal Ecosystems
EP1	Programme Environnemental Phase 1	Environmental Program Phase 1
EP2	Programme Environnemental Phase 2	Environmental Program Phase 2
EP3	Programme Environnemental Phase 3	Environmental Program Phase 3
EPA	Conseiller en Planification Ecorégionale	Ecoregional Planning Advisor
ESFUM	Ecosystèmes forestiers à Usages multiples	Multiuse forest ecosystem.
ESTA	Ecole Supérieure des Techniciens Agricoles d'Iboaka	
FCE	Fianarantsoa Cote Est	
FFN/ FFR	Fonds forestier national / FF régional	National Forestry Fund / Regional FF
FIA	Fianarantsoa	Fianarantsoa
FID	Fonds d'Intervention pour le Developpement	Intervention Funds For Development
FORAGE	Fonds Régional d'Appui à la Gestion de l'Environnement	Regional Support Funds for Environmental Management
FSC	Certification des Produits Forestiers	Forest Stewardship Council

FTM	Institut Géographique de Madagascar	Malagasy Mapping Agency
GCF	Gestion Contractualisée des Forêts	Forest Management Contract
GDA	Global Development Alliance	
GEF	Fonds Mondial pour l'Environnement	Global Environmental Facility
GELOSE	Gestion Locale Sécurisée	Secured Local Management
GIS	Système d'Information Géographique	Geographic Information System
GPS	Global Positioning System	Global Positioning System
GTDR	Groupe de Travail pour le Developpement Rural	
GTZ	Deutsche Gesellschaft fur Technische Zusammenarbeit (Coopération allemande)	German Development Aid
ICDP	Programme de Conservation et de Developpement Integre	Integrated Conservation and Development Program
IEC	Information Education et Communication	Information Education and Communication
IEFN	Inventaire Ecologique et Forestier National	National Forest Ecological Inventory
INSTAT	Institut National de la Statistique	National Statistics Institute
INTH	Institut National du Tourisme et de l'Hôtellerie	National Institute for Tourism and Hotels
IPVO	Organisation Internationale Privée Volontaire	International Private Voluntary Organization
IRG	International Ressources Group	International Resources Group
IRRI	International Rice Research Group	International Rice Research Institute
ISS	Appui Systeme d'Information	Information System Support
ISSU	Unité d'Appui en Systèmes d'Information	Information Systems Support Unit
IUCN	Union Internationale pour la Conservation de la nature	International Union for Conservation of Nature
LARO	Linking Actor for Regional Development Opportunity	
LOVA	Long-Term Opportunity for Voluntary Action	Long-Term Opportunity for Voluntary Action
LSM	Laboratoire SIG/MEF	MEF GIS Laboratory
LTTA	Assistance Technique à Long Terme	Long Term Technical Assistance
MDS	Ministere de la Defense National	
MEF	Ministère des Eaux et Forêts	Ministry of Water and Forests
MEEF	Ministere de l'Environnement, des Eaux et Forets	Ministry of Environment, Water and Forests
MEFB	Ministere de l'Economie, des Finances, et du Budget	Ministry of Economy, Finance, and Budget
MES	MIRAY Executive Secretariat	MIRAY Executive Secretariat
MinEnvEF	Ministere de l'Environnement, des Eaux et Forets	
MITA	Managing Innovative Transitions in Agreement	Managing Innovative Transitions in Agreement
MJG	Mahajanga	Mahajanga
MOR	Moramanga	Moramanga
MEM	Ministère de l'Energie et des Mines	
NEAP	Plan National d'Action Environnemental	National Environmental Action Plan
NGO	Organisation Non Gouvernemental	Non-Governmental Organization
NRO	Bureau des Ressources Naturelles	Natural Resources Office
NPCA	National Park Conservation Association	

NPF	Nouvelle Politique Forestière	New Forest Policy
OCA	Outil d'Analyse Organisationnelle	Organization Capacity Assessment
OD	Développement Organisationnel	Organizational Development
ONE	Office National pour l'Environnement	National Office for the Environment
OPCI	Organisme Public de Cooperation Inter communal	
PACT	Private Agencies Collaborating Together	Private Agencies Collaborating Together
PADR	Plan d'Action pour le Developpement Rural	Rural Development Action Plan
PAE	Plan d'Action Environnemental	Environmental Action Plan
PCD	Plan Communal de Développement	Communal Development Plan
PCDI	Programme de Conservation et de Developpement Integre	
PCER	Plan de Communication Environnementale Regional	
PCR	Plan de Communication Regional	
PDFR	Plan de Developpement Forestier Regional	Regional Forest Development Plan
PGIDR	Programme de Gestion de l'Information pour le Developpement Regional	Information Management For Regional Development Program
PGEE	Plan de Gestion de l'Education Environnementale	
PM		Program Manager
PNM	Park National Management	Park National Management
PNUD	Programme des Nations Unies pour le Développement	United Nations Development Program
PPIM	Projet de Planification Intégrée de Mahajanga	
PRDR	Plan Regional pour le Developpement Regional	
PRSM	Programme de Reforme du Secteur Minier	Mining Sector Reform Program
PTA	Programme de Travail Annuel	Annual Work Plan
RAC	Corridor Ranomafana-Andringitra	Ranomafana-Andringitra Corridor
RAMSAR		
RAP	Evaluation Biologique Rapide	Rapid Biological Assessment
REE	Rapport sur l'Etat de l'Environnement	Environmental Report Status
RFA	Appel d'offres pour Candidature	Request for Application
RFP	Appel d'offres pour Proposition	Request for Proposal
RIR	Reseau d'Information Regional	
RLO	Responsable de Liaison Régionale	Regional Liaison Officer
RLR	Responsable de Liaison Régionale	Regional Liaison Officer
RNI	Réserve Naturelle Intégrale	Strict Nature Preserve
RP1	Chaîne de Résultats 1	Results Package1
RP2	Chaîne de Résultats 2	Results Package2
RSIRMA	Reseau Sytème d'Information Regional du Mangoro	
SAGE	Service d'Appui à la Gestion de l'Environnement	Environment Management Support Service
SAVEM	Sustainable Approaches to Viable Environmental Management	Sustainable Approaches to Viable Environmental Management
SGBD	Système de Gestion des Bases de Donnees	Data Base Management System
SIBIO	Système d'Information sur la Biodiversité	Biodiversity Information System

SIAP	Systeme d'Information sur les Aires Protegees	
SIE	Système d'Information Environnemental	Environmental Information System
SI/SE	Systeme d'Information et Suivi-Evaluation	
SIG	Système d'Information Géographique	Geographic Information System
SIGE	Systeme d'Information pour la Gestion de l'Environnement	
SIR	Systeme d'Information Regional	
STTA	Assistance Technique à Court Terme (Consultant)	Short Term Technical Advisor
SUSI	Service Unite Systeme d'Information	Information System Unit Service
TBE	Tableau de bord environnemental	Environmental Dash Board
TBEP	Tableau de bord environnemental Provincial	Provincial Environmental Dash Board
TFMT	Tropical Forest Management Trust	Tropical Forest Management Trust
TGC	Transfert de gestion communautaire (GCF et GELOSE°)	CBRNM (MFCor GELOSE)
TGN	Tolagnaro (Fort-Dauphin)	Tolagnaro
TVE	Toamasina (Tamatave)	Toamasina
TVM	Television Malagasy	Malagasy Television
UGIF	Unite de Gestion des Informations Forestieres	Forest Information Management Unit
UNDP	Programme des Nations Unies pour le Développement	United Nations Development Program
US	Etats-Unis d'Amérique	United States
USAID	Agence Internationale pour le Développement des Etats-Unis	United States Agency for International Development
USGS	United States Geological Survey	United States Geological Survey
VNA	Vaomieran'ny Ala (comité villageois de protection de la forêt)	Forest Protection Village Committee
WWF	Fonds Mondial pour la Nature	World Wide Fund for Nature
WCPA	World Commision for Protected Area	
ZICOMA	Zones d'Intérêt pour la Conservation des Oiseaux de Madagascar	

1 Introduction

The MIRAY program was launched in November 1998 by Pact and its implementing partners Conservation International (CI) and World Wildlife Fund (WWF). The project was primarily funded by the United States Agency for International Development with an overall grant of US\$ 12,319,000 over the 54 months duration of the project.

The main goal of the project is to assist the key players to benefit from the lessons that were learned from the Malagasy first Environmental Program (EP1) and provide the proper environment and tools to the key actors of the developed Environmental Program II (EP2). For EP2 to succeed, it needed to adopt a new eco-regional approach for planning and foster synergies between conservation and development efforts. Based on this, the MIRAY implementing team committed themselves to the following mission:

“CI, Pact and WWF will promote the sustainable conservation and development of Madagascar’s Biodiversity and natural resources within a framework of eco-region-based conservation and development, through a process of participation, consultation, empowerment, partnership and organizational development”.

Within this framework, MIRAY has developed around four main components:

- “Eco-regional Planning” – AGERAS, Led by Pact
- “Protected Areas and Ecotourism” – CAPE, Led by WWF
- “Forest management” – ESFUM, Led by CI

A fourth Transversal Support component was also integrated into the above three main components which included information systems, education, communication, capacity building and organizational development. These components required interlinkages and led to interdependence of results between the various components of MIRAY, which was a continuous challenge to the implementing team.

Based on their accumulated experiences in Madagascar and in the preparation for EP1, The MIRAY team was able to fast track the activities of MIRAY at its inception phase. The team adopted a main strategic objective of creating the capacity and suitable environment to facilitate the active and dynamic involvement of all stakeholders involved in the development of EP2. This participatory process focused on regional perspectives and priorities. This approach was maintained in the planning, development, decision making, and institutional building efforts in Madagascar.

This report highlights the various results, lessons learned, success stories and recommendations that were generated within the 54 months of implementation of MIRAY.

2 Background

The MIRAY Program was originally designed to promote biodiversity conservation and sustainable development through an ecoregion-based approach to landscape and ecosystem management. This orientation by definition covered much larger areas than those targeted earlier through Integrated Conservation and Development Projects (ICDPs) that focused on one or a few parks or nature reserves. Bringing about the successful long-term maintenance of biodiversity integrity within large tracts of natural habitat clearly poses many more challenges than an ICDP as land-use and ownership patterns are inherently vastly more varied and require a broader range of interventions. The latter must include social mobilization based on informed public consensus, favorable changes in the perception of the value of biodiversity, improved biodiversity management practices through the promotion of sustainable use, and an increase in the technical capacity among the many groups responsible for, or using, specific sites or resources in the region.

The considerable, complementary skills of three Non Governmental Organizations (NGOs) were thus brought together under the common strategic umbrella of the MIRAY Program. Pact has been responsible for providing support to the Ecoregional Conservation and Development component of the program, and has brought its experience and resources to address complex governance issues including decentralized governance and management, and the development of essential tools and partner empowerment for knowledge management and regional and local planning. Conservation International (CI) has provided direct support and assistance to the MEF, and has focused on approaches aimed at improving public and community forest management in non-protected areas, as well as developing rapid inventories to help define land-use zoning and transfer of forest management to communities. WWF's contribution to the Program has been to strengthen the capacity of the Malagasy national park service (ANGAP), including the development of institutional and financial sustainability strategies, and improving technical management systems to internationally recognized standards.

All three major Activity Areas – integrated conservation and development initiatives, improved forest management and protected areas – are closely complementary to each other and MIRAY has used them to support the integration of sustainable biodiversity management into provincial and communal planning processes. It is very difficult to imagine how this set of closely interlinked studies, support and interventions under MIRAY could have been implemented by any one organization, or how for that matter three separate organizations working independently could have achieved more than the MIRAY Team has achieved. MIRAY was, and must continue to be, more than three separate organizations working independently, under a common goal. The synergies between the activities of each of the three organizations have greatly contributed to placing biodiversity conservation as a cornerstone for decentralized development programs.

It is also clear that all three program components- park planning, forest management and the incorporation of these two central principles into regional planning- have been and continue to be

essential parts of the same equation for the sustainable conservation and development of Malagasy biodiversity resources within priority ecoregions.

Furthermore, the MIRAY Team's approach, first and foremost, focused on the empowerment and enabling of our Malagasy partners for program design and implementation at the local, regional, provincial and national levels. It is evident that long-term, sustainable conservation and development actions in Madagascar are only possible through local partner capacity development and empowerment, which is in and of itself a time-consuming process. The MIRAY Team has clearly demonstrated the success of this empowerment and enabling approach, whether with EP2 "Agence d'Execution" (AGEX) partners (such as ANGAP) or with regional partners (such as the CMP¹/CRD²).

¹ CMP= Comite Multi-local de Planification

² CRD= Comite Regional de Developpement

3 MIRAY's Main Components and Adaptations

The main focus of the EP I was on conservation and integrated development projects in **sites** of high priority ratings in terms of conservation and biodiversity value. At the end of EP I, it was clear that a change in approach to widen the intervention process was necessary. The Level of intervention should be extended beyond the Protected Areas and their immediate peripheral zones (about 5 km of surrounding areas) into the level of the larger **eco-regions** in which they are situated. The implementation strategy of the EP II was therefore built around the "eco-regional approach".

This new approach was also supported by the lessons learned and experiences gained by other environmental and forestry programs and initiatives such as SAVEMS and MITA (Pact) "Contribution a l'Etude des Forêts" COEFOR Project (CI) and Debt-for -Nature and "Cadre d'Appui Forestier"(CAF) (WWF) and others by CARE/Wildlife Conservation Society (WCS). MIRAY blended these experiences into a coherent program of support for the Environmental Program II, however, due to the changing political conditions in Madagascar, MIRAY objectives were also modified to meet the changing needs and better support the conservation and forestry sector.

3.1 MIRAY between 1998 and 2001

The MIRAY team during this period was guided by the objectives, activities and results that were set in the preparation phase of the program, by which the work focused on the following components across the various eco-regions of Madagascar:

3.1.1 Direct Components

a) Eco-Regional Planning (AGERAS)

MIRAY will strategically address the reconciliation of various and opposing interests of a multitude of local and regional actors as the key element to the success of regionally based conservation and development efforts. This intersected with the AGERAS process, which was based on promoting responsiveness to problems in the management of natural resources within an eco-regional perspective and on facilitating consensus between the various stakeholders on strategies and actions required to solve these problems.

As an objective, MIRAY will ensure that the AGERAS unit of the National Office for the Environment (ONE) and its regional branches in the 5 priority eco-regions, have the capacity to set in motion a process of ecoregional planning for conservation and development implying multiple stakeholders.

b) Protected Areas and Ecotourism (CAPE)

The setting up of improved management of the critical biodiversity habitats constituted one of the main elements of the National Environmental Action Plan. The strengthening of institutions

responsible for the management of protected areas was therefore inherent in this element. In response, the CAPE support component of the MIRAY Program will essentially be centered on providing technical support to the National Association for the Management of the Protected Areas (ANGAP). ANGAP has been recognized by the Malagasy Government and donor groups as the agency for the management of national parks and protected areas in Madagascar.

CAPE set an objective to promote the institutional capacity and human resources of ANGAP at the local, regional and national levels to manage parks and natural ecosystems inside and around the protected areas.

c) Forest Management (ESFUM)

MIRAY team adopted an active approach to reinforce the capacity of MEF to set in motion the new legislation and forestry policy in each of MIRAY's five priority eco-regions. Innovative activities in forest management will be developed in order to ensure the longer term performance of the Water and Forests Regional Office (DIREF) in terms of equipment and human resources to durably manage the forest ecosystems of Madagascar and conserve its biodiversity on the scale of ecological regions.

MIRAY's objective under this component is to reinforce the institutional and human capacity of MEF and the DIREF in the 5 priority regions as well as meet their need of equipment to manage the forest ecosystems and maintain their biodiversity.

3.1.2. Transversal Support Components

The Transversal Support Component (CAT) is a cross cutting component that focuses on building the technical capacity of AGERAS, CAPE and ESFUM national and regional stakeholders in information management, education, communication skills, and implementing networks and partnerships. This component includes three sub-components:

a) Information System Support Unit - UASI

Spatial information constitutes an essential tool in AGERAS for achieving appropriate diagnostic analysis and perception of the target ecological region. Under this sub-component, MIRAY will achieve the following:

- The capacity of the main stakeholders of AGERAS is improved in gathering managing, analyzing and disseminating spatial data/information;
- ANGAP has reinforced capacity to compile and analyze spatial data on the configuration of ecosystems in the Protected Areas; and
- MEF technical capacities are reinforced in the management of data and use of Geographical Information Systems (GIS).

b) Capacities Development Unit - UDC

A key to the success of EP2 is the existence of strong, sustainable groups, associations and organizations at all levels who will actively participate in and contribute to the overall goal of sustainable ecoregional development. In order for such participation to take place, especially at the local and community level, MIRAY will invest in the development of these local, regional and/or national groups, associations, and organizations by providing both internal organizational capacity development as well as effective institutional development for the expansion of participation and participatory platforms at all levels. Within this component the following results are expected;

- The institutions and intervening parties of AGERAS, CAPE and ESFUM achieved improved level of institutional development.
- Partnership and networking capacities of the institutions and stakeholders of AGERAS, CAPE and ESFUM are well developed.

c) Support for Information-Education-Communication – IEC :

This sub-component is designed to meet the requirements of the Communications Strategy of EP2, targeting journalists, teachers and students, public service officials, traditional authorities, decision-makers, as well as rural populations and agriculturists. It will ensure the proper communication of EP2 program needs and strategies in a more effective, simpler, professional way and reinforce synergies between the various components. MIRAY will achieve this goal through training and social organization.

By the end of MIRAY, these sub-components will lead to improved information-education-communication capacities of the institutions and stakeholders of AGERAS, CAPE and ESFUM.

3.2 Development between 2001 – June 2003

During 2001, MIRAY's activities were influenced by the national decentralization process and evolution of the National Environmental Action Program (PNAE). The setting up of the Autonomous Provinces; the organization of national programs like Rural Development Action Plan (PADR), Mining Sector Reform (PRSM), and The Information Management for Regional Development Program (PGIDR); the decentralization of the state Technical Services; and the restructuring of ONE and the creation of SAGE and PIIGE required a review and modification to MIRAY objectives and mode of operation at the national and regional levels. The new conditions for setting up zoning, the progress in the Management Plan for the Network of Protected Areas for ANGAP, and the USAID decision to exclude Mahajanga and Antsiranana for its priority regions were additional factors that influenced MIRAY.

As a result, modifications to the original MIRAY proposal were made especially in regard to intermediate results and activities as follows:

Under the "CAPE" component:

- ANGAP has a legal structure through the Code of Protected Areas (COAP) and received support for the to allow it to apply the structure;
- ANGAP has a Protected Area Network Management Plan (Plan GRAP) and applies it as the strategic framework for management of the network;
- ANGAP adopts a coherent organizational structure within its legal and strategic setting to organize the efficiency of the organization and to ensure its institutional sustainability;
- ANGAP developed a sustainability plan; and
- Appropriate financing program for ANGAP is in place

Under **ESFUM**, and as a result of the lessons learned and of the general recommendations at the time of the CFE, MIRAY/ESFUM evolved toward MIRAY "Forests". The team established a program wider than that of the simple framework of ESFUM and PTA of the DGEF, to become a "support for the forests." This re-direction led Miray particularly to add activities that particularly apply to DGEF's partners of which:

- Assessment of the institutional structure of the (Ministry for) Water and Forests
- Support for the implementation of the "Regional Forest Development Plan" (PDFR) in the framework of regional planning
- Support for DGEF's partners in the Transfer of Management
- Development of technical and scientific knowledge in the field of restoration and the sustainable management of natural forests
- Management of natural forests

This 2001/2003 period also coincided with the end of the first phase of MIRAY (March/June 2002) and it was at this time that USAID granted the team the extension phase without additional cost (April-October 2002) and an extension period with additional funds to November 2002. These extensions were necessary to be able to consolidate the achievements of the Program and to reinforce the inclusion of the environment in sustainable development.

3.3 July 2003- March 2004 Period

Madagascar's seven-month political crisis from December 2001 to June 2002 and the administrative and political turbulence at the various levels of Malagasy public life severely hampered the expected results and achievements by the National Environmental Program Second Phase (EP2) in general and MIRAY in particular, leading to exceptional delays in the program.

The political crisis has also delayed the start up of the USAID Programs for the support to the Environmental Program III until March 2004, thus creating a gap in funding between as MIRAY was officially to end in June 2003. Consequently USAID approved the extension of MIRAY and introduced changes to its activities/results towards greater emphasis on support to the forestry sector (DGEF) and the Protected Areas (ANGAP). This decision has allowed the continuous support to some important on-going activities that require reinforcement and consolidation, such

as: the zoning of the forest ecosystems; the development of more transparent lumbering permits with the improvement of the revenue system; the strengthening of the process of transfer of management to local communities; the institutional and organizational restructuring of the ANGAP; the setting in hand of the GRAP Plan; and the development of management plans for the forest corridors with involvement of the OSC through dialogue and planning structures.

4 Analyses of achievements & results by components between 1998 - 2004

This section will focus on each of the four components under MIRAY. Although that each of the three implementing agencies under MIRAY had lead separate components, synergies between activities were very strong and have led to the achievement of the over all goal of MIRAY.

it is essential to reemphasize here that due to the adaptive nature of MIRAY and its evolving goals and original intermediate results (as mentioned in Section 2 above), the reporting on each of MIRAY's components did not follow the Intermediate Results outlined in the original Grant Agreement but more in terms of the overall goals and expected results of MIRAY across the life time of the project.

4.1 Forests Sector Support Component:

The objective of this support was to improve the sustainable management of natural forests by focusing on three main areas:

- Participatory forest management;
- Improved knowledge of natural forests;
- Institutional capacity building of the forest service.

Several activities within these three main areas were implemented during EP 2 which led to a wide range of results, each reinforcing the other, and forming the backbone of the next phase of the EAP (see section on lessons learned as well as a note in annex A1). Four additional areas of interventions to further the sustainable management of Madagascar's forests may be identified based on these results. These areas are:

- Forest zoning;
- Forest contract-based management: using well-proven tools such as forest management transfer to local communities (COBAs), and also new options under study such as conservation sites (conservation sites under state control or under concessions) or carbon storage areas;
- Institutional support for the Forest Service; and
- The development and implementation of "Site de conservation "concept" following the President RAVALOMANANA's announcement in Durban (See AnnexA1/D)

Based on the above, MIRAY achievements in the Forest Sector were:

4.1.1 MEF is provided with assistance to improve its Strategic and Regional Planning Capacities

- a) **Technical assistance to MEF's efforts to develop a forest zoning system. Special attention was given to clearly define zone criteria, and identify priorities for implementation.**

Within the framework of the National Environmental Action Plan, Madagascar engaged in an ambitious program of transfer of management of the forests with objectives to ensure in the short term 2,000,000 ha under statute of Protected Surface (ANGAP), 4,000,000 ha in Community management, 4,000,000 ha year installation (DGEF) and 2,000,000 ha of setting in défens (DGEF)

Madagascar Forest Zoning aims to have the various vocations of the forest ecosystems in order to determine then the best management modes appropriate to their durable conservation: Community management, forest concession of conservation, protected Area and zones in restoration in order to optimise the forest resources valorisations.

At the national and regional level, a participative and iterative process of reflexion on the definition of the vocations of the forest and the zoning criteria was developed. These criteria were spatialized, making it possible to assign to each forest the vocations, which correspond to him and improve them in order to integrate regional specificities and waitings of the actors.

Forest zoning means defining management regimes for forest areas according to the functions they ensure. These functions are of 3 strategic types:

- Ecological functions: generally of national priority and requiring integrated management throughout the country
- Regulative functions: generally of regional priority and mainly addressing erosion, hydrology, watershed management, etc.
- Productive functions: generally of local priority, depending on socio-economic constraints and opportunities.

This classification allows a scaling of intervention levels based on competence. It also makes it possible to recommend management regimes that are adapted to the various unique or combined functions. For instance:

- Ecological function applies to areas managed as ANGAP protected areas, MEEF conservation sites, privately (by foundations, companies) managed ecotourism areas, COBA management transfer for conservation purposes, carbon storage areas managed by companies.
- Environmental and productive functions apply to COBA mixed transferred areas, MEEF cautious exploitation, and “Regulatory Framework for Environmental Impact Assesments of Socio-Economic Development investment in Madagascar” (MECIE) exploitation with severe restoration measures.

Forest zoning is a fundamental tool for decentralized spatial planning, integrating the concerns of all partners within the forest sector through an alternative regional and central validation process.

It is a tool that allows data acquisition and validation and benchmark setting based on a long-term vision. As a tool, forest zoning has allowed:

- Integration of information and objectives of a large variety of partners
- Establishment of objective platforms that integrate or prioritize different – and sometimes diverging – uses of forests.
- Evolution as new knowledge or finer-scale data is acquired.
- Distribution of priorities in a transversal way between different levels of power (national, regional, local).

Forest zoning is a comprehensive process that helps refine the management plan for a forest corridor such as the Mantadia-Zahamena one that is currently under development.

With the technical and financial support from program MIRAY, the DGEF could bring together all the actors touching of near or by far the forest sector in Madagascar to develop and identify the zoning criteria. The latter will have to be useful already basic for a Management strategy the forest inheritance.

Thus, a database spatialized relating to these criteria could be created and could be updated as criteria are improved or supplemented data are available. A first zoning map of the forests at the national level could be produced in 2001. This first national zoning map, very global and general made it possible to have a vision compared to the role and function held by the forest in Madagascar. It cannot play yet the role of tool for the operational planning and the management activity of the forests in Madagascar.

Following this report, processes of zoning were initiated on the level of the "Environment, Water and Forest Circumscription (CIREEF). The objective of the regional zoning processes consisted with: (i) To ensure a Leveling of Information on the concept of zoning at the level of the CIREEF agents (ii) adapt/Refine the first results of zoning at the national level with the context of the CIREEF. Thus, from December 2002, the regional zoning process was initiated on the level of 8 CIREEF with the supports from program MIRAY (Moramanga, Ambatondrazaka, Fianarantsoa, Mananjary, Toamasina, Fénérive-Est, Fort Dauphin, Morondava). The production of zonings maps on a scale of 1/50000 constitutes one of the awaited major results of the regional zoning process.

With these intention GIS technicians of CI Madagascar was sent to WDC to receive Training on the techniques of development of the MNT on a 1/50000 scale. The CIREEF of Toamasina was selected like pilot zone for the development of this model

In 2002, a first background document reporting all the stages of the process, the various identified criteria, the assignment of the zones undertaken according to the criteria and the Functions of the forests with the statistics calculated, the visions and prospects on forest zoning, as well as the questions and of possible conflicts, entitled: "First Report on the Forests zoning " was produced by the DGEF with the technical and financial support of program MIRAY.

Since 2002, USFS also brought its experience and its expertise to support the setting up Madagascar's Forests zoning process. 3 successive missions of United States Forest Service (USFS) took already place in Madagascar to make an Inventory of existing situation of the process and made some recommendations on the basis of existing conditions and the experience in the USA. One of the major recommendations resulting from the last mission of the USFS Zoning team in Madagascar in December 2003 was the development of a "Methodological Guide for the control of regional zoning processes". This guide is currently under development.

a) Two regional forest zoning plans (Moramanga-Zahamena corridor, Andringitra-Ranomafana corridor) were developed and implemented

The regional zoning process has been taking place in 3 DIREFs offices of Toamasina, Fianarantsoa and Toliara. Regional zoning workshops were held to benefit the Ambatondrazaka, Moramanga, Morondava and Toamasina CIREFs. Additional workshops were conducted for the three CIREFs Fianarantsoa, Mananjara and Taolagnaro offices, of which two additional CIREF offices of Ihosy and Manakara were part. In through process, the regional forest zoning approach became highly developed and includes the following main steps:

- Provide each CIREEF and Regional Zoning committee with spatial data like forest cover, Digital Elevation Model (DEM) of the region;
- Provide methodological, material and technical support for the organization of regional workshops;
- Local partners should validate/adapt the criteria proposed for their region;
- Local partners make recommendations for adapting the national zoning plan;
- Each CIREEF office where the pilot regional zoning process is initiated should be engaged in undertaking zoning activities according to their own approach and technology while adopting the nationally define methodology;
- Regional zoning committee, have been put in place in each CIREEF (Fianarantsoa and Mananjary); those committee are operational for data collection, analysis, mapping production

b) Regional/communal plans for the conservation and environmental management of priority zones are formulated.

In 2002 and 2003, the regional platforms that were coordinating activities in the two major eastern forest corridors of Moramanga-Zahamena and Andringitra-Ranomafana were actively involved in the application of the zoning process at the regional level. The Moramanga CRD, the Ambatondrazaka CordAL and the Fianarantsoa CMP integrated information from the zoning process into their regional information systems. The workshops for the initialization of the zoning process at the level of CIREEF generated proposed changes to the forest management systems and activities related to forest zoning in order to ensure that the process is operational in the corridors and within the priority conservation issues.

The proposed management plan for the Moramanga – Zahamena corridor integrate successfully the result of zoning process. In the Andringitra-Ranomafana corridor, the zoning process, with support from the ILO project, was able to catalyze planning activities for the Tsiazombazaha forest.

c) Conservation plans along with other environmental aspects are integrated in communal, regional and/or provincial development plans

Under this component, the regional zoning process for the Moramanga CIREF was considerably carried forward by:

- Completing and refining data at local level, including the preparation of 1/50,000 pre-maps and ground truth points.
- Translating the regional zoning process into action plans,
- Validating the results with regional and local forest sector partners, especially communes to ensure that socio-economic criteria are integrated and coherent with Communal Development Plans (PCDs).
- Providing a clear and operational procedure for the method that will be used in the next phase of the EAP; and
- Define appropriate procedure and methodologies for make the zoning process operational, including mobilization of resources and partners, implementation modalities, and translation into an action plan
- To achieve this, MIRAY provided needed equipment (partly provided by MIRAY), sufficient and reliable data especially a sufficient scale of DEM and appropriate capacity within the CIREEFs.

During the 2003-2004 extension of MIRAY, further activities were implemented in this regard, which included:

- Updating 6 communal development plans (PCDs) for Antaniditra, Morarano, Amboasary, Andaingo, Fierenana, and Didy in the Mantadia-Zahamena Corridor in collaboration with local NGOs (ADIDI, RINDRA, ACCE, and Anjaramasoandro);
- Reformulation of the commune investment plans (PIC) of these PCDs which are considered at the level of development operators (FID and PSDR);
- Preparation of a project dossier for the "Integration of the environmental dimension in the Regional Development Scheme for "Mangoro" for the purpose or raising funds for the development of a Regional Development Scheme for Mangoro"; and
- Finalizing the Ampombibe sub-program for integrating conservation program of the Northern part of Bongolava forests. This sub-program of regional development of Sofia/Port Bergé.

d) Support to MEF for the integration and refinement of national and regional Forest zoning plans into Forest Policy and National Forestry Management Plan is provided.

An assessment of the workshops and the work undertaken by the regional zoning committee in the 8 CIREFs helped to improve the national zoning concept. In particular, work

undertaken in the Moramanga-Zahamena corridor provided recommendations for translating the zoning process into a strategic program and an operational planning tool. Analysis of the proceeding of the zoning approach was undertaken as well with a focus on its participatory aspects (links between the national and regional (CIREF) levels, how the priorities and concerns of the various partners are integrated, implementation modalities, etc). The zoning process was used to identify and prioritize forest management areas. This process was complemented by recommendations on implementing forest management that outlined the following:

- Recommendations on the appropriate management mode for each area: management transfers to local communities (TGC), management by ANGAP, exploitation by tender, conservation site, etc.
- Development of implementation mechanisms: roles and responsibilities, resource mobilization, monitoring system and performance measures.

e) MEF role in forest resource management at the national, provincial and local levels is reviewed and finalized and dissemination/training to all MEF staff and partners is conducted.

A note in Annex A1 presents the role of the forest sector and its relationship to partners, based on lessons learned from EP 2 . Under this objective, three themes were addressed that are strongly linked to one another: zoning, management transfer and the DGEF institutional context.

f) Knowledge of the two corridors is increased

MIRAY supported the development of the following tools to improve knowledge of the two eastern forest corridors of Moramanga-Zahamena and Ranomafana-Andringitra as well as the natural forests at the national level:

- Geographical database on 1990-2000-forest cover.
- Economic valuation and decision-making support Software TAMARIN tool in the Moramanga-Zahamena corridor;
- Net Weaver tool installed in Fianarantsoa to support knowledge acquisition and management. Net Weaver also assisted in the development of a model for forest management transfers;
- Workshop on methodology and analysis of economic value of natural resources, held in 2003 for the Moramanga-Zahamena corridor;
- Economic analysis studies of hydrologic cost benefit of watersheds in terms of deforestation and decrease in productivity were undertaken on 2 sites in Andekaleka and Fierenana;
- Cost-benefit analysis studies of the management transfer in Besariaka Ankeniheny/Moramanga were conducted.

4.1.2 MEF Information System and Knowledge Management for Better Forest Resources Planning and Governance are improved.

a) Strategic Forest Resource Information and Knowledge Management Framework were developed

A key priority for improved forest resource planning and governance is the improvement of decision-making at all levels of the Forest Administration. In this line, MIRAY program support has been focused on improving the management and use of forest resource information and the development of knowledge of priority ecosystems.

The MIRAY team has provided strategic and technical support to a number of key activities, including, initially, the development of a forest resource information policy for the MEEF/DGEF, in order to help guide the Ministry services at all levels in the management of critical forest resources.

b) DGEF Information System in place and operational:

At a more practical and operational level, technical assistance and support has also been provided for a broad range of important information and knowledge management initiatives mentioned elsewhere in this section, including: the development of information systems and monitoring tools for the national bushfire campaign; the development of information and monitoring tools to track forest resource exploitation activities; and support for the assessment and implementation of forest resource management transfer activities.

The DGEF was equipped with the materials on the level the Monitoring & Evaluation unit and the Information System Unit to enable them to undertake activities of Monitoring & evaluation on the ground. Thus Maps were produced and were available for the actors on the ground for zoning at the national and regional level. Spatial Database on the transfers of management were also produced for the Province of Toamasina, region of Bongolava, province of Fianarantsoa.

A permanent technical support was placed at the disposal of the DGEF at the level of the Information System Unit. This Support allowed revalorise the role and the place of an information system as a tool of planning, monitoring & evaluation and decision-making aid for the improvement of good governance for the forest sector. Currently, the UGIF (Unit of Forest Information Management) become SUSI (Service Unit System d'Information) in 2003 is in the center of the various priority activities of the DGEF such as Zoning, Conservation Site, Forestry development, fire monitoring, forest cover monitoring.

Apart from the equipments donations, MIRAY also contributed to the reinforcement of the capacities and Transfers of competences to the forest administration agents at all levels (central and decentralized) Several sessions of Trainings was organized by MIRAY for these agents on the various aspects of the Information system since the data collection, while passing by management, the treatment & analyses information until the mapping production.

Currently, the DGEF has competences in terms of GIS, Data base Management and Development, but valorisation and the optimisation of these competences currently depend on the Leadership and the willingness of the DGEF to develop the Information system like significant tool for good governance of the forest sector. In any case, at the end of program MIRAY, it is felt that the leaders in place have a strong will to develop the role and function of information and the supports from program MIRAY start to bear these fruits. More and more the Information Unit System of the DGEF is in the center of the various priority activities of the DGEF by proposing analyses and tools: Zoning, Site of Conservation, Forestry developments, Transfers of Management, fires monitoring, forest cover monitoring...

c) CGP Information System Reinforced:

Additionally, support and assistance has been provided to the Project Coordination Units of the MEEF and other key ministries, which permits a coordinated monitoring and evaluation of project activities as well as the integration of important biodiversity conservation priorities into the decision-making processes of other rural development ministries.

d) DGEF Information System Decentralized

At the regional level, in parallel with the zoning process an interest growing is felt to lay out an information management unit and data processing. However, the insufficiency of human resources constitutes one of the crucial problems to carry out this activity. In any case more and more, of competences in term of Information management developed with the supports from program MIRAY.

Within the framework of the decentralization of forest Information system the 6 DIREF and the CIREF of Moramanga were equipped with computer equipments (computers, printer ...) to use for the establishment of a data base on the forestry exploitations, the state of the forest rights and all the related

Information System Units were installed in the DIREF of Toamasina, Fianarantsoa, and the CIREF of Moramanga with donation of powerful computer equipments and technicians for the CIREF of Moramanga and the DIREF of Fianarantsoa.

4.1.3 Equitable and Transparent Management of Forest Resources

The MEEF administration has undertaken nationwide efforts to improve the transparent management of forest resources. Priorities were given first to the reinforce responsibilities among the various stakeholders in the forest sector. Secondly, the MIRAY team assisted in the review of exploitation permits through transparent planning, control and coordination systems, partnership and for better use of information in planning and implementing forest resource use and management. MIRAY support to improved MEF capacities for the transparent management of forest resources and forest revenues have included the establishment of an efficient information management system and the control of forest activities on the ground.

a) Tracking system for legal permits defined:

Efficient management of forest information is fundamental to the transparent management of precious Malagasy forest resources. The MIRAY teams have collaborated with the DGEF to provide the following information and knowledge management support:

- Preparation of a forest information management policy paper
- Decentralization of forest information management to DIREFs and CIREFs
- Provision of a computerized database (including equipment, spatial data, technical assistance) on all forest-based extractive activities, and training in the management of such information.
- Promotion of the use of reliable multi-sector information in order to improve decision-making and planning related to forest resource management at the central, provincial and regional levels.
- Development, in collaboration with USGS and other partners, of an innovative system to monitor bush fires, allowing effective control and assessment.

b) Review of current forest exploitation permits:

On the ground, establishing effective and transparent management of forest resources started with putting order into forest-based extractive activities through an improved control of forest exploitation permits and royalty payments. Major efforts have been undertaken to evaluate and, where necessary, annul, forest resource exploitation permits relating to timber products in the most sensitive areas in 2001 (8 priority CIREFs of Antalaha, Majunga, Antsohihy, Morondava, Toamasina, Moramanga, Ambatondrazaka, Fianarantsoa) :

- 418 permits were reviewed
- 155 permits were cancelled due to expiring validity (37%)
- 179 permits were revoked due to non-compliance with agreed instructions and limitations (43%)
- 71 permits were maintained under the condition that they have to be in order i.e. they have to regularise their situation vis à vis payment of fee by 30 April 2003 (17%)
- 13 permits were found to be proper.
- 80% of forest fees generated from the maintained permits were received (1,924 millions MGF received out of 2,377 millions MGF owed). Cancelled permits had a fee recovery rate of 12% (174 millions MGF out of 1,434 millions MGF owed).

The forest service plans to extend this activity to the remaining CIREFs and especially to the Fenerive Est CIREF where massive timber exploitation occurs near Maroantsetra. Technical control of exploitation parcels is planned for the upcoming extension phase.

The transparency of the permit issuing process was considerably improved after 2001 due to the following interventions:

- All permits were displayed and recorded in a database in each of the DIREEF offices. These databases are maintained in the Toamasina and Fianarantsoa DIREEFs but require improved monitoring in other DIREEFs.
- Zoning and forest management transfer contracts were taken into consideration in issuing permits, at least in the two priority areas of Corridor Zahamena Mantadia and Ranomafana-Andringitra (as opposed to the situation at the beginning of EP 2).

A workshop was organized at the end of 2003 by the forest administration and the Trade Union of Loggers to define transparent models for delivering logging permits. **Local forest exploitation control capacities by MEF, communities and legal authorities are established and developed**

At more local scale, forest activity control is undertaken by local surveillance committees (VNAs). This structure was first put in place for the Mantadia-Zahamena corridor where such committees were created within villages neighbouring the forest in order to reinforce access and resource collection. This process is now being established through extensive training of local officers on relevant laws and improvement of the control and organization mechanism:

- Production and Dissemination of a special CD-ROM that includes a compilation of the Malagasy forest legislation;
- Regular control visits into the forests of the Moramanga CIREF and Port-Bergé and Mampikony CEFs were carried out By the Forest administration (Chef CIREEF) Control visit to the Andapa, Antalaha and Vohemar regions was carried out (during which 25 tons of ebony was seized).
- Control and repression visit in order to enforce the new order prohibiting new forest clearing of natural forest in the Moramanga CIREF, especially in the areas of management transfer carried out (Tongalaza, Besariaka, Bekorakaka, Farizana and Marovitsika).
- Established 3 local surveillance committees VNA (38 members in Didy, 20 in Morarano and 20 in Ampahitra) for the sites of forest management transfer in the Moramanga and Ambatondrazaka CIREEFs.
- Training sessions on the new forestry legal texts were organized for CIREEF forest agents in Fianarantsoa, Ihosy, Mananjary, Manakara, Moramanga and Ambatondrazaka.

c) Redelimitation of legal permits

Fifteen forest exploitation parcels were re-delineated out of the 23 valid parcels within the Moramanga CIREF area through the support of MIRAY in equipment (compasses, GPS, camping gear) and per diem. Actually, in the past, GPS technology and Geographical data were not used yet for delineation of forest exploitation area. So this activity of Re-delineation is very important to track concretely the localization of forest exploitation.

d) New Forest exploitation permitting System allowance development ongoing:

The preoccupations of integrity and a transparency process of granting licence for exploitation led the DGEF to suspend the delivery of licence and to cancel the many licences, which were not in conformity. This had as a consequence a great pressure on the DGEF to take again the delivery of licence. The delivery of new licence was suspended until the installation of a new more transparent mechanism for granting licences for forest exploitation. In the new system imagined, in fact, the DGEF must identify the batches to be put under forest Exploitation. The attribution of batches to the owner must pass by a procedure of invitation to tender public competing and competitive before adjudication:

- Tendering of 2 exploitations parcels in the Rabona forest (based on recommendations and work by PRECONS between 1995 and 1997) is currently prepared and will be shortly tested.
- The technical and financial feasibility study for a carbon storage concession in the Moramanga region is being undertaken.
- CI is studying the possibility of direct conservation payments for communities neighboring natural forests; this study is based on the 1999 study of biodiversity forest reserves.

Communities and loggers alike now request that the CIREEFs and CEFs check suspicious exploitations or seize illegal products. Unfortunately, CIREEF offices have limited resources and are not able to fully meet these requests which creates a threat to the sustainability of the control activities

e) Support the implementation of FFN/FFR

Audits of the FFN and FNR are among the actions undertaken in view of good governance. The audit report has been finalized and distributed to concerned parties. Due to late nomination of key members of the MEEF, the creation of the FFN/FFR committee has been delayed so that MIRAY was not able to support this FFN /FFR program development. It was planned that a manual to improve management of these funds will be developed, which is one of the audits' recommendations. This activity will be supported under WWF other forestry projects.

Due to the strong political commitment of the forest authorities, MIRAY was able to assist DGEF decentralized offices in strengthening their forest control through: The FFN and FFR were created and in operation.

4.1.4 MEF Communication Plan Improved to Promote Sustainable Forest Resource Conservation, Use and Management

The bushfire campaign is a national concern given the alarming degradation caused annually by fires, and it was announced by the President of the republic as a main priority to save the environment. With USAID support, the MIRAY team was mandated to support the campaign in collaboration with the Ministry of Environment, Water and Forest (MinEnvEF). In this regard,

communications support provided by MIRAY concentrated on bushfires on a national scale, while prioritizing 'red zones' identified as being particularly critical.

The goal of the MIRAY support was to help reduce forest degradation and the area burned in key regions:

- Raise awareness among key community groups of the damage caused by fires.
- Raise awareness of relevant laws.
- Increase community responsibility with respect to their participation in bushfire control.

MIRAY support focused on production of communication tools, training facilitators, dissemination of tools and achievement monitoring.

a) Communication tools:

Communication tools including audio-visual tools and printed materials were produced. By the 2002 year's end, 11973 posters (format A2) and 24995 (format A3), 79 banners, 28890 stickers, 15130 animation manual, 9700 legislation texts, 3893 campaign fact sheet, 3543 President speech, 2 radio spots, and 2 TV spots were produced and disseminated at national level. A media campaign accompanied that using printed materials. This was achieved through a radio advertising program produced by the MEF, and a second radio program produced through MIRAY support and broadcast through several radio companies to cover the whole of Madagascar. A similar approach was used for television programs broadcast through TVM. Multiple copies of cassettes were sent to the regions for broadcast. In addition, press releases were produced by the MEF and provided to radio and television journalists. Finally, as a sum-up of lessons learnt from the campaign, a documentary film was produced and broadcast nationally and locally.

b) Training facilitators:

A series of training workshops was organized to cover priority zones throughout the country, namely for partner institutions in Antananarivo, for Tany Meva facilitators drawn from partner associations who will work directly in their respective intervention zones. Additional sessions were organized in different provinces (Antsiranana, Mahajanga, Fianarantsoa, Manakara, Toliara, Tolagnaro) with the participation of local authorities, regional directions, NGOs and projects. All partners within MIRAY were fully active in initiating the campaign at provincial and local levels. Training was accompanied by the distribution of educational materials in order to facilitate a rapid start-up for the campaign.

c) Distribution of tools:

Distribution of visual aids for the campaign was assured through the MEEF networks. Other bodies that cooperated included Ministry of Health, MEFB (Ministry of Economy, Finance and Budget), MDN (Ministry Of National Defense), MAEL (Ministry of Agriculture and Livestock), SEDDPA (State Secretary for Decentralisation), EP 2 agencies, NGOs and development agencies. Other partners including ANGAP, SAGE, ANAE (Association Nationale d'Action

Environnementale), Tany Meva Foundation were also active in the campaign. MIRAY/WWF used the opportunity provided by the Koloharena rural associations national congress focusing on sustainable development (November) to create new partnerships as these associations are in direct contact with communities and thus are potential communication vectors. A meeting at the President Palace lavoloha of mayors from Antsiranana and Antananarivo (November 26) broached the subject of the bush-fire campaign. Similarly, MIRAY obtained significant assistance through the Interior Ministry. This ministry had missions throughout the country for the preparation of national elections, and allowed MIRAY to distribute bush-fire campaign materials widely.

d) Achievement monitoring:

Achievements of the campaign are collected and mapped in Antananarivo as a means to monitor progress. The collated materials and the results of the program demonstrate to all interested parties the impact of the program. We are able to follow how target zones are being included in the program through outreach meetings, the creation of bush-fire committees, the establishment of *dina*, training in village participation, and participation of local people in bush-fire control. All campaign progress is monitored using GIS techniques. We note that there has been an increase in responsibility assumed by local communities. We consider GIS-derived maps that monitor campaign progress are a valuable tool that tracks the participation of different partners and provide an excellent means to communicate our success.

The increase in CCF committees, the wide distribution of educational materials and numerous training sessions are positive indicators that we are attaining our stated goals: mobilize different actors, increase awareness among a broad spectrum of partners, demonstrate the seriousness of the campaign, and clearly inform people that laws will be strictly applied. MEF field teams and information from partners indicate that bush-fires have been considerably less frequent this year.

We also wish to note that three government councils also treated the bush-fire campaign. MEF received strongly positive feedback from members of the government regarding progress to date. The bush-fire campaign has become a national priority. In order to reinforce the campaign, additional tools produced jointly by MIRAY team and IRG/PAGE were disseminated to key partners. These communication tools in Malagasy dealt on management and forest legislation within the local structures and on transfer of management.

In view of maintaining motivation of meritorious communities, the MEEF conducted an evaluation of communes that greatly reduce or eliminate bush-fires in their respective areas. MIRAY supported production of certificates for these communes. These certificates will place the rewarded communes as priority beneficiaries of project development funds.

In the promotion of Civil Society actors as more effective advocates for environmental concerns, GCF processes has been facilitated by NGOs with support from Miray (training, methodological input, technical, material and financial support):

- In the Mora-zaka corridor: ADIDI, A.C.C.E., Anjara Masoandro in the Mangoro region, R.I.N.D.R.A.-Mangoro, A.FA.MA., A.N.K.A.I., Filantsoa, MEG (Antananarivo).
- In the Fianarantsoa corridor: Coalition of H2O, ADI/FCE, with support and assistance from ILO/Pact and LDI.
- CRDs (CRD Mangoro, CMP/FIA) are active advocates of conservation thanks to the information provided by MIRAY.

4.1.5 CBNRM Tools and Approaches Disseminated and utilized for Effective Natural Resource Management

The approach adopted to transfer forest management to local communities has followed one of two trends:

A cautious approach – also referred to as the “conservation approach” – whereby interventions are reduced to a minimum and aim at conserving the given forest area, while allowing traditional resource use regimes, or sometimes even a simple economic use of these resources (such as wood cutting for a fee, harvest permits); and

A more “intensive approach” in terms of resource collection and area, that puts greater emphasis on the “productive” aspect of a given forest, while requiring important preliminary work and supervision.

In the “conservation approach”, the local community’s general motivation is security over the tenure of their traditional land, the ability to prevent strangers from clearing the forest and the maintenance of soil fertility (water sources) and supply in wood and other forest products. In parallel, local communities often organize themselves to meet community needs through the construction of village infrastructure such as schools, bridges, health centres.

The conservation approach’s impact looks very positive, especially as regards reduction of *tavy* and illegal clearing and resource collection by people outside the community. The approach then spreads to other areas: as pressures shift to neighbouring forests, neighbouring communities seek ways to protect their resources and, in turn, request a management transfer contract.

In the “intensive approach”, local communities’ first interest is economic and activities have to generate revenues. The environmental impact is mixed as compared to the required investments: It is difficult to establish several contracts as their preparation is time consuming and requires important follow-up for fundraising and community structuring.

Integration to forest conservation is not always effective; the numerous tasks, including some administrative paperwork, are often too difficult for COBAs to handle. This leads them to neglect resource control.

Too often, funding for a complementary activity is not sufficient, not adapted or subject to long delays and COBAs are discouraged.

The socio-economic impact of this latter approach looks more promising than that of the "conservation approach" but its sustainability has yet to be proved. Economic use of forest resources is often seen as the best means to motivate COBAs, while not requiring large complementary investments, and making a close link between the economic future of the activity and sustainable forest management. In fact, a few practical examples of this approach (Fanjahira, UTA/Ambatolampy, Association des Bûcherons d'Ankeniheny, Besariaka COBA in Ankeniheny) have always encountered thefts and non-payment of royalties. They require important supervision in order to ensure that the activity or the forest is sustainable managed. Such an approach should be used only in specific situations where close supervision and support can be provided for a sufficiently long length of time.

In view of reinforcing the capacity (of the DGEF, NGOs and Decentralized Management Bodies) in community management of forest resources, it was planned that MIRAY will help to develop tools facilitating the elaboration and implementation of CBNRM contracts. Many approaches from MEEF field team and from different partners have been experienced. A committee was in place and has started to deal with the simplified management plan. MIRAY has recruited a consultant who assisted in the development of a manual gathering these experience and clarifying the major steps or guidelines for a simplified management plan, the role and responsibilities of stakeholders, and other information that will help forest management by communities such as a system of monitoring of CBNRM contract implementation. The work is still in progress and will be continued under the MIRAY transition phase.

Production of CBNRM communication tools as guidelines for CBNRM contract implementation were produced

Several communication tools were developed to support CBNRM: .

- A Malagasy version of the GCF guidebook (3,500 copies) was published
- Three documentaries showing the various steps in the GCF process were produced on videotapes and CD-Roms and distributed to donors, technicians and local communities.
- A national seminar on the implementation of GCF was concluded in Majunga, in October 2002, with the participation of partners involved in the GCF process. The report of the seminar was finalized by a working group comprising representatives from DGEF, CIRAD, Intercooperation, CI and WWF and published by Tany Meva in 1,000 copies.
- A knowledge base (on Net Weaver) was translated into French to assist in developing a GCF model.

a) MEF agents empowered to implement management transfer:

The GCF guidebook, printed in 1,500 copies, was disseminated to all forest agents. In January, forest agents were mobilized to provide GCF information to NGOs in the Fianarantsoa region.

An assessment visit on management transfers organised by DGEF was implemented by the MIRAY team in collaboration with GTZ, CI, WWF, Intercooperation Suisse, SAGE and OSF.

Following the training of forest agents in 2001, it unfortunately appears that those agents who are not supported by a project in any manner do not have the capacity to engage in a GCF process on their own. Without considerable reinforcement of the field offices of the forest service, NGOs and Communes (through VNAs) will have to play a major role in magnifying the scale of management transfers.

b) Communes and local leaders informed about the CBNRM process.

The GCF guidebook was translated into Malagasy and disseminated to most communes and organizations in the two priority regions, as well as to a great number of other partners (3,500 copies printed).

An agreement was reached between MIRAY and TVM to broadcast documentaries produced by MIRAY on GCF process.

c) Partners and communities supported to develop and implement CBNRM contracts (NGOs in Moramanga, Ambatondrazaka, Bongolava, Fianarantsoa, Fort Dauphin)

New agreements have been made between MIRAY and 4 NGOs to implement GCF:

ADIDI: 9 GCF in the Ambolihero forest (Didy/Ambatondrazaka commune),

ANKAI: 1 GCF in Ambohibolakely (Morarano-gare/Moramanga commune)

Coalition H2O: 1 GCF in Anindrabe (d'Androy/Fianarantsoa commune)

In this respect, Pact trained 5 NGOs in Fianarantsoa (Coalition H2O, APPM, AGED, ADI/FCE, CCD Namana) on forest management and GCF.

- 27 management transfer contracts were signed (GCF/Gelose):
- contracts (3 GCF and 3 Gelose) covering 9,823 ha signed in Moramanga;
- contracts (GCF) covering approximately 10,000 ha signed in Port Bergé;
- contracts covering 10,000 ha signed in Manambolo;
- contracts covering 1,200 ha signed in Vohitsaoka;
- contracts (GELOSE) signed in Andapa.
- 1 GCF contract signed in Amindrabe/Fianarantsoa

Unfortunately, no contract were finalized yet in Diego (due to repeated change of the MIRAY staff and political instability)

Several other communities have requested MIRAY's support to implement GCF in their village territories (Moramanga, Ambatondrazaka, Fierenana, Mampikony and Port-Bergé):

- 9 GCF contracts with association in the Ambolihero FG were finalized by ADIDI, a partner NGO based in Didy (Ambatondrazaka).
- other contracts were finalized for 10 forest parcels delineated in the Moramanga region.
- 1 GCF requested to cover 3,000 ha in Analabe (Mampikony II commune).
- GCF requested in the Fianarantsoa area (Anindrabe and near Ifanadiana).

Under support to LDI activities, 2 other management transfers deemed necessary in Ranomena and Andrambovato because of their impact were initiated with MIRAY/CI funding in November to December 2003. As from January 2004, it will be up to Chemonics to continue the monitoring and implementation actions for these contracts through the various income generating activities related to them.

g) Potential for CBNRM tools in wetlands were evaluated

- At least two CBNRM contracts for wetlands under negotiation (WWF)
- Management planning process for lake, watershed and Zetra of Lac Alaotra initiated; WWF (corporate) provided consultant for preparing management plans for 700,000 ha. A proposal to RAMSAR was submitted for consideration.

h) Contracts on management transfer implemented

The implementation of the management contracts is one of the main priorities of the management and simplified management plans, with the focus on the following main activities:

- Conservation
- Right of partial use of forest plots where the community is allowed to use forestry products (firewood, timber wood, etc. ...)
- Economic exploitation, which is in general geared to income generating activities that are alternative to tavy (slash and burn).

For of case transfers achieved in the regions of Mangoro and Sofia, mini-projects in place as accompanying measure are indeed operational through activities of bee-keeping, fish farming, reforestation and economic exploitation (cf Indicator in Annex)

4.1.6 MEF Cooperation and Coordination with Key Partner Organizations and national Programs Improved:

a) MEF Management teams strengthened to provide improved programs and strategic guidance to its activities.

The following key results were achieved:

Management of knowledge on forest management transfer was supported in Ambendrana, Malazamasina and Madorano (FIA).

DGEF participated in the annual CI planning meeting in Washington, DC and synergies with CI programs were developed.

A task force, known as the Durban Vision Group] was created to implement the vision and statement of the President of the Republic that was conveyed at the Durban summit committing Madagascar to increase the size of its Protected Areas to up to 6 million hectares., The Task Force has been coordinated by the DG of the Water and Forests and includes representatives from most environmental institutions in Madagascar.

b) MEF Cooperation with key environmental organizations (SAGE, ANAE, Tany Meva, ANGAP) strengthened.

Creation of platforms for the management of the corridor

The launch of corridors management process was one of the highlights of the extension phase of MIRAY. During this stage, the collaboration between MEF and the different regional stakeholders was intensified namely with SAGE, the Dialogue/consultation structures, decentralised technical services as well as the provincial and regional authorities. In the Mantadia-Zahamena region, **a provincial platform** was created and piloted by DIREEF Toamasina. The purpose of this platform is to coordinate the activities of the various consultation Structures of the 6 fivondronana of Ambatondrazaka, Moramanga, Fénérive Est, Toamasina II, Brickaville, Vavatenina in the preparation of the management plan for the corridor. Similarly, in Port Bergé, a **regional platform** was created to coordinate the Dialogue/consultation structures (Comité Départemental de Développement or CDD) in the fivondronanas of Mampikony and Port Bergé in the preparation of a management plan for Bongolava. The of the management plan will create an opportunity for inter-institutional synergies and active contribution of all actors in a province or a region.

The creation of these platforms was made legal through a **provincial order** for Toamasina and **Sous-prefectoral** for Port Bergé.

Vitalizing Dialogue Structure:

Dialogue structures were created in the framework of the AGERAS process at the beginning of MIRAY. Some of them were tested through the ecoregional planning process including CRD Mangoro; CMP Fianarantsoa while others were played down the creation of regional and provincial platforms has resulted in updating the existing structures and guides them to the corridor-based approach. MIRAY, with the support of SAGE, focused its effort on vitalizing these structures in the province of Toamasina and Sofia region.

Collaboration was initiated between MIRAY and the Mining-Forest committee on issues related to programmatic support in the priority zones, mining/forest issues in St. Luce-QMM/Anosy, Mikea forest, and mining permits in the Angalapona/FIA GCF area.

c) MinEnvEF program implementation partnerships were strengthened with key sector Ministries/ Programs.

DGEF's priorities were integrated into MEM [Ministry of Mine and Energy] programs such as support to the Mining-Forests, the MIRAY-PSDR/Toamasina agreement, support to the development of Communal Development Plans, and integration of environmental aspects.

MIRAY has facilitated synergies between MEEF and ONE, especially with regard to the TBE-related activities.

Forest data were integrated into the PRSM/MEM/SIGE and mining cadastre and the LDI MAEL tracking system.

d) Communication and coordination procedures for forest management activities between MEEF and its partners established.

The main DGEF's coordination tool for forest management is the zoning process. This involved: Strategic collaboration at the national level with respect to various forest works, forest management transfer, and participation was created.

4.2 CAPE Component

The MIRAY Project has started in July 1998, and has ended at the end of December 2003 after having been extended a few times. Within this time frame, the CAPE Support Program has peaked between September 1998 and June 2001, with three full time long term technical assistants (LTTA) providing assistance to the client organization. Two of these had been hired as soon as July 1998, with one remaining until the end of the Project.

WWF has provided a steady and continuous flow of all administrative and support services required, even during the political crisis that have rocked the country for the most part of year 2002. Indeed, WWF's CAPE Support Program has been the only MIRAY component to maintain a relatively acceptable level of services during the 2002 events.

In total, more than three million dollars have been spent by USAID through MIRAY for the CAPE support Program, with WWF directly accountable for most. Additional services have been provided by other MIRAY components through Pact and CI, and by other USAID related projects including PAGE.

The Specific achievements³ in terms of expected outputs described below is based on ANGAP's « Five Steps Strategic Framework for Sustainability », as defined in Appendix A, including the integration of Protected Areas concerns into the ecoregional approach (Conservation & Development through ecoregion).

4.2.1 Development and Implementation of the Legal Framework

- a. Madagascar's Protected Areas Act (COAP) has been approved, and the related implementation texts have been finalized through a participatory process.
- b. The public is informed of COAP. An awareness publication has been produced in the Malagasy language.

4.2.2 Development and Implementation of Strategic Vision for the Protected Area System

- a. This vision has taken the form of formal Strategic Plan for the Management of the Protected Areas System (Plan de Gestion du Réseau des Aires Protégées - Plan GRAP), that has been approved three years ago already. This Plan, stemming from the *Five Steps Strategic Framework*, provides direction and a more detailed strategic framework for all actions aimed at improving System management. Its implementation has been initiated: committees have been made operational for a full review of the System and for identifying new sites; thematic

³ This list refers to main deliverables, and to measurable achievements. The numerous tasks and minor outputs (formal and informal) required for the design and delivery of these are not listed here, because they have already been covered in MIRAY's technical reports.

- management plans have been developed, and are being implemented for conservation, ecotourism, sustainable development and environmental education.
- b. The manuals for developing these plans are available and training has been provided.
 - c. Management planning for CONSERVATION has been given special consideration, because conservation planning must indeed set the tone and give direction for all other fields of management. A very extensive manual has been produced and is being implemented. The high quality of this particular output is already being recognized at the international level.
 - d. A number of other major initiatives, of a more practical nature, have also been implemented:
 - o ECOTOURISM – Three Interpretation Centers have been built and are operational; self-guiding has been promoted and, accordingly, self-guiding trails have been built (complemented by related publications); other interpretive publications have been developed and distributed, including a national Protected Areas brochure (5,000 units); partnership has been improved.
 - o SUSTAINABLE DEVELOPMENT: Having in mind the related USAID and MIRAY strategic objectives, the CAPE Support Program has given particular consideration to sustainable development: evaluation of the economic impact of protected areas on regional development; development and distribution of a manual for planning and managing development; production of Management Plans for Development in eight parks; design of a new, decentralized, system for sharing entrance fees (Droits d'Entrée dans les Aires Protégées – DEAP); production of a related manual, and implementation of a new computerized processing system; training workshops for the members of the local community committees for DEAP management.
 - o ENVIRONMENTAL EDUCATION: Production of a manual for developing Environmental Education Management Plans (Plans de Gestion de l'Éducation Environnementale - PGEE); a number of plans already developed.

4.2.3 Organizational Review and Reengineering

- a. Early in the Project, establishment of an ANGAP national management committee (Comité National des Aires Protégées - CONARAP), that includes all senior managers and the LTTAs, followed by training for its members about managing decentralization.
- b. A detailed review/analysis of the institution and of its management has been conducted jointly with a technical assistant from the USAID PAGE project.
- c. Following this exercise, related training sessions for senior managers were given to CONARAP members.
- d. Recommendations were made concerning the structure and operation of the institution, a number of which are being implemented.
- e. As a complement, a review of technical capabilities has been conducted by CAPE/MIRAY technical assistants, followed by a detailed organizational audit by a local firm. These have resulted in a new organizational chart.
- f. The new structure organizational chart has then been adopted by ANGAP' Board, and is being implemented.

4.2.4 Sustainable Plan (Business Plan)

- a. PAGE has steered the development of a Strategic Marketing Plan, with the cooperation of CAPE/MIRAY technical assistance. Related training was given to the PNM-ANGAP team.
- b. Recommendations were made, and evaluated jointly by ANGAP, PAGE and CAPE/MIRAY, for staffing a related position within ANGAP.
- c. Promotional material was produced and the Web site has been improved. An exhibit was designed for the WCPA/IUCN World Congress on Protected Areas in Durban, South Africa.
- d. A first version of a national Sustainability Plan has been produced, and is used as reference for estimating ANGAP's long term structural costs.
- e. Specialized training for the production of site plans has been given by consultants from the National Park Conservation Association (NPCA), to a representative group of 25 participants from various disciplines and APs . Two site specific plans have been produced.

4.2.5 Sustainable Financing program

- a. An international symposium about sustainable financing has been organized in Madagascar, in May 2001. On that occasion, the national strategy for the sustainable financing of the Environmental program was endorsed, and a foundation (Biodiversity Foundation) and trust fund were created.
- b. A new financial management system, better adapted to operational management (rather than project management), has been developed and its implementation has been initiated.
- c. A first detailed estimate of ANGAP's structural costs has been made, as part of the sustainability planning process. This estimate has become the basis for the cost analysis required for the Biodiversity Foundation and for the PE III.
- d. The entrance fee policy and schedule have been reviewed and a new approach proposed (decision pending by the management board (CA).
- e. A monitoring system has been adopted and implemented.

4.2.6 Disposal of Institutional Capacity and Human Resources Required to Manage the Parks and The Ecosystem in and Around the Protected Areas

There is little doubt that ANGAP now has the basic instruments required for it effective management of the PA network in Madagascar. From now on, the next steps should focus on the support that the institution will need to make these instruments operational, and on improving its methods and delivery in order to achieve management excellence.

The technical assistance provided to the CAPE up to now has contributed greatly, in a measurable way as demonstrated in Appendix C, to ANGAP having in place a coherent, complex and rather complete, set of management tools and systems that should allow for sound management if properly used. These tools and systems, both traditional and innovative, cover all aspects of modern management for a protected areas system. A few of these tools are already gaining a solid reputation on the international scene, namely with IUCN's World Commission for Protected Areas (WCPA) Senior management, and the professionals and the technicians in ANGAP, have fully participated in their design and have already started to apply most of them. However, there are still a lot of shortcomings, mostly due to the fact that the capacity building

process takes time. The upcoming challenge is to ensure proper delivery and to monitor the outputs closely.

All in all, it can honestly be said that PNM-ANGAP's capacity for management has been significantly enhanced during the past five years, as demonstrated by the results of the PE II mid-term evaluation in 2001, and as stated by numerous national and international partners.

4.2.7 Integration to Ecoregional Approach (ecoregion-based conservation and development)

Essentially, there really is no detailed and rigorous system of monitoring and evaluation that would allow for measuring with certainty the extent of MIRAY initiatives' contribution to "Promote the sustainable conservation and development of Madagascar's biodiversity and natural resources within a framework of ecoregion-based conservation and development". However, many indicators, both formal and informal, demonstrate that the WWF Support Program for the CAPE has indeed contributed a lot to PE II achieving the goals that it shares with USAID. In this respect, it is important to note that PNM-ANGAP, with the leadership and assistance of its Technical Assistant (TA) for the South (ATR-Sud), has made major progress, to put in place a system that will allow for better quantifying, in the medium term, the results of conservation and sustainable development initiatives. This ATR and an extensive group of specialized ANGAP movers have worked consistently, in the last three years mainly, to provide their institution with a top notch integrated approach for the professional management of natural resources in an ecoregion-based context. This approach, now well regarded at international level, centers on the monitoring and evaluation of tangible progress in achieving measurable goals that have been preset as part of the careful and detailed planning of resource management. The plans and goals give key consideration to the ecoregions, including the role and impact of neighboring communities.

In the mean time, it can be affirmed that the actors in the CAPE/MIRAY program have applied consistently, during the full extent of the Project and with significant results, the guiding principles stated for their mission: "... *participation, consultation, empowerment, partnership and organizational development*". The achievement listed above and described in a little more detail in Appendix C demonstrate clearly that a notable number of milestones have been set in this respect, with the goal of making sustainable conservation a reality in the protected areas and their vicinity. In addition, the initiatives by the TAs and by WWF, with ANGAP's collaboration, to enhance PNM's image and credibility at international level have helped greatly in entailing renewed interest and support for Madagascar's biodiversity, namely for its conservation within the protected areas system. PNM-ANGAP's international reputation is a crucial factor for the system's sustainability and for improved sustainable conservation.

4.3 Conservation and Eco-Regional development component

4.3.1 Consultation and Planning Structures

Consultation structures for eco-regional planning in the priority zones initially defined by USAID were initiated and are fully functional. They have been recognized as successful models for Consultation and more similar structures were developed in the majority of the island's regions. These Consultation structures are remarkable in terms of their strong representation and being rooted at the grassroots levels, involving all communes of their specific region through Local Development Committees, Mayors and heads of communes (councilors)

Dialogue structures are also instrumental in involving all stakeholders in the planning and development of a region including the State Technical Services, NGOs and associations, the private sector and decentralized Collectivities through their elected representatives. They therefore constitute a legitimate forum for debating issues related to development and environmental management of their regions, strengthening dialogue between the state, Civil society organizations and Private enterprise and promoting a healthier model for good governance.

In line with the local context and the status of institutions at the regional level, three types of Consultation structures were strengthened and made operational:

Consultation structures for environmental planning such as the CMP in Fianarantsoa. These structures facilitate the planning processes of the Environmental Program and are active within clearly specified geographical boundaries in a given ecosystem e.g. the corridor between Ranomafana-Andringitra/Pic d'Ivohibe.

Structures for inter-sectoral development planning such as the CRD in Anosy, Mangoro, and CorDAL that focus on integrate environmental considerations and priority ecosystems the region's development plans as a potential resource. They also address environmental issues in all multi-sectoral approach.

The planning structures for rural development with the GTDRs, which emphasize the interdependence of rural development and the environment. These structures were established in the context of the PADR and were retained, developed and validated as platforms for discussing and debating the Environmental Program.

In the northern eco-region (DIANA), the presence of the Consultation structures such as CRADES and ROSEDA is noteworthy. These structures played an important role in the environmental planning at the level of this eco-region and for the promoting environmentally friendly activities . Round table meetings were held between these Consultation Structures and the donors.

At MAHAJANGA region, MIRAY team worked in close cooperation with the GTDR to integrate the environmental dimension in the planning and implementing of rural development. The GTDR of SOFIA and BETSIBOKA thus benefited from MIRAY's support by gaining environmental knowledge and planning approaches [

Each of the regions in the Toamasina Province currently has a Regional Development Committee directed by the "Prefet" (Administrative representative of the government at the level of the region) of the Region. This role of these Committees was enlarged during the MIRAY initiatives with AGERAS/SAGE at the level of the region of Mangoro (CRD Mangoro) and of the Lake Alaotra (CoRDal). These CRD principally addressed the integration of the environmental dimension in the preparation of the local and regional development plans.

At Fianarantsoa, CMP was the Consultation structure that was reinforced by MIRAY. CMP focused its activities on forest corridors between the two National parks of Ranomafana and Andringitra/Pics d'Ivohibe. The processes of the promotion of the corridor was associated with education and communication activities and of the marketing of the value of this ecosystem in within the context of the development of the region and the Province as a whole. A management plan for the Forest corridor of Ranomafana and Andringitra is in preparation to become the framework for interventions of all the Stakeholders working at the level of this corridor.

At Anosy, the CRD was the selected Consultation structure that was reinforced by MIRAY to integrate the environmental dimension in the process of development. The establishment of the Regional Development Schema was a unique opportunity for this integration and a regional prioritizing process was led by the CRD to define the 14 priority zones for environmental conservation in the region. Currently, the GDA/LARO project is putting in place a conservation zone in the Ambatotsirongorongo forest which was one of the selected priority zones.

4.3.2 Environmental Planning and Prioritising of Ecosystems

Contrary to the Environmental Program I that was based on the PCDI with spheres of action limited to protected areas and their peripheral zones, the environmental planning during the EP II was more oriented toward an eco-regional concept with a far wider perspective and ecosystem-centered.

To improve planning, and in addition to setting up adequate participatory consultation structures, the following key components were also addressed:

- (i) Development of good knowledge of the ecosystems to better assess and understand the problems of the eco-region;
- (ii) Improving the process of prioritizing of the ecosystems in the eco-region to be improve the selection and targeting of sensitive systems
- (iii) Enhancing the process of developing management plans to create a participatory environment that is receptive to inputs from stakeholders.

a) Development of knowledge

MIRAY and its partners were aware that the level of information and knowledge about the APs and peripheral zones was not sufficient to set in motion a development and eco-regional conservation program. Therefore, data collection, and analysis was targeted in order to increase the understanding of the socio-economic and ecological situation in these areas.

In order to improve the perception of the problems on the ground, the MIRAY team carried out extensive analysis and assessment of all priority zones in the ecoregion, identifying the nature, level, and location of pressures on natural resources and relevant stakeholders. . These studies were key elements in the development of appropriate response strategies and defining suitable subroutines for the local communities to facilitate transfer of management of natural resources.

Some biological inventories were implemented in the two corridors and added to those that were already done at the level of the Protected Areas. The inventories confirmed the importance of these two ecosystems as a genetic bridge that is necessary to preserve species that are present in the Protected Areas. They also further revealed the wealth of biodiversity in Madagascar in general. The results of these inventories were published and disseminated to the stakeholders to ensure their integration in their development of action plans.

A more advanced analysis was also completed in strategic interventions zones and targeted localities on specific themes such as of the bush fires, the vulnerability to cyclonic risks, the evolution of plant cover, and 'tavy' (slash and burn). Three of these zone were within LDI's Strategic Intervention Zones.

b) Prioritising Process of ecosystems

Based on the acquired information and knowledge, efforts to prioritize ecosystems were undertaken at the level of MIRAY's three priority eco-regions of Moramanga-Zahamena corridor, the Ranomafana-Andringitra corridor and the Anosy Region. These efforts resulted in the identification of priority conservation zones that were based on ecological and socio-economic criteria.

In the Moramanga-Zahamenas and Ranomafana-Andringitra corridors, the MIRAY team organized two zone prioritizing workshops with the regional actors to develop a participative spatial analysis of the ecosystem and identify vulnerable/priority conservation zones. In the northern corridor, the participatory workshops was held in Andasibe-Mantadia and included regional and national stakeholders. In the Ranomafana-Andringitra corridor, the workshop was organised in Ambalavao and in Anosy region, a regional workshop was organized in Tolagnaro with the assistance of IRG/PAGE. The results of these participatory workshops were published and distributed to the different regional and national partners/actors.

c) Planning for effective management of the environment

- *Environmental planning: Management and organisation*

Pact and its Partners early in the Life of the program initiated the preparation for the development of management plans for the two corridors. In Fianarantsoa, and under the direction of CMP, a draft management plan was produced and will discussed/validated soon in a workshop that will be organized by the current Eco-Regional Transition Program that is implemented by Chemonics.

This management plan will constitute the base for coordinating all future interventions in this eco-region, particularly as Environmental Program III is initiated.

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In addition to the management plans that were developed at the level of the corridors, specific organizational planning was done for the zones to prepare for the transfers of management of forests and protected areas to local communities .

- *Integration of the environment in development Plans*

Eco-regional planning, prioritizing of ecosystems, and development of management plans will only achieve their objectives when their outcomes are considered in the areas' development plans. To this effect, the draft regional Development Plan and the Regional Development Program for the Anosy and Mangoro regions successfully included important environmental content and considerations.

The draft plan for the Regional Development of Anosy, for example, included the creation of 14 priority conservation zones. The environmental stakes of "Conservation" and "Restoration" in this plan received as much considerations "Mining", "Tourism" and other important sectors. They were also a major component of the spatial analysis that defined the 7 regional poles of development.

4.3.3 Environmental Information System (SIE)

MIRAY reinforced the development of the SIE with 3 complementary approaches:

Facilitation of exchange of information;
Capacity strengthening of partners' information systems and;
Integration of partners' information systems into the provincial and/or regional information systems

a) Facilitation of exchange and access to information

At the initial stages of the Environmental Program II, it was clear that data and environmental information available were fragmented among the many different national and international stakeholders. The absence of a sharing mechanism and venues for data exchange greatly hindered access to and inefficient use of information. MIRAY encouraged the development of platforms that facilitate exchange and access to environmental information at the regional, national and international levels. These platforms, such as ARSIE, helped regrouping of organizations that produce or own environmental data and constituted a proper framework for exchange and access to information.

Environmental Information Network System Association (ARSIE) was created in 1998 to facilitate access to environmental information at the national level. It represents around thirty organizations of various levels, including NGOs, associations, ministerial departments, private sector, para-statal and research institutions. ARSIE' Executive Committee, which is composed of a President, a Vice president, Treasurer and Advisers, carry out the necessary management and coordination duties. The organization's operational duties are performed by a small team of permanent staff (Executive Secretary, administrative assistant and an accountant). This team is supported at the technical level by Thematic Groups that are composed of specialized technical staff from member organizations.

ARSIE has 4 Thematic Groups - Legal, the Technical, Communication, and Administration & Finance Group. The Legal Group works on the setting up a statutory framework to enhance exchange of environmental information. Through this commission, workshops on standardization of access and sharing of environmental information were organised and environmental information charter was finalized and ratified by the member organizations.

The Technical/Training Group is responsible for reinforcing the technical aspects of exchange of information, primarily the management of databases, setting up of METADATA and the centre of exchange of spatial information (Metalite). Training in these two themes was organised at the national and regional levels by ARSIE in collaboration with the USGS EROS DATA CENTER. The Group also hired consultants to provide technical support to certain regional information systems such as the Provinces of Tuléar and Fianarantsoa. Around fifty technicians have mastered the concept of exchange centers and the manipulation of METALITE. The gateway to access ONE is currently functional and 5 organizations, including Pact, have already entered their spatial data in METALITE. Organizations that produce or own environmental information and data are currently accustomed with the METADATA system.

The Communication Group maintains updates and informs the member organizations and the general public of ARSIE's activities. It is also in charge of developing the Association's marketing and Promotion plans. ARSIE's Website www.pnae.mg/arsie is the common daily method of accessing news about the Association via the internet. In addition, a quarterly FEHY bulletin information and the activities/events of the Association and its member organizations, further reinforcing the exchange of information that is provided via the internet. ARSIE also organized open days and thematic conferences, at CITE and at the Palais des Sports, during the IG2 (Information Géographique 2 as promotion and marketing campaigns to seek new partnerships and facilitate access to environmental information.

b) Strengthening of partners' information systems

Although some actors owned environmental information, their capacity to exploit it was insufficient to produce knowledge useful in the decision making processes. MIRAY led capacity strengthening activities through training sessions, supply of basic environmental data and references, provision of appropriate materials, and small subsidies to assist these organizations in accomplishing their mission. The MIRAY's technical team members were also permanently

seconded to several key partners such as DGEF, CGP-Forest, CGP Agriculture, CRD Anosy, the Mining Environmental Cell, etc. to promote capacity building and transfer of knowledge at the institutional level.

- *Forestry Information Management Unit*

This unit was created by MIRAY at the central level to capitalize on and manage forest information. . The unit led the effort of creating an inventory and archiving all forest maps available in the various services of the DGEF.

To support this effort, the MIRAY team conducted several training and on-the-job-training sessions on geographical information systems, management of databases, collection of data using Geographic Positioning Systems (GPS) and scanning, and image processing and analysis/spatial modeling. Additionally, MIRAY seconded a technically qualified person to the UGIF to support the implementation of its activities. This person provided continuous technical support to facilitate the unit's work in monitoring exploitation permits, zoning of forest ecosystems and analysis of "conservation sites" that was led by the Durban Vision Group.

At the Regional Level , MIRAY also reinforces Regional Forestry Information Management Units in Fianarantsoa, Moramanga/Toamasina and Anosy/Tolagnaro. MIRAY's technical expertise was made available to the CIREEF to reinforce their initiation of thematic information systems (Transfer of management, monitoring of commercial exploitations, etc) and in the collection, management and processing of regional information. Thematic spatial databases on the management transfers, exploitations and the regional zonings were created and made available.

Through these regional units, MIRAY facilitated networking and integration of forestry information within the various information centres such as CEDII in Fianarantsoa and in regional planning processes such as the preparation of the SDR of Anosy and the Mangoro regional development plan.

- *Protected Areas Information System (SIAP):*

MIRAY's involvement in the setting up and backstopping of the SIAPs was significant. MIRAY participated in the shaping of the management information policy in ANGAP and the role of SIAP. , as well as provided necessary equipment such as computer, sets of information, AO printer, digitizing table, and GPSs. Effective technical training in geographical information systems, management of databases, processing of satellite images were also conducted. The training in remote sensing that was held in Mahajanga in 2003, for example, allowed SIAP's technical staff to install a system of standardization of image processing and conduct land use analysis in all Protected Areas in preparation for the transition End of EP II and Start of EP III. The results of the latter will form the baseline data and indicators for ANGAP in launching the implementation of EP III.

MIRAY supported SIAP's participation in conferences and international seminars including training in Johannesburg, South Africa, and participation of the SIAP representative in Fianarantsoa in the annual AFRICA-G conference that was held in Nairobi, Kenya, in 2001 for the. Additionally, MIRAY provided support in data and information analysis for specific assignments such as the establishment of the GRAP Plan.

- *Information System for Environmental Management for the Ministry of the Energy and Mines (MEM)*

The linkages between the Ministry of Environment and Water and the MEM was recognized by MIRAY team as a crucial step in the conservation of sensitive protected areas. Accordingly, efforts were made to strengthen the relationship between the two ministries through creating channels for exchange of information. To this effect, MIRAY supported the setting up of an information management unit (SIGE) within the Environmental Unit of MEM, and to placed one of its technical teams at SIGE to vitalize and improve its operations. . Training sessions in database management systems, geographical information systems, information technology (Internet), and file management were organised for the technical team of SIGE

SIGE plays a role of maintaining coordination with the MEM's other information systems such as the Mining Land Registry and the PGRM. MIRAY team additionally facilitated the coordination between SIGE and existing information systems in the DGEF, ANGAP and ONE which contributed to better exchange and sharing of environmental information. Such cooperation made it possible for the cross-referencing analysis of data from the mining sector (mining concessions and situation of mining permits) with forest data and the identification of hot spots of conflict between "MINES-FORESTS". Such analysis helped in resolving specific problems such as the monitoring of the mining permit of mineral rushes/ illicit mining in the forest corridor of Ranomafana-Andringitra (Site Ihazomena; Farming Township of Miarinarivo; peripheral Zone of Andringitra National Park).

- *Information systems at the level of the General Coordinations of Project unit (CGP)*

After the change of the governing regime in mid 2002, the new Government decided to establish a General Coordination of Projects (CGP) units in all ministries to improve reporting, monitoring and coordination of interventions within these ministries. As the CGP is a new structure , there was a risk of overlap and unclear division of roles and responsibilities with existing Departments of the Ministries.

MIRAY was requested to support the CGP [1], and in particular assist in establishing an adequate information and management system of spatial databases thereby allowing cgp to achieve ITS mission. Accordingly, MIRAY helped establishing an Information Management Unit in the CGP/ MAEL and the CGP/MEF. The information gathered by these units were primarily based on credit agreements between the Government and donors and other information gathered about projects managed by or under each these Ministries. MIRAY team analyzed the collected data to respond

to emerging needs and decisions and equally created spatial databases according to these needs. MIRAY also provided necessary equipment and materials to these two CGPs and conducted training sessions to familiarize their technical staff with the developed information platforms and tools. In addition, a member of MIRAY's technical team was placed in each CGP to fast track operations. Spatial analysis of the different projects implemented/supervised by the two Ministries were produced and used in major decision-making at the level of these ministries as well as at higher levels including the Presidency of the Republic.

- *Environmental information system for ONE*

MIRAY provided support to ONE in setting up and bringing into operation the Environmental Information Directorate (SIE/DIE) (). Similarly to what has been done in the other units, MIRAY provided adequate facilities, trained ONE's technical staff including on-job guidance in the implementation for certain activities. MIRAY, for example, Finance/facilitated Training of one of ONE's technical staff in exchange centre (hubs, internet gateways allowing exchange of information following international norms) and metadata in the United States. Following this specialized training, and with MIRAY's support, DIE/ONE in collaboration with ARSIE, organized an information/training session for about fifty technicians and decision makers in the environmental sector. A gateway is also presently functional within ONE.

MIRAY provided technical support to assist in special assignments such as the production of the development of the Environmental Control panels and the Report on the state of the Environment. MIRAY also encouraged DIE to install temporary special lines for internet access as well as several workstations for navigation to facilitate the public's access and follow up on the progress of events in World Earth Day in Johannesburg.

- *AGERAS/SAGE information system*

The Eco-regional Planning Component of MIRAY, as per the original project document, focused on the institutional, organizational and technical capacity building of AGERAS. Accordingly, supported the setting up and strengthening of the Information Systems/Follow Up Assessment units (SI/SE) of AGERAS/SAGE. MIRAY's technical team conducted training in Geographic Information Systems (GIS), DBMS (Data Base Management System), remote sensing and follow up assessment of different SAGE activities.

MIRAY also provided support and organized training/exchange visits to France, Kenya (for AFRICA-GIS 2001) for SAGE's technical staff. Necessary materials were also provided to vitalize the SI/SIE units in the regions of Fianarantsoa, Moramanga, Tuléar, and Mahajanga) and at national level. MIRAY assisted SI/SE of AGERAS/SAGE to create a spatial database of stakeholders in their respective regions.

SAGE'S SI/SE currently possesses strong skills in the management of its information. The use of spatial thematic databases in carrying out their activities such as the preparation of local development plans, plans for organizing and following up on the subroutines of the transfers of management/GELOSE become a daily routine for SGAE's SI/SE.

c) Integration of environmental information

Realizing the provision of appropriate level of information is the key to integrate the environment in the various development sectors, MIRAY established and continued to strengthen the links between the various Information Systems that it created with the multi-sectoral systems regional and provincial Information Systems.

4 *The regional Information Systems (SIR) in Mangoro, Lake Alaotra, SOFIA, Diana and Anosy regions*

While continuing to facilitate access and promote environmental information at the regional level, MIRAY encouraged and supported the establishment of several Regional Information Systems:

- RSIRMA was established in Mangoro, in collaboration with AGERAS
- RIR/DEFIS and CEDII were launched in Fianarantsoa; and
- The Consultation structures and their technical components such as CRD and GTDR in the regions of Anosy, Alaotra, Tuléar, Mahajanga, and Antsiranana. .

These SIR made key achievements over the past 5 years. In Antsiranana, an information day was organized by SIR-DIANA to exchange information in preparation for the development of the Province. In Anosy, SIR was the main tool used to establish the Regional Development schema for the CRD and allows reinforcement to the activities of regional actors as CIREEF, ANGAP PN Andohahela, WWF, etc. In Mangoro, the RSIRMA created regional monographs for all communes in the corridor of Mantadia-Zahamena and participated in the completion of a diagnostic analysis of this priority ecosystem. In Mahajanga/SOFIA, the SIR was the main tool for the production of the Regional Plan for Rural Development (PRDR) with regional/municipal monographs and adequate cartographic production.

- *Provincial information systems (Provinces of Fianarantsoa and Mahajanga)*

Through collaboration with the ILO Program (Cornell/Pact), MIRAY participated in setting up and developing the provincial information system in Fianarantsoa and Mahajanga. The Central Technical Units in these two provinces received technical support by MIRAY's team in the provision of data, specialized analysis assignments such as the monitoring of plant cover in the Antarambity zone, the development of the monographs of the communes of the Public Organism of Inter-Communal Cooperation-Fianarantsoa East Coast (FCE OPCI) and the development of a Social Control panel for the Province of Mahajanga. .

4.3.4 Development of Tools and Instruments for monitoring and supervising Instruments

Capitalizing on information and data emerging from databases of the regional stakeholders and those existing at the national level, MIRAY strengthened ONE in the developing tools and instruments for monitoring and supervising the environmental Program such as environmental control panels and the Report on the State of the Environment.

a) Provincial/Regional Environmental Dash Board (TBEP)

Within agreed upon terms of reference, , a team of consultants was placed at the disposal of ONE/DIE for the establishment of the TBEP for the Provinces of Toamasina and Fianarantsoa. The indicators adopted and included in these TBEP corresponded to the needs expressed by the regional stakeholders in terms of monitoring of the state of the environment and in integrating the specificities of each of the two Provinces.

The Control Panel for Fianarantsoa Province was completed and distributed (200 copies of each of the intermediate report and TBE) to relevant national and regional partners. Toamasina's TBEP was also completed, approved and distributed in hard copies and on CD-Rom.

Additionally, a TBER was also finalized for the Anosy Region, which was crucial in terms of the prevailing situation in the region. ANOSY region lacked a regional development schema that are inclusive of environmental indicators and focus on conservation and restoration. At the same time, the region was witnessing the launching of a major mining project with the QMM Company.

ONE ensured the coherence of these TBEP/TBER with the National Environmental Control Panel.

b) The Anosy Environmental Status Report (REE)

The REE for the Anosy region was initiated in the framework of the PAGE program however was left incomplete. . MIRAY, being requested by the regional participants and ONE, agreed to finalize the REE, considering its importance as an instrument for environmental decision-making. This effort was completed in 2003 and the State of the Environment Report for Anosy was published.

c) The Project Monitoring databases

A database for Project Monitoring of the activities of the Environmental Programme was created and is currently functional in ONE. This database provides information on the progress achievements of each executive Agency and budgets for each activity. It also shows the

breakdown of interventions by Sous-prefecture or Province. This database, therefore, constitutes a key tool for demonstrating progress to the Minister of Environment and Water and Forests and to monitor and guide the sector . The tool was adopted and made operation in ONE.

d) The MECIE resource centre

In partnership with and support of the DIE/ONE, a strategic plan for the decentralization of the MECIE information and documentation centers throught Madagascar has been developed and submitted to a wide range of EP2 partners for financial support. The MIRAY Program has financed the decentralization of the MECIE Center in the Province of Fianarantsoa at the CEDII, which was offically inaugurated in June 2003. The CEDII has been developed as a regional information service and Civil Society support center with financing from the USAID Democracy & Governance Office under the ILO Cooperative Agreement, and is a prime example of the possible synergies and collaboration between different USAID-financed programs

4.3.5 Communications and the Fight against Bush Fires

Since the LAUNCHING OF MIRAY, its INFORMATION-Education-Communication (IEC) component was the subject of frequent consultation to fundamentally reorient its approach to be more coherent with the communications strategy defined by all environmental actors in the framework of Madagascar's Environmental Program.

Accordingly, this component focused on the activities at the regional level and the MIRAY team redefined its mission to promote environmental messages in the regions of Antsiranana, Mahajanga, Moramanga/Ambatondrazaka, Fianarantsoa, and Tolagnaro. These messages will target changing the behavior of the population and local players in charge of the sustainable management of natural resources

MIRAY, with the assistance of other USAID Program such as LDI and PAGE, and with the committed involvement of the Executive Agencies of the Environmental Programme II, initiated the "Regional Environmental Communication Plan."(PCER). This PCER coordinates environmental communications and share its messages with all participants so that those targeted are not confused by the various and sometimes contradictory messages. Additionally, support was given to the development and implementation of the Regional Communication Plans (PCR). Each of MIRAY's intervention regions was thus able to develop its PCR according to the specific environmental problems in their region.

In other respects, MIRAY received a mandate to contribute to emergency activities against the battle against bush and forest fires, being a national concern, , in collaboration with the Ministry of the Environment, Water and Forests (MEEF).

a) Development and implementation of the PCR

MIRAY led effective awareness campaigns to its regional partners on the importance of a PCR within a region, especially in sending out coherent messages that will affect behavior in favor of sustainable management of natural resources. MIRAY finalized PCRs for the USAID's five priority eco-regions of Mahajanga, Moramanga Ambatondrazaka, Fianarantsoa, Antsiranana, and Tolagnaro.

- **In Mahajanga:** The PCR themes included bush fires, soil erosion, inappropriate utilization of forest resources, and production of charcoal. Radio messages with specific emphasis on local initiatives and know-how were utilized in the campaign. The messages addresses the region's environmental problems, sources of pressures on the environment, the adverse consequences, and alternatives to be adopted by local communities. . Additionally, a 'lambahoany' symbolizing the local traditional costume and carrying unifying message were produced. This helped spread awareness and also were utilized as awards for activities that are benefiting the environment.
- **In Moramanga Ambatondrazaka:** messages addresses the region's environmental problems of silting up of lake Alaotra, 'tavy'(slash and burn), inappropriate utilization of forest resources, and mining. Main themes in the PCR were: (1) the transfer of management as an alternative method for managing natural and forest resources ; (2) the legislative framework for Tavy and wood extraction is the basis for the application of forestry resource management policies ; (3) The campaign against bush fires is a national priority especially that this region is grouped as a red zone for being feavily affected by fires. Tools used were radio messages and emphasized the role of the Village Cultural Centres (CCV).
- **In Fianarantsoa:** PCR themes were centered on environmental problems, the promotion of the 'Dina'(Fine/compensation), promotion of alternative agricultural methods, and promotion of women's issues. The tools used included posters and radio broadcasts. The training of village instructors in communication techniques was complementing to these tools, as this region placed emphasis on enhancing the value of instructors currently working on different projects on the ground.
- **In Antsiranana:** PCR themes were bush fires, over-use of natural resources, deforestation and deterioration of the mangrove swamps, coral reefs and over-grazing. It is worth noting that this was the only region where partners were solely constituted by the local Consultation structures The tools of communication used include village meetings linked to radio broadcasts, traditional song competitions, use of basketwork products to convey messages, training in village communication techniques, transfer of management of natural resources, exhibition and film shows specific to the region and reforestation at the time of cultural festivals.

- **In Tolagnaro:** PCR themes include bush fires, mining, deterioration of forest resources, and the management wood-based energy sources. Tools used include talks and debate sessions, radio broadcasts and theatre sessions. It should be noted here that Tolagnaro has a radio project that is a model among this type of local communications.
- **Fight against bush fires**

In the communication campaigns against bush fires, the priority main objective was the reduction of bush and forest fires in the 71 'fivondronana'-classified priority targets. The specific objectives of this campaign were:

- To inform the target populations at all levels in the fivondronana (localities) of the problems created by bush and forest fires;
- To promote and to encourage the application of legislative texts governing fires; and
- To activate the local communities in the battle against bush and forest fires.

Assistance was given to communication activities that target the red zones (zones most affected by fires). MIRAY/WWF's support to these activities included the production of communication tools, the training of instructors, the distribution of these tools and monitoring/mapping of campaign gains.

The campaign against fires in 2002-2003 gave significant results, summarized as following:

- (i) Increase awareness and responsiveness of target populations within the fivondronana, leading to the setting up of local committees; and
- (ii) a clear reduction in the surface areas burnt as indicated by satellite pictures and reports transmitted by field staff of the Ministry of the Environment, Water and Forests (MinEnvEF) and its network of regional partners.

In addition, the following issues should also be highlighted:

- Townships that achieved the goals were rewarded and granted green label certificates, which give them priority for receiving funds from development project;
- Local structures in Antsiranana carried out communication activities for sustainable management of natural resources and the battle against fires, were supported by reforestation activities and transfer of management of natural resources.
- Partners were supplied with educational tools and training to inform them of relevant legislation and the forest governance. These partners played the role of educating the target population on current laws and their rights of use.

The MinEnvEF led the implementation of the campaign through nominating a campaign co-coordinator. The decentralized structures of the MinEnvEF were responsible for identification of deserving communities and fire fighting operations especially during the risky periods of outbreaks of fires;

Educational visual tools were distributed at all levels and involved different projects on the ground and local structures;

Radio and TV spots on preventive fight against fires were heavily broadcasted on national and regional radio and TV stations;

Strategy for the protection of the environment and addressing problems of the tavy practice were developed and implemented in the Toamasina and Fianarantsoa regions; and

Partners were active in the promotion of alternative practices. The MinEnvEF also allocated special funds for local reforestation.

4.4 Capacity strengthening

As part of its strengthening efforts, MIRAY placed some of its technical staff inside partners agencies to assist in capacity building and implementation of activities. MIRAY has also adopted other strategies for capacity building, including: (i) training; (ii) institutional and organizational development; (iii) grants of materials and facilities; and (iv) subsidies

4.4.1 Training

a) Planning & Monitoring Evaluation

MIRAY provided training in planning and monitoring for technical staff of partner execution agencies. To assist in the preparation of documents for the Environmental Program III, MIRAY conducted in 2002 special training in Strategic Planning using Netweaver. The participants in this training were the senior staff of the DGA & Monitoring-Assessment manager in ANGAP, Director of Programming/Follow-up-Assessment manager in ANAE, Directors of GELOSE/EMC for SAGE, Director Programming/Follow-up-Assessment manager in ONE, and Chief of Unit Follow-up-Assessment for DGEF, who were responsible for the Environmental Program ().

The MIRAY team also led training/application of monitoring -assessment systems of subroutines to SAGE and its regional partners, especially those benefiting from these subroutines. This training took place in the 6 Provincial capitals and 1 pilot subroutine program was applied as a demonstration in each Province.

MIRAY contracted SAGE to reinforce the regional actors in Mangoro and the Lake Alaotra through training on the development of communal development plans, subroutines, the transfer of management and the plan of development of GELOSE as well as development of successive stages. This training was applied as a demonstration case in the subroutine of Antanandava (Imerimandroso/ Lake Alaotra Region).

a) Development of knowledge

Recognizing the importance of information and knowledge in the planning process, the main theme of the majority of training sessions given by MIRAY were on the theme of "Development of knowledge". This theme includes geographical information system, remote sensing, systems for management of databases, documentary management, data processing/networks and New Information Technologies (NTIC), and Communication. The survey of staff that benefited from these training sessions indicates that around 90% of the technical staff working on Environmental Information Systems within the main partner agencies were trained at least once by MIRAY.

- *Geographic information systems*

Each year, MIRAY organised training for various technical staff of its partner agencies, thus collectively all technical staff from the AGEX partners (DGEF, ANGAP, ONE, SAGE) at the national and regional levels benefited from GIS training either directly through MIRAY or indirectly through training Institutions such as CFSIGE and FTM:

MIRAY's technical staff from Pact early in the life of MIRAY traveled to the priority regions to train all the responsible members from SI/SE of AGERAS/SAGE in GIS and to assist them in setting up the SIR.

For SIAP, training was carried out by CFSIGE and follow-up/assistance was done by MIRAY team.

As for DGEF, 2 training sessions were organised by MIRAY and technical staff were placed and continue to assist DGEF in strengthening the skills gains from these two sessions.

Some strategic partners such as LDI also benefited from training offered by MIRAY.

In addition to the above, , around ten training session in information systems took place at the regional level, benefiting nearly all the technical staff in the regions of Tolagnaro, Fianarantsoa, Fenerive-Est, Moramanga, Alaotra/Ambatondrazaka, SOFIA, DIANA, and ITASY/Bongolava. The training session in Tolagnaro, for example, included ten technical staff from organizations such as CRD, ANGAP, NGO AZAFADY, CIREEF, CIRTOPO, FAFAFI, and ASOS.

By the end of MIRAY, the technical staff of partners agencies reached high level of expertise in Geographic Information Systems. Documents produced in the benefiting institutions indicate that cartographic representation has become a normal practice and its legibility and understanding were greatly improved.

- *Remote Sensing and Image Processing*

Two training sessions in remote sensing and image processing were carried out by MIRAY. A one week session in Moramanga was organised by the FTM and Pact team for all information systems technicians from ONE including SAGE's SI/SE staff. Another one-week session in Mahajanga was conducted for all SIAP staff from DIRANGAP and Sites. During these two training sessions, case studies with examples of image processing of Ankarafantsika Park were analyzed for SIAP.

In addition to the formal sessions, the main partner organizations (ANGAP, ONE, SAGE) also benefited by hiring several of the qualified technical staff who were regularly trained by MIRAY from other organizations as IRG/PAGE, MEM, USAID, SAGE. While remote sensing and image processing required international consultants in the past, currently, national technicians are assuming these responsibilities and carry out monitoring of the changes in land use. For ANGAP, the training provided by MIRAY enabled the implementation of land use studies in all Protected Areas with results being integrated into the baseline indicators for the Environmental Programme III.

- *Data processing, Documentation Management (?), NTIC (New Information Technologies) and network*

As a preliminary requirement to training in Geographical Information and Remote Sensing System, MIRAY required participants to have minimum levels of computer literacy, NTIC and SGBD. Several training sessions were therefore carried out to improve these qualifications at both the national (DGEF, MEM) and the regional (Anosy, Mangoro, Fenerive-Est, Alaotra and Fianarantsoa) levels.

- *Documentary management*

Early in the implementation of MIRAY, the team and partner agencies faced difficulties in locating important documents in the Decentralized Services. For example, forest maps were archived in the various regional and national Technical Departments of the DGEF. To ease the task and to respond to the increasing demand on documentary support by MIRAY's main partners, MIRAY's technical team organized specialized training for the technical staff of the DGEF, the MEM/ Environmental Unit, Mahajanga Province's Technical Services, and regional actors from Tolagnaro in documentation Management and archiving. Currently, the situation has improved and technical staffs in the partner agencies are skilful in filing techniques and management of documents. In addition, MIRAY continued to support this effort by helping in the establishment of the documentation units and installing searchable databases to facilitate locating and accessing needed documents.

- *Communication*

MIRAY held regular technical backstopping and training sessions in planning and monitoring, communication techniques and production tool. The benefiting partners became more professional and are currently better motivated and effective in setting up and implementing these activities.

4.4.2 Institutional and Organizational Development

With the changing regional, national and international In view of the evolution of international, national and regional circumstances, MIRAY had to adapt to frequent changes in the organizational structures of its partners. It became necessary as well to direct the process of institutional strengthening and organizational development to achieve sustainable results that will contribute to realizing the mission, roles and responsibilities of each partner agency.

a) AGERAS

The AGERAS concept emerged between EP I and EP II (1997-1998). At the beginning of EP II, Regional Technical Units were put in place following lessons drawn from a 2-year pilot phase . As the management of the AGERAS component was independly carried out by ONE, it was a necessity to strengthen its teams and enable them to operate autonomously. Throughout this process, MIRAY provided continuous support and backstopping to the organizational development of AGERAS, including backstopping the establishment of the team (identification of positions and qualifications, terms of reference and in the recruiting process, etc).

Each year, MIRAY and the AGERAS team organize a "Team Building" session to adjust its activities and to assess the adequacy of its resources (technical/financial) in view of eh target objectives. It was for example during the session in Mahajanga in 2000 that the "subroutine" approach emerged and that the responsibilities/staff for it was created.

b) Service d'Appui à la gestion de l'Environnement (SAGE) :

During the mid-term review of the Environmental Program and the CFE 2001, it was concluded that ONE was far too large to be functional. With pressure from the main Donors, it was decided to divide ONE into two entities. One entity was made responsible of the operational components (SAGE) and the other entity (ONE) was made responsible for the policy, strategy and instruments component. "SAGE" took over the activities of the former AGERAS components of EMC, GELOSE and BIODIVERSITY. ONE retained the Environmental Impact Studies, the System of Environmental Information components and aspects of coordination of the Environmental Program.

Following this change, MIRAY was requested to support SAGE'S institutional and organizational development. A consultant, Mr. Alfred RAKOTONJANAHARY (ex ONE

DG) was recruited to define an improved institutional vision and organizational structure of SAGE . This activity permitted SAGE to situate itself within the institutional landscape in general and in the environmental sector in particular and created the launching platform of SAGE'S organizational structure.

c) Consultation structures: CRD, CMP, ROSEDA, CRADES, GTDR, CORDAL,

In the preparation for the implementation of the participatory "eco-regional planning" component, it became obvious that a basic condition to the success of this component was the instituting of dynamic Consultation structures. MIRAY and AGERAS therefore pressed and encouraged the regional actors to catalyze the emergence of participatory and neutral planning structures to steer the eco-regional process. These new structures, bringing together several actors with various and sometimes-divergent interests, required an enormous effort in terms of institutional and organizational development. Additionally, it was crucial to link these regional structures with communal and local levels to achieve legitimate regional representation firm foundations. The main Consultation structures are the CRD, CMP, ROSEDA, CRADES, GTDR, and CORDAL

As for the CMP, specific support In term of Organizational and Institutional Development through consultants (Mr. Guy RAZAFINDRALAMBO) was provided . Furthermore, a Series of internal study workshops were organised by MIRAY to improve the functionality of these CMPs. Following the DO/DI process during the year 2003, it was decided to equip the CMP with a small permanent team adaptable according to the availability of resources and responsibilities assigned. The CMP is currently operational and constitutes an indispensable partner for all activities that took place in the Ranomafana-Andringitra corridor and additionally in all aspects concerning the environment of the Province of Fianarantsoa. The advocacy of the CMP was crucial to the ending of illegal logging in Anarafolaka in the rural commune of Miarinarivos and the mining exploitations in Ihazomena in the same community.

In the ANOSY region, MIRAY supported two Consultation structures: the Regional Committee for the Environment (CRE), which undertook regional environmental diagnosis with AGERAS; and the Regional Committee for Development (CRD) which leads the regional development planning and the integration of the environmental dimensions in development. A consultant was hired to assess the institutional and organizational structure of the CRD. Permanent technical structures for CRD were set up and a process of reorganization is currently in motion under the current GDA/LARO project. The CRD of the Anosy also became an indispensable partner in implementing activities in the region and has already begun to guide the regional actors in the planning processes and provision of information. MEDAIR chose Manantenina zone for its interventions after the CRD was switched This was essential as Manantenina has been a zone suffering from Health, education and environmental problems. Comparing the 3 poles of targeted growth of Anosy, TANA-Antsirabe, and Nosy Be, we could attribute the success of the Anosy in the setting up the IG2P Program largely due to the presence and the energy of the CRD.

In the Mangoro and Alaotra regions, the CRDs were set up and put in place with the support of the MIRAY team and AGERAS. These CRD are currently active and constitute a major actor in the development of the region. In 2004, MIRAY supported the CRD Mangoro in the development

of the "Regional Development Plan (PRD)" for the region and the presentation of this document to the technical partners and donors.

In addition to the CMP and the CRD, MIRAY and AGERAS also contributed to the creation of the other regional Consultation structures such as ROSEDA, and CRADES in the Antsiranana Province and the GTDR in the Mahajanga Province. These structures are all operational and constitute important actors in the development of the regions. A round table meeting was organized by CRADES and SIR-DIANA in 2002 to share the problems/vision of development and regional knowledge with the different regional actors and donors.

4.4.3 Management of MIRAY Grants:

The USAID placed funds at the disposal of the MIRAY team to contribute to the financing of developmental activities related to the management of natural resources. The activities to be financed were those initially resulting from a process of dialogue and eco-regional planning, and the funds were to be used only as finance of last recourse.

Having as one objective the building of national institutional capacity, the MIRAY team accordingly ceded management of the grant funds to a Malagasy institution. At the end of the evaluation of the various propositions following an open call for tender, the Tany Meva Foundation was adjudged and mandated as the fund manager.

MIRAY's grant funds are subdivided into two main categories for implementation; each one being the object of a separate convention (Subgrant agreement) with the Tany Meva Foundation: funds for the Regional Dialogue Process (PCR) and support funds for the PCDI of Zahamena through Conservation Internationale de Madagascar.

a) Management of funds for the promotion of biodiversity conservation and durable management of natural resources within the framework of a process of dialogue and regional ecological planning.

Let us recall that the objectives of this funding consist of:

- Optimizing the funds, by seeking ways and means to attain an improved allocation of funds, the continuing ability to finance projects and a mobilization of other funds so as to increase the volume of financing;
- Mobilizing regional partners leading to convergence and complementarity of the stakeholders and their actions;
- Consolidating the gains made during the transition phases of EP1 and EP2 so that the accountability of the national associations already involved and the results obtained within the framework of the preceding financing of the Foundation (under the Pact account) can supplement the interventions of the other stakeholders working in the corridors;
- Professionalizing recipients in project management, organisational development, specializing them in their fields of proven expertise to reinforce and to give added value

- to the competence of regional organizations;
- Diversifying the beneficiaries and the projects financed to take account of the characteristics related to the transition from the classical approach centered on the traditional protected areas to the concept of biological corridors.

During the three years and seven months of the implementation of the project, the major achievements are summarized as:

- The creation of a fund management system and the concept of a process of allocation of funds. Following budgetary restrictions, the imminent expiration of the project and the decision to re-orient the MIRAY program, a committee (WWF, Pact, CI and Tany Meva) to examine the records was set up to validate the dialogue structure projects and those projects considered to be priority. Additionally the intervention zones were centered on Fianarantsoa and Moramanga. Eleven projects were financed by Tany Meva through the Miray grant funds including four conventions passed in 2000 and seven in 2002. In parallel, Pact directly managed subsidy conventions for ten other projects;
- Reinforcement of the organizational capacity of the Tany Meva Foundation. Several consultation programs were undertaken to permit reinforcement of management tools as well as the promotion of the Foundation;
- Before and throughout the project, the program to reinforce the capacities of beneficiaries was undertaken (planning and assembly of projects; financial and administrative management, accompaniment in the realization of activities). Support for the regional dialogue structures was also carried out during the implementation of the expenditure of funds.
- The development of the acquired knowledge of the Foundation regarding fund management, in particular those of USAID;
- The setting up and the appropriation of subroutines which are the genuine programs for durable development, integrating economic, social and environmental questions. However the slowness and the low capacity of the local stakeholders in the setting up of projects are notable in spite of receiving external support. Finally, Tany Meva financed projects of the subroutines resulting from the dialogue process through its own funds;

Principal observations are:

- Until the end of 2001, the rate of fund usage was sluggish due to the low capacity and the slowness of beneficiaries and local stakeholders in the creation of subroutines. Therefore, within the framework of the re-orientation of the MIRAY program from the year 2002, the introduction of a committee to examine dossiers requesting project finance was established within the MIRAY team. The management of a part of the grant funds was directly entrusted to Pact in parallel with the financing mechanism of the Tany Meva Foundation.
- At the end of its first strategic plan, the lessons drawn from MIRAY's grant decision allowed the Foundation to develop its second strategic plan and position itself as a national "supplier of funds" alongside international organizations;
- The groups of project beneficiaries were motivated to continue the activities started through the subsidy. However, because of the low incomes of these groups, they cannot ensure the maintenance of the sites which are entrusted to them. This risks calling into

- question the sustainability of completed activities;
- Beneficiary NGOs are conscious of their responsibilities and this commits them to continue the supervision of the groups until the end of the remaining activities
- New partnerships were established (Tany Meva – ADRA; Tany Meva-SAGE; CRD, CMP and other players within civil society)

b) Support funds for the Zahamena PCDI through CIMAD

The Conservation and Integrated Development Program was initiated by Conservation Internationale de Madagascar. During the period of the project, the Zahamena Project was in its third phase (strategic Plan 1998-2001). The Tany Meva Foundation provided finance of 1.3 billion fmg for this project covering the period November 1 1999 through July 31 2001. Problems encountered were the existence of particularly strong anthropological pressures (forest clearing through tavy, illicit exploitation such as hunting, gathering and tree felling...) involving loss of botanic and zoological biodiversity on the one hand and on the other hand, the degradation of the forest ecosystem of Zahamena and the surrounding slopes.

Taking into account the problems listed above, three specific objectives were retained to improve maintenance of the biodiversity of the Zahamena protected area within the framework of the Conservation and Integrated Development Program:

- Reinforcement of management capacity of the protected area by taking account of management plan,
- Reduction of the pressures on the protected area following rational use of natural resources by neighboring populations,
- The project is a principal element in the eco-regional approach to the Zahamena – Mantadia corridor.

Proposed activities turn on the three following elements: **conservation, development and coordination.**

The following the major achievements of the project should be noted:

- Diversification of peasant incomes;
- Functioning of the Basic Health Centers in the intervention zone;
- Incentive for those involved to present a positive attitude in respect of the protected area;
- Promotion of the environmental education plan and reinforcement of the project's environmental information system;
- Reinforcement of Community structures;
- Acquisition by the Zahamena PCDI of the status of regional leader for conservation through the creation and the functioning of the MATEZA NGO;
- The establishment of an effective administrative structure for the protected area through the reinforcement of the professional capacity of the AP (Protected Area) agents;
- The installation of a sustainable control program for natural resources in three areas of the corridor and the coast;
- The assurance of protection by all the actors through the reinforcement of control and monitoring of the Protected Areas.

The major recommendations at the end of the project evaluation mission are summarized on three lines:

- To base developmental activities on the real needs of the neighboring populations of the protected area to make them self supporting;
- To reinforce the organizational structures for the Union and the Groups on the ground;
- To reinforce the technical and institutional capabilities of the MATEZA NGO so that it can fully ensure continuity.

4.4.4 Donations of Facilities and Equipments

In parallel with the activities strengthening the Information System units of these different partners, MIRAY also carried out the reinforcement of the latter's infrastructures in order to improve their functioning.

94 complete desk-top computer kits were acquired under the MIRAY program of which 34 were made directly available to partners such as MEEF, ANGAP, ONE, SAGE, Ex-Commissariat General for the Environment, ARSIE, Tany Meva. Following problems relating to the payment of TVA for the purchase of data-processing equipment, there were notable delays in the acquisition of materials. Consequently, to fulfill urgent requests from partners, MIRAY was obliged to proceed by providing materials already available (sometimes items acquired for earlier projects such as SAVEM, MITA) for the latter. For this reason, certain items acquired directly under the MIRAY program are recorded for Pact, WWF and CI as replacements for them. The 60 computers available to Pact, CI and WWF are intended for the implementation of any of USAID's subsequent support programs for the environmental sector which these institutions may be called upon to implement (In particular for the IQC / BIOFOR for Pact Madagascar)

INSTITUTION	NUMBER
ANGAP	9
CRD	1
CI	14
MEEF	17
PACT	37
SAGE	5
TANY MEVA	1
CGE	1
WWF	9

In general, in terms of the geographical distribution of equipment, 40 computers are in the regions and the remainder placed at national level. For MEEF, it should be noted that of the 17 items of equipment placed at their disposal, 13 are in the areas (6 provincial capitals, Moramanga and

Tolagnaro)

INSTITUTION	NUMBERS	NATIONAL	REGIONAL
ANGAP	9	8	1
CRD	1	0	1
CI	14	8	6
MEEF	17	4	13
PACT	37	25	12
SAGE	5	3	2
TANY MEVA	1	1	0
CGE	1	0	1
WWF	9	5	4
TOTAL	94	54	40

In addition to office computers, other equipment was also put at the disposition of MIRAY partners:

- 10 portable computers were supplied for partners, 3 for MEEF and 7 for ANGAP's SIAP agents
 - 2 digitizers were supplied respectively for the Systems Information unit at national level for ANGAP and DGEF.
 - ANGAP, ONE and DGEF were each equipped with a large size printer (1 A0 printer for ANGAP and 1 A1 printer each for ONE and DGEF).
 - 2 Video projectors were supplied to DGEF and ONE.
 - VTT, Web Cam, VCR and other materials were also distributed to program partners.
 -
- **For DGEF:**
 - **UGIF:** MIRAY financed the complete rehabilitation of the premises housing the Forest Information Management Unit (UGIF). At the same time a new map cabinet was supplied to this unit to ensure the preservation of the old forest maps dating from the fifties under the best possible conditions on the one hand and to facilitate the access and consultation of forest maps within the DGEF on the other.

In 1999 2 complete computer kits were provided for UGIF by Pact within the framework of the MIRAY program and, at the same time, a local area network for these computers was set up. It should be noted that as a result of problems encountered by the program in the payment of VAT for the purchase of equipment, Pact had to supply UGIF with materials

acquired under previous USAID programs (SAVEM, MITA) to respond to urgent requests from MEEF. This equipment was later extended by MIRAY through CI.

Within the framework for the improvement of information management on forestry enterprises and the introduction of transparency in the management forest royalties, CI through the MIRAY program supplied each of the 6 DIREEF with comprehensive range of computer equipment.

Later, in 2003, the new leaders of the DGEF had a strong commitment to strengthen and to give priority to the information system. A further batch of equipment was therefore provided to the UGIF (later known as SUSI - Service Information Systems Unit) - Specifically 2 complete computer kits (Screen, CPU, UPS...), with 2 printers (1 A4 Format and 1 A1 Format), 1 Zip Reader, 1 digitizer and at the same time a permanent technical assistant was placed within the DGEF.

- **CGP:** A complete computer kit with an external CD-writer and some office furniture were supplied as well as a permanent technical support officer.
- **CIREEF/DIREEF:** CIREEFs in MIRAY's priority intervention zones benefited from the donations of data-processing equipment. Pact particularly focused its support to CIREEF at Tolagnaro and Fianarantsoa. Respectively, 2 complete desktop kits and one 1 Laptop for the Tolagnaro CIREEF, and 1 complete computer kit for the Fianarantsoa CIREEF.

The donations of equipment for these 2 CIREEFs followed the intense activities in progress, particularly the zoning and management of information on forestry enterprises. As earlier emphasized, these donations of equipment always go hand in hand with training and capacity strengthening for optimal use of the materials.

Within the framework of support for the effective management of forest royalties, MIRAY supplied the 6 DIREEFs with complete computer kits to facilitate access to information about forest entrepreneurs.

- **For ANGAP:**

For ANGAP, MIRAY also provided significant quantities of computer equipment in support of the Information System on Protected Areas (Desktop and Laptop) with printers and a digitalizing table. Laptops were supplied to all DIRANGAP SIAPs and, at Headquarters, an AO printer for the national SIAP unit.

It is noteworthy that the Andohahela National Park at Tolagnaro received specific support in terms of equipment: 1 complete computer kit and 1 laptop. This assistance was justified by the development dynamic taking place in the Anosy region with the development of the Regional Development Scheme.

- **For ONE :**

To reinforce the Directorate of Environmental Management of ONE in the implementation of the Environmental Information System, batches of various items of data-processing equipment were donated, specifically 1 A1 Plotter, 1 Video projector, 1 laptop.

- **For SAGE**

To support SAGE in its functions to the development of decision-making tools for decision makers at national and regional levels, 5 lots of computers were supplied - of which 12 at regional level and 3 at national level.

- **Other program partners:**

Other program partners also benefited from MIRAY's support in terms of equipment such as ARSIE, the Ex-Commissariat General for the Environment and Civil Security for the autonomous province of Toamasina, Tany Meva, ASOS and the Tolagnaro CRD...

5 Key lessons learned

5.1 Forest Sector Support Component

5.1.1 ESFUM and the New Forest Policy

One of the main components of MIRAY is to provide promote the forest service through the support of the implementation of the ESFUM component. This component, as originally defined in the Project's document, did not cover all aspects of the new forest policy and important areas such as forest control, plantation management, setting professional standards for forest products markets, and others were left out. USAID and MIRAY's team introduced the following amendments to the component to address the above mentioned areas:

USAID obtained the authorization from the Congress to support state services for forest control. MIRAY undertook research on indigenous species regeneration for plantations and supported requests for reforestation from COBAs, and in some areas using exotic species.

This support, although valuable, remained insufficient as it was not an integral part of MIRAY's interventions, and the above mentioned areas should therefore be addressed in a more comprehensive fashion during EP 3 (see : Key recommendations).

Moreover, the forest service badly needs greater additional and more qualified human resources to implement the new forest policy. MIRAY attempted to reduce the gap by hiring biologists, geographers, GIS experts, sociologists and economists. Although these resources were effective, they are not sustainable and most probably will not be integrated into the current structure of the forest service due to suspended recruitment in the civil service, complex recruitment procedures, and low salaries. This issue should be addressed during EP 3.

5.1.2 Political Commitment

The MIRAY support to ESFUM was mainly focused on field activities within the regional approach and therefore rapidly encountered problems related to the lack of involvement of the forest service, despite the very participatory approach taken. As first analysis of the problem by the forest service it emphasized lack of resources to achieve its mission in the field. Although this is a real issue, important support mobilized in 1999 by the various MEF partners in the Toamasina province (POLFOR, CAF, MIRAY, Zahamena National Park) did not succeed to substantially improve results. On the contrary, it became obvious that, in addition to material support and collaboration, no significant change will occur without clear direction and political will from the central government. For this reason, in 1999, MIRAY supported a series of measures to obtain greater political commitment from the central government utilizing the Multi-Donor Secretariat, the Forest Committee and World Bank. These measures sometimes caused difficult contexts for collaboration at field-level.

5.1.3 Forest Funds

During the Forest Funds establishment phase, the legal and technical measures taken with support from MIRAY were not sufficient to move the fund forward due to inappropriate practices followed by few civil personnel. . . The process improved dramatically only when important tools and procedures that ensured transparent collection and use of forest fees were applied. The same approach was used for the permit allocation activity.

5.1.4 Forest Management Plans

Forest management plans were difficult to develop during EP 2 despite that fact that management plans for hundreds of hectares of forests were designed. These management plans could not be extended scaled up to produce detectable impact on resource management. MIRAY attempted to introduce the following two-step approach to facilitate the process and scale up its impact:

Step 1: Regional management plan - Once the general type of use of the forest areas within a given region is generally defined, proposed management styles that are compatible with the general objectives for the development of the forests and modalities to implement these management styles are designed.

Step 2: Specific management plan - Based on outcomes of step 1, a detailed plan that outlines forest management procedures according to the specific objective and designated forest manager (community, state, private sector, etc.) is produced.

This approach is partially reflected in the zoning process.

5.1.5 Forest Zoning Process

The forest zoning process is a participatory and frequently conducted process between various levels of intervention (local, regional and national).

At regional level, the process relates the improvement and the updating of the forest zoning spatial criteria to the local context of the forest. The complexity and the relevance of this exercise and the need to disseminate it promptly to other regions necessitated the production of guidelines for implementing the process.

As for the approach, the integration of all the stakeholders through the creation of a regional structure is an interesting experience which helped capitalising on all the local information and equally increased the knowledge of the local actors in the forest resource management.

The results of the zoning process appear to be basic elements to any planning and forest zoning activity. Currently, the process is time consuming, given its participatory nature and frequent implementation. It would be more efficient to define potential intermediate results to utilize in the

short term the support of both technologies (production of a BD50), methodology (production of a guidebook) and human resources (training sessions, workshops).

5.1.6 The "corridor management" approach

(See: ecoregional approach)

At the initial stage of MIRAY, the landscape and ecoregional approach was initiated through the AGERAS process. The results of the various diagnosis/analysis of data defined the existing pressures and set the priority among urgent interventions both at the level of communication activities and the consultation with local authorities. To date, these consultation structures and local authorities have jointly developed a conservation vision, which is result of the different processes of forest zoning such as, establishment of PCDs, creation of conservation sites and others. An array of new interactions was therefore created in the regions that made it possible to establish "regional platforms for the management of corridors". However, these platforms emphasized the socio-economic aspects, frequently the regulatory functions in the planning process, but the biodiversity value and biological knowledge were not yet dominant within such structures.

5.1.7 Forest Management Transfer

a) Facilitating the application of the legal framework

The GELOSE approach proved too constraining to effectively ensure forest management transfer under adequate conditions. MIRAY made every effort to simplify the process and suggest to MEF the GCF, which is a more effective alternative for specific cases.

b) Forest administration and management transfer

MIRAY supported a set of NGOs (training, material, technical and financial support) to enable them to pursue the establishment and implementation of GCF activities after the completion of MIRAY. The results of this were not to expectation as the collaboration with the forest service requires time and may involve obstacles... It appeared that this approach was neither the most rapid nor most sustainable. In the absence of an autonomous structure to manage Madagascar forests, there is today no single organization that has the capacity to support and supervise COBAs in the long term to implement GCF, except maybe for certain communes. The forest service currently lacks the required resources despite the frequent training, provision of technical material and methodological material they received. It became apparent that the forest service is not able to implement GCF or GELOSE on its own without the support from external projects. This fact shows that the current forest service has no capacity to direct forest management. It is not possible also to transfer forest management to NGOs and projects as this is not part of their mandate.. The solution to rehabilitate the current forest administration that was implemented through EP2 led to further limitations such as suspension of civil service recruitments, institutional staggering, rigid human resource management and others. The most effective solution remains the creation of an autonomous parastatal organization to direct forest management. Emerging

communal power undoubtedly represents another very important level of competence for community forest management that needs to be considered.

c) The Transfer of management: “Signing contract or preserving forests”

Given that the transfer of management was identified as an approach to empower COBAs and consequently preserve forests, the various support institutions in the forest service tended to prolong the process. In evaluating the process, MIRAY relied on the indicators that are mostly quantitative (expressed in terms of surface areas, in terms of number of contracts signed...) without giving appropriate time for the beneficiaries to internalize the process. Therefore the transfer of management was interpreted and perceived differently by the local communities, or according to the nature of their requests, often oriented to meet short-term needs. There also remains issue of ensuring the technical value and sustainability of the simplified management plan which otherwise would have been hastily developed. Most often, the signing of the simplified contract was the main concern without giving much attention to the accompanying measures or the follow-up after the contract is signed. Investment in efforts and resources should be more focused during the post-signing phase, while integrating development activities as accompanying measures.

5.1.8 Forest Management Local Support vs. Nature Protection Agents (APNs)

In 2002, MIRAY realized that working with Nature Protection Agents (APNs) was not a sustainable solution to forest management. Although these agents provided valuable support, their work conditions are unstable and provide little motivation. Their salary is low and the per-diem for field trips merely compensate for the actual expenses. There is no guarantee that their job will be maintained over time and therefore the APN position gathers most of the disadvantages of civil service without offering substantial benefits, or other forms of compensation. Without an autonomous structure for forest management, there is a high risk that investments made to train these agents might be lost by the end of their project (approximately 50 APNs out of 600 hired through projects in 1995 were actually integrated into civil service).

In order to ensure the sustainability of the activities of forest transfer of management after its completion, MIRAY transferred its expertise to the forest service as well as to other partners such as local NGOs and communes (through VNAs).

5.1.9 Good governance

Efforts for governance can be perceived through the active contribution of different actors in the monitoring of forest resources. Monitoring was not only limited to actions of the forest Administration, but also the local committees in controlling forest resources (VNA) with the purpose of enhancing coordination in activities between the various parties involved (court, law enforcement entities, local authorities, ...). To make it effective and increase transparency, the outcomes of the monitoring and management of the resources should have been more widely publicized,

5.2 CAPE Component

5.2.1 Benefits of Technical Assistance

Overall, the outcomes of MIRAY demonstrate clearly the value of the technical assistance provided to PNM-ANGAP to help building its management capacity in all relevant fields.

Future support programs to PNM-ANGAP should consider technical assistance and supportive monitoring for the effective and efficient implementation of all the instruments and systems developed during recent years as a priority. This should be provided expertise that is well informed and experienced in the fields of PAS management and capacity building.

The donor community is advised to continue providing assistance to PNM-ANGAP during the coming years to maximize the long term return on the investments in the creation and operation of a competent PA agency in Madagascar. Donors should also keep in mind that this assistance should focus on capacity building that leads to enabling PNM-ANGAP to function professionally and financially without external support.

To be effective, capacity building activities should be interactive, and include packages of complementary components that will lead to transfer of knowledge such as on-the job training and training of trainers, manuals and guidelines. Trainers should place trainees in the lead in the development of new systems, diagnosis and analysis of data and others. . In this respect, ANGAP should be selective in the nature of training and equally internalize the capacity building process within its institution. . ANGAP is required to eliminate internal competition and compartmentalization that have unfortunately hampered progress in specific areas and activities during the past years.

5.2.2 The Challenge of Transferring Capacity

The MIRAY experience indicated that effective transferring of capacity through technical assistance is not a given process. Capacity building should be well thought of, planned and implemented. Many factors may affect the capacity building process such as the capacity of the client organization to capture and integrate the acquired knowledge due to the culture of the institution or inadequate human resources. For that reason, CAPE Support Program identified one of its main objectives, early in the Project after a period of trial and error, to prepare the ground within ANGAP and create the right conditions for maximizing capacity transfer. The primary goal was that the institution carry out the necessary structural and human resource adjustments and adopt proper systems and procedures that will allow it to integrate and benefit from the created professional capacities in achieving its new mandate.

MIRAY, within the above mentioned context, continuously assessed this component to increase its impact, which consequently led to the success of the MIRAY's CAPE component in significantly improve the capacity of ANGAP. Additional efforts are still required to build the

capacity of ANGAP in several areas, namely monitoring, control, and evaluation. These areas appear to be part of the organizational culture that will require more effort to influence, but are key issues in improving ANGAP management. It is advisable here that the technical assistance provided utilize and apply participatory monitoring and evaluation techniques in their work with ANGAP in order to reinforce their adoption and application on ANGAP's own activities.

5.2.3 Timeframe for Durable Results, and requirement for continuity

The goals and expected results formulated by the donor community for the PE I and PE II were in several areas too high to achieve within the relatively short duration of these programs. The capacity building of ANGAP is an example, where changing the institutional culture and reaching significant capacity building is a lengthy process, as indicated above.

Continuity in the nature of activities and capacity building programs is essential. Nevertheless, trainers may assess previous capacity building programs and divert to introduce new ideas and methods to fine tune and improve previous accomplishments. ANGAP's Senior Management, learning from the experience of PE I and PE II, strongly requested that continuity be maintained in the nature and areas of technical assistance in order to prevent re-inventing the wheels between each phase of the technical assistance. This should reduce delays due to adventuring in adopting new systems and methods.

Equally, transfer of knowledge and capacity building systems should be kept relatively simple, with reasonable requirements in order to be fast and effective. This was an issue in addressing the relatively new duties of managing the complex PA network. To train ANGAP employees, over 500, required time and tailoring to meet its new mandates given to it early in PE II. However, the high expectations were met, with cost.

It must be acknowledged that capacity building in a relatively new and inexperienced PA network is a "process", more than a "project" aimed at turning up a "product". Progress in a process is often subtle and hard to measure, mainly when it involves the culture of the organization. Donors and partners should maintain patience and persistence in allocating further funds to reach the overall goals.

5.2.4 Importance of Properly Tailoring/Focusing Programs and Actions in Accordance with Expected Results and with the TAs' Specific Skills

As outlined in some of these reports, during the process of providing technical assistance to CAPE, WWF was selected to realign the vision and delivery of assistance to optimize effectiveness while still conforming to the existing Terms of Reference. This step proved to be productive. Additionally, two formal evaluations were carried out during the time of the project to further refine WWF's management of its technical assistance. According to these evaluations, the tasks of the two main technical assistance (TAs) were redefined to be within the technical capacities where they demonstrated the highest level of skills. Moreover, the TAs were asked to increasingly focus their efforts on priority sites in order to maximize impact.

The value of such these evaluations cannot be underestimated and should be encouraged, even made mandatory. There should be no hesitation in taking appropriate measures for readjusting programs as required as long as the purpose is to optimize the impact available skills and specific expected results. Such adjustments will avoid bureaucratic framework that may otherwise be damaging to delivering technical assistance.

5.2.5 Capacity Building in line with the available Skills of the Beneficiaries, and with the Overall Impact on the Organization.

Capacity building process should be responsive to specific needs and potentials of the individuals and the organization as a whole. In addition to assessing the needs of the organizations, the capacity and needs of the individual in the organization should be assessed as well in the design of a successful capacity building program. ANGAP, for example, gained great benefit in technical capacity when specialized capacities building activities and thematic training were provided to carefully selected individuals that meet qualifications and job description. This approach delivered highly experienced staffs that was even able afterward to train their colleagues.

MIRAY also followed reasonable sequence of steps in conducting capacity building which included: a) awareness session to introduce new concepts or systems; b) specialized workshops and, if applicable, joint working sessions and on-the-job training with a TA in order to polish up the skills; and c) Specialized workshop aimed at training trainers. This sequence complements the previously mentioned aspects of a successful capacity building component. Evidently, the benefiting organization should heavily involve in the design and implementation of the capacity building activities. Appropriate human resource management is a key factor in this respect, coupled with careful selection of participants and proper resource allocation. Donors are encouraged to support ANGAP in these efforts.

5.2.6 Overdependence on Technical Assistance

The CAPE support program experience has shown that great benefit can be derived from applying much flexibility, and minimum undue restrictions, to the use of technical assistance resources when facing unforeseen issues and new challenges. However, this flexible approach has its drawbacks. With a relatively important pool of technical assistance resources continuously at hand, ANGAP can be tempted to not always apply a rigorous enough approach in planning and programming its reliance on external support. With time passing, ANGAP's partners have observed an increasing number of unplanned calls for technical assistance, often with neither clear justification nor detailed specific objectives. The organization's providers of assistance have thus been forced to apply tighter control. While perfectly legitimate, such tight control should be avoided as much as possible in a desirable context of cooperative interaction. Moreover, there is a risk in the long term that the client organization pays less and less attention to assessing properly its needs for external support, and to planning its use adequately. Hence, the benefiting institution must be expected to act with more rigor, in order to foster its improved planning and implementation of a result oriented program.

5.3 Eco-regional conservation and development Component

5.3.1 The eco-regional approach

It was confirmed by all partners that the eco-regional approach is the most suitable to address environmental management stakes in Madagascar. The advantages of this approach are:

Activities within this approach emphasized coherent set of ecosystems and took into consideration all other relevant sectors. In designing a response strategy for effective environmental management, the eco-regional approach links environmental problems of numerous interdependent zones/communes with other sectoral stakes. National Parks are integrated in a vision of the conservation of the entirety of an ecosystem rather than approached in an isolated manner.

This approach tend to bring together through its Consultation processes all actors in the planning and defining strategies, conducting various planning processes at multi-level (PRD, PCD, PCR and subroutine Organization Plans /management transfer) and launching these plans. This Consultation process enhances co-ordination of activities and more importantly applied a participatory approach in finding solutions implementing activities and optimizing resources.

5.3.2 The Eco-regional planning process

a) Regional Planning: eco-region

Lesson drawn from the eco-regional approach show that participatory planning process is least functional unless after investing in creating a harmonized and coherent environment accepted by all stakeholders. Ignoring this requirement may set the motion for confusion, discrepancy and contradiction that may lead to negative results in the management and conservation of the eco-region.

b) Planning at multi-local, communal, and local

This national and regional framework for the development of the eco-region should be taken into account in designing specific plans at the communal or local level. This is also applicable to specific zones (inter-commonality, communes, zones to be transferred, subroutines) or defined sectors (communication plan, development plan, infrastructure plans, etc).

5.3.3 Planning and Consultation structures

Consultation structures form "entities" for facilitating the implementation of the eco-regional approach and improving environmental governance.

a) Structure of a common vision of development (harmonisation of vision)

The feedback and discussions at the level of Consultation structures within MIRAY allowed all actors and stakeholders to share their concerns, interests and visions for the eco-region and to orient their activities to correspond to this vision. These structures facilitated the bridging of these diverse interests and visions into an agreed upon development plan of well negotiated and shared objectives. Such structures will continue to be effective in eco-regional development and future projects should encourage their existence and sustainability.

b) Participation Structure for stakeholders and citizens

These structures helped MIRAY to effectively involve stakeholders and the public in the management of the development activities in their regions. Through the OSC, representatives of the communes and communities, state authorities (State Representatives, Elected, Decentralized Services) and the public were able to express their positions within the context of their experience and equally influence decisions taken for development of their regions.

c) Structure of advocacy and development for environmental governance

The Consultation structure were instrumental in facilitating environmental advocacy activities. The continued and frequent Consultation meetings between the local communities, the OSC and the Office for environmental management led to increased environmental knowledge and strengthened the shared vision between the different actors. Within that context, it became easier to alert authorities to resolve crucial environmental problems such as illegal logging or mining.

5.3.4 Information and knowledge

Information and knowledge as **basis for improved environmental planning**: Knowledge of the problems/pressures, state of natural resources, socio-economic conditions of the population of an eco-region and others are key elements in establishing effective plans of management and organization. MIRAY's Team made sure that relevant information was made available to stakeholders at all stages, which was instrumental in achieving goals and reaching strong result.

Information and knowledge as **basis for development of common vision and integration of elements of the environment in development planning**: The diverse interest of the various stakeholders in an eco-region led some of them to develop their own databases that meet their needs. MIRAY succeeded in compiling and analyzing these individual databases to produce a more integrated data that allowed for the development of a common vision. The information and knowledge that originated from the "environment" sector was a catalyst for convincing other sectors in integrating them into their planning and programming processes, thus equally facilitating and benefiting the management of the environment sector.

Information and knowledge as **basis for behavior modification**: Information and knowledge are also major elements in changing attitudes and behavior at the stakeholder and community level. The spatial analyses of bush fires vividly demonstrated the size of this problem in communes and contributed to the success of the combating campaigns in affecting behaviors and consequently reducing bush burning activities.

Information and knowledge are to **master, share and exchange**: It follows from these observations and that the development of information and environmental knowledge is very important in establishing a coherent environmental program. It is therefore necessary to build adequate capacity in the partner agencies in the collection, analysis dissemination/publishing of environmental information, and facilitate its access and exchange between the various stakeholders.

5.3.5 Capacity building is a key the success of MIRAY

Capacity Building should extend beyond the technical and managerial support to address administrative and finance structures of partner agencies. This was a key element in the success of MIRAY of reinforcing sustainability and independence of its partners. The capacity built by MIRAY at all levels provided the proper platform for the implementation of EPIII in Madagascar.

6 Key recommendations for future actions

6.1 Forest Sector Support Component

6.1.1 Pursue forest management transfers

There are now tangible examples of GCF that can be building on to further expand this approach. Future activities in this respect should lean towards favouring “conservation transfers” that are accompanied with simple and participatory monitoring plans. Emphasis should be paid to capitalizing on conservation sites, direct conservation payments, conservation concessions, and plantation enhancement, carbon offsets to build on and develop.

6.1.2 Zoning

It became clear that zoning is a strategic planning tool which can easily be translated into operation plans. Participation of development partners at all levels in the two levels of the process is key to its success. Zoning allows effective integration of the forest policy into the various regional and sector-based planning processes. Such integration is particularly important for future rural development, infrastructure development, and mining cadastre. The current zoning approach still needs to be complemented with recommendations on types of management that are compatible with identified priority objective. At the regional level, the availability of a broad-scale elevation digital model (“modèle numérique de terrain”) (1/50,000 is ideal) was an important step in the zoning process. Future projects in other areas of Madagascar are highly encouraged to integrate these tools into their programs. For further details, please see Annex 1A.

6.1.3 Creation of “independent structures”

Institutional strengthening with the aim of creating independent institutions is the most effective means of overcoming constraints to the implementation of the forest policy. This measure will improve the motivation of agents, attract expertise and bring about a responsive management of human resources. The sustainability and efficiency of the forest control is highly dependent on these interventions. For further details, please see Annex 1A.

6.1.4 “Forest funds”

Forest funds are excellent sources of financial sustainability of the “new “independent structure”. However, for FFRs to be operational, some instruments still need to be developed such as the recruitment of collectors, creation of regional forest commissions, and others.

6.1.5 The New Forest Policy: Effective application

The new forest policy will require more comprehensive support in the future. During EP 2, the new forest strategy was cautiously accepted, however only one of the policy's priorities that address "reducing forest resources degradation" was actually taken into consideration. The other aspects of the policy, such as increasing the national forest area, improving resource use, and improving the economic impact of the sector were not properly addressed. Issues such as expansion of plantations (although very much requested by COBAs), appropriate management of existing plantations, forest product market development, and land tenure security and investments should receive greater attention in future programs.

6.1.6 Transparency

Although this aspect is not clearly stated in the new forest policy, it was fundamental in all aspects of the project. Greater transparency has considerably helped moving exploitation permit allocation and forest funds establishment forward. Transparency should continue to be an important aspect in the zoning process and in the creation of the "independent institutions".

6.1.7 Procedures to implement forest legislation

Forest legislation in Madagascar is fairly complete and well adapted to the local situation. Poor enforcement of this legislation is an issue that remains to be addressed through developing clear procedures and recommendations / guidelines for those individuals or institutions responsible for implementing forest legislation.

6.1.8 Forest Information system

In order to ensure transparency and contribute to a more efficient forest utilization, the databases developed for Toamasina, Moramanga and Fianarantsoa should form the founding blocks for a forest cadastre, similar to the mining cadastre that was established by MIRAY.

6.1.9 Forest economic analysis

The application of economic analysis in the conservation priority areas to highlight the economic impacts of conservation is a key factor to successful forest management. . The TAMARIN model developed by CI and implemented at the scale of Mantadia-Zahamena Corridor is a good example. Future programs should therefore increase the capacities on the ground for a better understanding of economic analysis and management tools.

6.1.10 Corridor approach

Develop **the corridor management approach** with an active contribution of all stakeholders in the conservation priority areas on the basis of the actions undertaken in Mantadia-Zahamena and Bongolava corridors.

6.1.11 Putting in place “conservation site” following Durban President’s commitment

To achieve the vision of expanding protected areas that was set by the President in Durban, the process of identification of conservation sites by the "Durban Vision Group" should be further fine tuned. The determining conservation priority areas with the forest zoning process then facilitating the creation of conservation sites already identified (Makira, Menabe, Daraina, Anjozorobe). The MinEnvEF via the DGEF would be in charge of the coordination and the coherence of various support operators' actions in this process.

6.1.12 Sustainable financing mechanisms

Develop **sustainable financing mechanisms** for conservation activities actions in the Protected Areas managed by ANGAP and the conservation sites.

6.2 CAPE Component

6.2.1 General Considerations

The analysis of the various activities of MIRAY along the duration of the project helped the team to identify soft spots and develop recommendations for future assistance to ANGAP in the coming years. The recommendations mentioned below have been, in the most part, already integrated into the activities and goals of subsequent USAID RFPs that are related or in follow up to MIRAY.

The following address specifically the delivery of technical assistance in priority areas where ANGAP requires continued support of new expertise that the organization had no previous experience:

a) Continuous Assisatnce:

Planning activities based on a clear and detailed vision, specific expected results, and resources required for their implementation:

- Conservation, ecotourism, and community development management based on gathering and management of solid scientific and technical data;
- Monitoring of outputs and results and its impact on resource allocation;
- Systematic assessment of outputs and results and their potential impact on future planning;
- Enhancing the quality of the organization’s human and financial resource management; and
- Building a culture of decentralisation within the organization and application of all related instruments, methods and procedures, including delegations of financial and decisional authority, and institutionalizing a culture of internal service delivery from head office down to the field.

b) New areas of assistance:

Planning and implementation of a marketing approach, and providing expertise in leadership; and Sustainable financing.

6.2.2 Ensure consistency and continuity from one phase of technical assistance to the next, and focus on the long term

The ability to retain knowledge and capacity acquired during CAPE support initiatives was significantly increased when technical assistance applied to concrete activities instead of being limited to developing and teaching concepts. Admittedly, much time and energy was paid to abstract work early in the project in order to design and develop approaches and systems. The situation has evolved since, and ANGAP currently possesses the instruments required for improving its management. In principle, what remains to be done is to fine tune and apply these instruments. The results achieved through MIRAY were concrete in nature in terms of capacity building and it should be assumed that transfer of capacity to NAGAP can now be made faster and more effectively. In this context, **the development of new unrelated concepts and instrument should be avoided in the short term** to avoid risk of discontinuity especially as new TAs become involved within new programs. **The focus must remain reinforcing the existing tools to ensure ANGAP's autonomy.** This implies that focus should on long-term and sustainable capacity building in the near future and ensure that ANGAP has the capacity to implement them.

6.2.3 Support to capacity building/transfer in monitoring of progress, quality control, and evaluation of results is a priority

The early focus on the design and development of systems has sometimes distracted TAs from the capacity building that they were expected to deliver. . TAs spent time and energy on designing concepts and means to impact the culture of the organization, and to share them with ANGAP. This issue was addressed in formal evaluations of technical assistance to the CAPE during the course of the MIRAY project. In other cases, when TAs manage to deliver capacity building in participation and cooperation with the beneficiary organization, the gains and results were did not effect the organizational development.

A priority for TA interventions in the future should be to maximize the transfer of capacity and dedicate more time than usual to provide assistance in specific issues with case studies. Compromises should be avoided in allocating financial resources required for specific training that is often required to ensure that the sustainability of the capacity acquired. As resources are usually limited , it may be advisable to limit down areas of intervention, as applicable, in order to channel more resources to top priority issues.

6.2.4 Design and apply the TA interventions in accordance with the true capabilities of the Institution, and tailor delivery accordingly as applicable

Some TA efforts activities failed to achieve their full impact in the past because ANGAP and its partners were unable to provide appropriate environment for their effective follow up. For example, the Strategic Training Plan was not satisfactorily applied as its implementation requires allocation of human and financial resources that were not made available. Equally, a quality intensive training initiative set up outside of the Country, has resulted in notably pertinent recommendations and action plans that were later left without implementation. Hence, it should be essential in future programs to : **a) give consideration to the realistic impact when planning and programming TA interventions; and b) ensure to the maximum that all conditions achieve this impact are created.**

ANGAP should take appropriate measures in the field of training to ensure that its human resource management will allow for proper selection of participants, sufficient monitoring of progress, and delivery of the complementary initiatives subsequently required for optimized return.

6.2.5 TAs are advised to develop, when appropriate, informal settings for capacity building and on-the-job-training

AS formally stressed by ANGAP's CTP (Senior Technical Assistant) in his final report, as mentioned by the two ATRs, as well as discussed in the formal evaluation reports on technical assistance to the CAPE, a substantial part of the improved capacity and institutional culture at ANGAP resulted from informal interaction between the TAs and their clients.

In this respect, employing LTTAs or utilizing same STTAs in most cases are highly recommended. This approach is advantageous in terms of cutting down on time required for identifying, recruiting new consultants and managing their contracts, especially in the case of complementary or downstream activities. It also helps building informal relationships with the TA providers and more understanding of the TAs of the nature of work and the institutional setting of their client.

6.2.6 Assistance to ANGAP in identifying its needs for specialized support, and setting realistic expectations.

At this stage, further focus on technical assistance in capacity building, should most likely enable ANGAP to achieve sufficient management autonomy in the next few years. . Afterwards, ANGAP will undoubtedly continue to utilize external assistance for short-term specialized consultancies, as it full autonomy. In the meantime, donor community **should continue to support PNM-ANGAP by funding technical assistance with an overall view of developing towards financial and technical independence.**

TAs may also play a role in defining ANGAP'S needs for assistance and planning for venues to reach autonomy.

6.2.7 Foster and support collaboration with partner organizations and institutions

With external assistance from its consultants, PNM-ANGAP succeeded in developing and maintaining constructive relationships with national and international partners. The recent efforts to improve cooperation with the national private sector in the field of ecotourism is a promising example. At the international level, the hard work accomplished by ANGAP and its TAs to develop and maintain good relationships with leading environmental NGOs helped enhance the organization's credibility and to position itself favorably in terms of sustainable financing. **High priority must continue to be given to partnerships, and build the capacity to network and pursue new partnerships, including the capability to attend international conferences and workshops.**

Apriority consideration should be given to cooperation between PNM-ANGAP and the IUCN World Commission on Protected Areas (WCPA). This relationship could prove crucial for the sustainable development of the Madagascar PA network, as well as for its institutional and financial sustainability.

Cooperation with national organizations and the private sector is equally important to achieve sustainable financing, and maximize ANGAP's knowledge base. The success of environmental education projects /programs, and socio-economic development initiatives proposed by ANGAP, relies upon solid cooperation with these local partnerships with communities, decision makers, governmental organizations, and NGOs. **In this respect, it is essential that PNM-ANGAP develops and implement clear strategies for improving its integration into the relevant conservation and sustainable development program at the community, provincial, and national levels.**

6.2.8 Request for technical assistance should be mutually studied and carefully

As mentioned earlier, there is a risk that PNM-ANGAP may become overly dependant on technical assistance. In response, managers of technical assistance programs should apply criteria for requesting and approving technical assistance. **PNM-ANGAP, on the other hand, should be encouraged to play an active role in internally prioritizing its needs for external assistance, which is in part an important component of ANGAP's capacity building efforts.**

ANGAP should also be encouraged to take the lead on monitoring progress, and evaluating outputs and outcomes.

Future TA programs should nevertheless allow for flexibility to address and respond to issue that may surface during the implementation of the project.

6.3 Conservation and Eco-regional development component

6.3.1 To consolidate and build environmental governance based on the eco-regional approach

MIRAY, through support of the Environmental Program II, enabled it to place executives favorable to the initiation of the eco-regional approach in the 5 initially defined ecoregions. This is on a scale appropriate to establishing cohesive elements and to improve efforts at local/communal levels and activities justifying protection of the environment while taking account of the political and strategic frameworks developed at the national level. The proposed follow-up aims to reinforce and consolidate these assets so that this approach becomes the basis and the heart of all conservation and environmental governance activities.

6.3.2 To continue to favor development of opportunities for the participation and dialogue of stakeholders

The effectiveness of the eco-regional approach and the environmental governance is based mainly on the promotion of participation of all the actors in the resolution of environmental problems and development. These opportunities for participation and dialogue through the regional/communal dialogue structures (CMP, CRD, CCC, etc) should be reinforced. Continuous capacity reinforcement activities will be necessary so that they can carry out their missions and roles appropriately. In addition to these participative functions, these structures constitute contexts facilitating dialogue between the State and the OSC and are regarded as a means of channeling the debates.

6.3.3 To reinforce mechanisms of information management and knowledge development

Environmental information and knowledge were also major elements of the eco-regional approach. They form the basis of improved participation, involvement and ownership and support the development of dialogue and consensus between stakeholders. Moreover, the availability of reliable and up to date information and analyses guarantees that the technical documents compiled are based on realities and reflect the interests of participants.

Efforts will be necessary to ensure that the reflex of using information and knowledge in the decision-making processes, in particular eco-regional planning, is established in an automatic and consistent manner. Specific and intensive interventions should be carried out so that the environmental information available is shared and accessible by other actors as well as those of the environment sector and those resulting from other sectors. Environmental actors, particularly MINENVEF including DGEF, ANGAP and ONE should gain improved mastery of environmental information and knowledge. The establishment, development and/or the application of clear information management policies centered on publicizing and sharing should be supported and accentuated. With the current advent of NTIC (new information technologies), the Ministry as well as the major environmental programs should develop distribution of information and establishment of forums through the Net

6.3.4 To consolidate the assets of eco-regional planning and to refine the products

In addition to the aspects of dialogue which constitute the basis for ownership, the process of eco-regional planning must lead to the publishing of technical guides such as management plans and installation plans for the transfers of management to provide a structure for the activities in the various zones. For the Fianarantsoa corridor, the management plan should be finalized and applied during EP III and the adjustment plans for the management transfers should be refined according to the evaluation of their implementation. For the Morazaka corridor, this plan should also be compiled and finalized as, in spite of many attempts, the document itself is not yet available. For Anosy, certain sites in the 14 priority zones identified during the development of the SDR merit intensive activities based on suitable management plans.

6.3.5 To reinforce information-education communication through rural radio programs

The rural populations nearest to the ecosystems are very often ill-informed and do not have any coherent understanding of their environment. Continuous and consistent information-education-communication activities should always be carried out to reinforce the assets gained during EP II. Drawing on the conclusion of earlier results and the evaluation of the various means used, the promotion of rural radio programs should have priority. The communities living in the vicinity of the eco-regions should have access to environmental messages conveyed through oral communications based on listening. This reduces the risk of failure due to the problems of illiteracy and lack of schooling of this sector of the population.

6.3.6 To reinforce transverse integration (intersectoral) of the environment (Mainstreaming)

One of the great assets of the Environmental Program II was the integration of the environment with other sectors. In particular the emergence of the Environmental Cells in the various Ministries and/or the major national projects (PSDR, FID, etc) was observed. These constituted gateways to take the environment into account in their planning and programming mechanisms. In future, this transverse integration should be reinforced and deepened and concrete actions implemented so that the environmental dimension becomes one of the first reflexes of decision makers/stakeholders from other sectors.

6.3.7 To reinforce coherence and integration of vision on the environment at all levels

(Kolo Harena, management transfer)

The result of any eco-regional planning process should be palpable on the ground – that is at commune and the village levels. Improved organization of communities and stakeholders at the regional level is not therefore sufficient to give tangible results. It is necessary to forge a sufficiently strong anchorage at base level to link vision and reality. This anchorage can be made

by establishing connections between the various local structures similar to those created within the framework of management transfers by Kolo Harena, the village Associations, the CCC at commune level and the dialogue cells at regional level. For the follow-up of the environmental programs, a particular effort should evolve so that an environment favorable to inter-level links is effective.

6.3.8 ENVIRONMENT versus ECONOMIC DEVELOPMENT

The integration of the environmental dimension should be carried out systematically when all development programs are initiated. This component should not be limited only to aspects of safeguarding and of conservation but must also take into account the valorization of natural resources as a one of the major potentialities of development of a commune, an area and even the nation. This ideal is to associate these natural resources within the context of economic development; it constitutes the principal link binding them to mankind - who must be the center of major interests and which can influence the sustainable safeguard of the environment.

7 CONCLUSION:

MIRAY achieved the goals initially pursued, in particular the creation, development and promotion of a framework favorable to environmental management. The eco-regional approach made it possible to determine the environmental problems in a global context and to institute a new framework of activities enabling all stakeholders to play their part in environmental endeavors in a coherent manner. This approach also favored the development of improved knowledge of natural resources and was primordial in the integration of the environment as a potentiality for durable development of the country.

In conclusion, past gains should be consolidated, continued and even reinforced so that the eco-regional process becomes the kernel of all environmental efforts, be they those aiming at protecting biodiversity and ecosystems (terrestrial, marine and coastal), those centered on soil and slope restoration, or those focused on sustainable valorizations of these resources. "The eco-regional approach - guarantor of conservation of the environment and of durable development"