
**Landscape
Development
Interventions**



Semi Annual Report

Volume I: LDI Regular Activities

July 2000 - December 2000

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ACRONYMS

| | |
|----------|---|
| AUE | Association des Usagers de l'eau (Water Users Association) |
| AUP | Association des Usagers des Pistes (Road Users Association) |
| AGERAS | Appui à la Gestion Régionalisée et à l'Approche Spatiale |
| AGEX | Agence d'Execution |
| ANAE | Association Nationale pour les Actions Environnementales |
| ANGAP | Association Nationale pour la Gestion des Aires Protégées |
| AQUALMA | Aquaculture de Mahajamba |
| ATS | Association Tefy Saina |
| BEST | Bureau d'Expertise Sociale et de Diffusion Technique |
| BRF | Bois Rameaux Fragmenté |
| BTM | Bankin'Ny Tantsaha Mpamokatra |
| BOA | Bank of Africa |
| CAF | Cellule d'Appui Forestier |
| CANFOR | Cantonement Forestier |
| CANFORET | Forest Service Cantonment |
| CAP | Commercial Agricultural Promotion |
| CDC | Comité de Développement Communal |
| CDD | Departmental Development Committee |
| CCEE | Centre Culturel pour l'Education à l'Environnement |
| CCV | Centres Culturels Villageois |
| CDIA | Centre de Diffusion pour l'Intensification Agricole |
| CE | Conservation Enterprises |
| CEIF | Conservation Enterprises Investment Funds |
| CEM | Caisse d'Epargne de Madagascar |
| CGS | Community Granary Storage |
| CIIFAD | Cornell International Institute for Food, Agriculture and Development |
| CIIFOR | Cornell International Institute for Forestry |
| CIM | Centre d'Interpretation de Moramanga |
| CIRAGRI | Circonscription de l'Agriculture |
| CIREL | Circonscription de l'Elevage |
| CIREF | Circonscription des Eaux et Forêts |
| CIRPECH | Circonscription de la Pêche et des Ressources Halieutiques |
| CITE | Centre d'Information Technique et Economique |
| CJPM | Comité Jean Pain Madagascar |
| CLB | Comité Local de Base |
| COPIL | Comité de Pilotage |
| CPSE | Comité de Planification et de Suivi & Evaluation |
| CPF | Counterpart Funds |
| COP | Chief of Party |
| CRD | Comité Régional de Développement |
| CTA | Cellule d'appui Technique (AGERAS) |
| DPV | Direction de la Protection des Végétaux |
| DIREF | Direction des Eaux et Forêts |
| EAM | Entreprendre à Madagascar |
| EASTA | Ecole d'Application des Sciences Techniques et Agricoles |
| ECOCERT | Entreprise de Certification Organique/biologique |
| EFE | Entreprises Favorables à l'environnement |
| EIA | Environmental Impact Assessment |
| EJ | Expert Junior |
| EP II | Environmental Program 2 |
| ESSA | Ecole Supérieure des Sciences Agronomiques |
| ETN | Eco-Tourisme Nord |
| FENU | Fonds d'équipements des Nations Unies |
| FMG | Malagasy Francs |
| FCE | Fianarantsoa Cote Est Railroad |
| FID | Fonds d'intervention pour le Développement |
| FIEFE | Fonds d'investissement pour les entreprises favorables à l'environnement |
| FITIM | Filature et Tissage de Madagascar (Spinning and Weaving of Madagascar) |
| FOFIFA | Foibe Fikarohana ho amin'ny Fampandrosoana ny eny Ambanivohitra |
| GAIM | Groupement Agro-Industriel de Moramanga |
| GCRN | Gestion Communautaire des Ressources Naturelles |
| GCV | Greniers Communautaires Villageois (Community Grain Storage Facilities) |
| GELOSE | Gestion Locale Sécurisée |
| GIS | Geographic Information System |
| GPF | Gestion Participative des Forêts |
| GPS | Global Positioning System |
| GTDR | Grpoe de Travail pour le Développement Régional (PADR) |
| GR | Génir Rural |
| IPNR | Institut pour la Promotion Nationale de la Riziculture |
| IR | Intermediate Result |

| | |
|----------|---|
| IRRI | International Rice Research Institute |
| ISC | Input Supply Centers |
| KH | Kolo Harena |
| LDI | Landscape Development Interventions |
| MARP | Méthode Accélérée de Recherche Participative |
| M&E | Monitoring & Evaluation |
| MEF | Ministère des Eaux et Forêts |
| MIRAY | Consortium PACT – Conservation International – WWF |
| MSC | Malagasy Seafood Company |
| NRM | Natural Resources Management |
| NGO | Non-Government Organization |
| ODAI | Opération de Développement Agricole Intégré |
| ODASE | Opération de Développement Agricole du Sud Est |
| ONE | Office National de l'Environnement |
| OTIV | Mutuelle d'Épargne et de Crédit |
| PACT | Private Agencies Collaborating Together |
| PCR | Plan de Communication Régional |
| PE1 | Programme Environnemental #1 |
| PDRAB | Projet de Développement Régional d'Ambato Boeni |
| PPIM | Programme Pilote Intégrée de Mahajanga |
| PLAE | Programme de Lutte Anti-Erosive |
| PMF | Participatory Forest Management |
| PNLCP | Programme National de Lutte Contre la Pauvreté |
| POLFOR | Politique Forestière |
| PRA | Participatory Rural Appraisal |
| PRB | Projet Rizicole de Betsiboka |
| RFPD | Regional Forestry Plan Director |
| RN | Route Nationale |
| RRA | Rapid Rural Appraisal |
| RS | Ressources Vertes |
| SAF/FJKM | Sampan'Asa Fampandrosoana de l'Eglise Protestante |
| SFR | Sécurisation Foncière Relative |
| SO3 | Strategic Objective # 3 |
| SR | Sub-Result |
| SRI/SRA | Système de riziculture Intensif/Système de riziculture amélioré |
| SZI | Strategic Zone of Intervention |
| WWF | World Wide Fund |
| YNC | Young Naturalist Clubs |
| ZSI | Zone(s) Stratégique(s) d'Intervention |
| ZIE | Ecotourism Investment Zones |

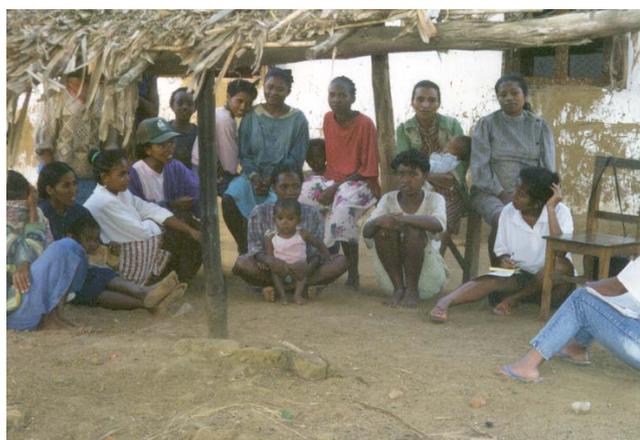
1. Overview and main results

We are pleased to report that LDI continued to have a strong performance during the 6 month period, from July 1st to December 31st, 2000. Not only did the LDI team reached and even exceeded many second year targets, in a few months, but also we were able to rapidly intervene in the Fianarantsoa and Moramanga regions, to achieve concrete results under the new Cyclone Recovery Program. Kolo Harena associations expanded at an accelerated pace, requests for financial assistance from conservation enterprises surged at an impressive rythm, while regional teams were busy rehabilitating agricultural infrastructure severely damaged by cyclones Eline and Gloria. At the same time, LDI developed and strengthened productive partnerships with more than 60 governmental institutions, NGOs, private businesses and other projects.

1.1 Highlights

1.1.1 Regular Activities

Expansion of Kolo Harena Associations from 2,275 members in June, 2000 to 7,300 in December 2000. This remarkable result is due to the growing demand from local communities to participate in formalized associations that promote a more sustainable and profitable management of natural resources. Also, we helped existing water users associations (AUE) to become Kolo Harena, by encouraging them to formerly renounce to destructive practices, such as slash and burn agriculture, so that they can qualify for LDI's technical and material assistance, through the Cyclone Recovery Program. Finally, some informal groups and associations supported by other projects expressed the desire to work more closely with LDI. They accepted to develop bi-laws or to amend their dina, to include provisions for environmental protection and to commit themselves to sustainable agriculture. Those associations also became Kolo Harena. Altogether, LDI is working in 190 villages, and is helping farmer associations set up official federations that will participate in rural development planning and will have more power to deal with government and credit institutions as well as private businesses. Kolo Harena associations and federations are the main foundations of sustainable progress for rural communities and the best vehicles to insert them in a modern economy.



Kolo Harena members during meeting

| | Targets July 2000 – June 2001 | Fianarantsoa | | Mahajanga | | Moramanga | | Situation as of December 2000 | |
|--|--|---------------------|--------|------------------|--------|------------------|--------|--|--------|
| Number of Kolo Harena associations | 280 | 169 | | 51 | | 60 | | 280 | |
| - Kolo Harena classiques | | 80 | | 51 | | 50 | | 181 | |
| - Kolo Harena AUE | | ND | | | | 2 | | 2 | |
| - Other Kolo Harena | | 89 | | | | 8 | | 97 | |
| Number of members: | | Hommes | Femmes | Hommes | Femmes | Hommes | Femmes | Hommes | Femmes |
| - Kolo Harena classiques | | 667 | 242 | 731 | 166 | 662 | 468 | 2060 | 876 |
| - Kolo Harena AUE | | 1807 | ND | | | 900 | ND | 2707 | ND |
| - Other Kolo Harena | | 1056 | 313 | | | 300 | ND | 1356 | 313 |
| Total | 6000 | 4085 | | 897 | | 2330 | | 7312 | |
| Number of villages involved in community based natural resource management | 45 | 14 | | 18 | | 11 | | 43 | |
| Number of villages involved in sustainable use of natural resources | 200 | 127 | | 22 | | 41 | | 190 | |

Successful start-up of the “Fonds d’Investissement pour les Entreprises Favorables à l’Environnement” (FIEFE) and promising linkages between farmers and the private sector. By the end of December 2000, the FIEFE, which began its activities only in July 2000, had received 12 loan applications, representing more than \$800,000, from companies mainly involved in ecotourism development and essential oil production. Participating banks have shown some delay in processing applications and LDI has taken the necessary steps to speed up the whole process. Simultaneously, in order to reinforce and broaden relationships between farmer associations and agri-businesses, we arranged an important meeting in Fianarantsoa, where representatives of Kolo Harena were able to discuss with executives of key companies. One of the concrete outcomes of this meeting was a series of sales agreements that will enable farmers to sell their products at a better price, without any margin for useless intermediaries.

Malagasy government participation and contribution to LDI. The Malagasy government has shown steady support of our program and has undoubtedly contributed to the success of some of our major achievements. For instance, in Isalo, the “Réserve Foncière Touristique” was officially created in December, 2000, on the basis of a master plan developed by LDI. A web site was set up by the Ministry of Tourism, to auction properties for ecolodges that must strictly comply with architectural and environmental norms defined by specialists hired by LDI. The Ministry of Transport signed in December a memorandum of understanding to officially launch the privatization process of FCE and take fundamental measures to seriously improve the management of the southern railroad. The Minister himself paid a visit to FCE to better appreciate the scope and impact of our efforts and provide his full backing to LDI’s interventions. LDI is considered as a reliable interlocutor by the “Equipe Permanente de Pilotage” (EPP) of the PADR, in charge of developing, coordinating and monitoring the rural development plan.

Capacity building of LDI partners. The table in page 8 shows the great number of partners working with LDI, in many areas from agricultural intensification to environmental education and eco-regional planning. We have organized training sessions to reinforce the technical and organizational capacity of some NGOs. But, above all, we have systematically promoted a performance-based approach that obliges partners to respect timely and concrete deliverables, under strict contractual arrangements. We have not always been successful, but progress has been accomplished in many fields to build the technical expertise of partners, so that they can effectively assist farmer associations, on a sustainable basis.

Principal results during the first semester July-December 2000 are shown in the following page.

LDI Success stories

LDI Mahajanga Stories

A cash crop for the rest of us.



Hibiscus sabdariffa

Crops grown by farmers serve two important roles: food for the family and income. Typically, crops have been categorized as either food crops or cash crops. But this division, never completely accurate, is even less so now, as farmers are forced to sell more and more of their food crops for income. One reason for this is that the traditional cash crops (cotton, tobacco, vegetables) will only grow on fertile soils with adequate supplies of water. For most farmers in Mahajanga, these conditions are rarely met. Therefore, they are forced to grow and sell food crops corn or cassava or rice for income. The problem arises because prices for food crops are typically low, and that fact combined with typically low yields, means that many farmers are compromising their household food security to earn needed cash.

Hibiscus sabdariffa, known by many names around the world (jamaica, roselle, bissap, oseille rouge, karkade) is an annual plant of the Malvaceae (cotton/okra) family that produces succulent red calyces, which, when dried, can be used to make juice, tea, preserves and other food products. It is a common

ingredient in many herbal teas sold in the US. The interest in this plant for farmers in Mahajanga, is that it grows on sandy upland soils and has low water requirements. Tests conducted at the Center for Agricultural Intensification at Miadana in the first half of last year demonstrated that farmers could grow Hibiscus on a degraded soil with only 5-10 tons of manure per hectare as an amendment, and under unfavorable rainfall conditions (the rains stopped 1 month early).

At first LDI envisioned having farmers produce hibiscus for the export market. But low international prices and exacting quality standards, given the moderate yield potential and enormous post-harvest labor requirements for the crop, forced a rethinking of the strategy. Hibiscus exists in Madagascar but only in small gardens and uncultivated patches here and there. It is basically unknown to the larger public. Nevertheless, LDI decided to explore the possibility of developing the local market. Several food industry firms (producers of fruit juices, jams, and the dry calyces to experiment with. Several firms were contacted and given samples of the juice and expressed interest. And one firm, Homéopharma, immediately developed and tested a hibiscus-based tea. The success of this test-marketing, and following a series of taste-panel tests, Homéopharma asked LDI to provide technical assistance in developing and marketing hibiscus products. In return, Homéopharma is ready to contract with farmers in the SZI to purchase the dried calyces.

With LDI assistance, Kolo Harena farmers in all 4 ZSIs planted test plots of hibiscus in December 2000 in preparation for this emerging market.

From charcoal to forest management.

The Anosomijoro forest lies midway along the Bekobay Road rehabilitated by CAP in the Ambalakida Commune. It is mostly degraded secondary forest that was on the verge of disappearing altogether when CAP initiated discussions with charcoal producers in the villages adjoining the forest, in hopes of protecting the forest and thus the road that runs through it. CAP offered technical assistance to those wishing to farm instead of making charcoal. LDI picked up where CAP left off and continued to support the charcoal-producer groups' efforts to convert to agriculture: providing credit for crop seed and tools, and a resident Expert Junior to train them in improved cropping practices. However, this was not enough to protect the forest, which remained an open-access resource. Anyone from anywhere could come in and cut trees; and they did.

The charcoal groups decided they needed some control over the forest, and asked LDI to help in getting management rights to the forest transferred to them. The process took all of one year-plus with the coordinated efforts of the Water and Forests Service, the Commune and LDI. First the community members were organized into 3 officially recognized associations (Mahavonjy, Tsiresy and Ezaka), with officers and formal internal operating procedures. Then the forest boundaries were marked out, mapped and divided into 3 areas to be managed individually by each of the 3 local communities concerned. Thirdly, the Water and Forests Service did an inventory of the forest's resources. Several meetings of stakeholders followed, during which a forest management plan and a set of sanctions (Dina) were prepared.



After this signature, 1,739 ha of forest will be transferred to the local communities' management in Anosomijoro

The process culminated on December 14, 2000, with the signature of a tripartite contract by the 3 Local Communities, the Water and Forests Service and the Mayor of the Commune of Ambalakida. The contract effectively transferred forest management rights to 1739 hectares of forest to the local communities, who are expected to follow the terms of the agreed upon technical specifications in the management plan.

As a result of the combined efforts to facilitate a transition to agriculture and the transfer of management rights to the forest, 80% of the members of the 3 communities have abandoned charcoal making.

LDI Fianarantsoa Stories

Integrated Rice Production and Aquaculture

Prior to the arrival of the LDI program in the SZI of Sendrisoa, M. Daniel R. had never raised fish in a rice field! He vaguely heard of cases of farmers buying fingerlings from the nearby village of Majamba and raising them in small ponds as has been traditionally done in Fianarantsoa for decades, but he lacked the technical information on how to start up fish production. With the arrival of the LDI Program in the village of Sendrisoa, near the forest corridor of Andringitra National Park, he decided to experiment by raising Royal Carp in a small fishpond of 6 ares designed with the help of the LDI field agent. M. Daniel initially invested 87500 FMG (about \$13) to purchase 350 fingerlings sold through the LDI agent. Four months later, he produced enough fish to not only eat fresh Royal Carp on a regular basis, but he sold 65 kg of fish at the local market and to surrounding farmers to generate a profit of 400,000 FMG (about \$61) – a very large sum, when considering that the average annual income of the region is only 500,000 FMG per year! Following this success, M. Daniel purchased 800 fingerlings through the LDI Agricultural Supply Center in Sendrisoa and built fish ponds on 30 ares of land.

Fish culture throughout the LDI SZI has been taking off at a remarkably fast pace. Just one year ago, LDI introduced fish culture by facilitating the sale to farmers of 7000 fingerlings. Technical advice was offered to the farmers through a NGO partner, Miray Mahefa. Following initial successes this past year, the Kolo Harena the length of the Ranomafana – Andringitra forest corridor asked LDI to help them establish decentralized fishery nurseries through the region in order to assure a constant supply of fingerlings to both Kolo Harena and non-Kolo Harena farmers. Presently, 12 commercial fingerling centers operated by individual members of Kolo Harena are found the length of the eastern and western sides of the corridor. About 60,000 fingerlings are being produced at this time and firm orders have been placed for about 60% of these fish.



The product of the fish farming is almost 2 tons, a source of more than 10 million Fmg for 27 families in Sendrisoa.

Fish production occurs in both ponds and rice fields. Roughly 40% of the farmers engaged in Royal Carp production raise fish directly in rice fields whereas the remaining 60% raise them intensively in small earthen catchments. Farmers build compost piles within the rice fields and fishponds to encourage an algae bloom consumed by the Royal Carp but also supplement this feeding with waste agricultural produce like rice bran. After each season, the farmers dig out the manure rich mud in and around the compost piles and use this to fertilize dry season garden plots or small parcels of land devoted to intensive rice production (SRI). Farmers report that yields on these plots are significantly higher.

Farmers remark on the many benefits of fish production. During this year's severe hungry season, fish was consumed extensively to stave off hunger in the household. Combined with potato production introduced in the area by LDI, severe calorie and protein shortages were avoided in the Kolo Harena households. But problems remain. Farmers are having difficulty controlling fish theft – a widespread problem in the Sendrisoa and Miarinarivo area due to the severe food shortages haunting the region. Rice, manioc, livestock, honey, and any other available food is constantly being stolen by armed robbers. This year, some farmers fear that the market for fingerlings and full-grown fish will be saturated unless measures are taken to expand the market catchment.

Rural Credit

The LDI rural credit system is progressively expanding, not always in a extremely rapid and dramatic fashion, but with caution. After the establishment of the credit system in December 1999 with the BOA bank and the Entreprenre à Madagascar program in May, 2000, LDI Fianarantsoa has extended credit to 11 Kolo Harena totaling 14,237,000 FMG. The majority of these funds were employed by 57 families at three sites, along the corridor, to stock 17 metric tons of paddy rice. Despite the poor harvests recorded after the cyclones Eline and Gloria, the recovery rate is currently 98% with only 200,000 FMG remaining from one Kolo Harena.

The rural credit system is more than the simple granting of credit to Kolo Harena members. It is also an educational venture whereby LDI field agents and staff from partner organizations work with the credit applicants to utilize responsibly the small credit sums. For instance, the 10 kolo Harena utilized their credit for a variety of activities such as the purchase of improved potato varieties from the Agricultural Supply Centers, piglets for a fattening program, and small household goods. The Kolo Harena of Tabakery and Soafianatra raised pigs and potatoes this past dry season with credit received through the program. Following the sale of the fattened pigs, they reimbursed the credit ahead of schedule in order to gain from lower interest charges. Sale of potatoes was thus a clear profit. To gain more revenue for household expenditures during the hungry season, members from these Kolo Harena also sold a small portion of their stocked paddy rice held in the community granary when prices were high but retained enough in the community granary for household needs.

These small-scale examples of successful credit encouraged not only the immediate Kolo Harena members but also word spread quickly to other Kolo Harena throughout the Fianarantsoa region. As in many villages where LDI works, once initial innovators started experimenting with the credit program and discovered the benefits, other soon followed. One farmer, for example, in Alatsinainy-lalamarina has received 8 million FMG in credit that he is using to expand significantly commercial Royal Carp fish production. So while the LDI Fianarantsoa program's credit activities have started on a small scale, the progressive expansion of the scheme brings much optimism to us all.

LDI Moramanga stories

Cooperative agreement between Madrigal and LDI Kolo Harena farmer associations

Realizing the importance of not only intensifying lowland rice production, but also the need for access to agricultural inputs and markets, the LDI Moramanga team undertook the task of linking small scale Malagasy farmers and large scale agribusiness partners, to provide an example of a mutually beneficial, "win-win" situation. Working with LDI Kolo Harena farmer associations around Lac Alaotra and La Société Madrigal, LDI Moramanga recently formalized a cooperative agreement whereby the three parties agreed to work together to increase the quantity and quality of rice production on approximately 1,000 ha of previously marginal rice producing land.

In this agreement, LDI Moramanga provides technical assistance in the form of hands-on farmer training on improved rice producing technologies (SRI), direct material support through improved access to inputs through Agricultural Input Supply Centers and rural credit, as well as financial assistance through USAID's cyclone relief program towards the rehabilitation of the Lovoka irrigation system. The Kolo Harena farmer federation is participating by helping to rehabilitate and maintain the irrigation system, as well as by adopting the rice intensification techniques necessary to increase their rice production. Madrigal has agreed to advance through the farmer managed Agricultural Input Supply Centers 30 Kg/Ha of urea to each Kolo Harena farmer that will be reimburse in kind or cash at harvest time. They have also agreed to buy at 5% above market price an estimated 1,000 tons of rice from the Kolo Harena farmer associations as well as cover the local rice production tax and transport costs normally supported by the Kolo Harena farmer associations.



Kolo Harena member during the negotiation with the private sector representative in order to conclude the commercial agreement

All in all, this provides an excellent example of how local farmers, agribusiness, development institutions like Chemonics International and funding agencies like USAID can work together to improve food security and reduce rural poverty while taking into consideration environmental concerns.

New Strategic Zones respond to increased interest in the LDI Program

As word of the LDI program spreads through the region, more and more farmer groups, private sector entrepreneurs and Malagasy government officials are expressing interest in working with LDI to alleviate poverty and protect the environment. On special invitation from the President of the *Faritany*, LDI Moramanga along with farmers, private sector and NGO partners and representatives of the regional

government carried out a participatory rural appraisal to determine the feasibility of opening new Strategic Zones on the eastern flank of the Moramanga-Zahamena forest corridor. Combining forest corridor pressure analysis done by AGERAS and Conservation International and our multi-disciplinary participatory rural appraisal we reached a consensus on opening three new Strategic Zones of Intervention for LDI Moramanga (Fenerive Est, Brickaville and Ilaka-Est/Mahanoro).

Benefiting from recent USAID cyclone relief modifications to our mandate, LDI Moramanga was able to rapidly begin activities in all three of these zones. Working with Catholic Relief Services, CARE and a very dynamic local government, activities in the Ilaka Est/Mahanoro zone concentrate on providing access to agricultural inputs through an Agricultural Input Supply Center and rural credit, technical assistance in adopting intensified rice production techniques (SRI), reinforcing irrigation systems that were damaged in recent cyclones and helping communes design and implement natural disaster preparedness plans.

Building on existing conservation enterprise development activities (cinnamon production), activities in the Brickaville zone focus on helping local farmers gain land tenure by establishing sustainable resource management plans that include a disaster preparedness component, providing access to agricultural inputs and rural credit, intensifying agricultural production.

Working with former Conservation International development employees that have formed a local NGO, private sector partners and local officials, activities in the Fenerive Est zone revolve around helping local communes develop resource management plans that will enable them to better prepare for natural disasters, improving access to agricultural inputs and rural credit, intensifying rice production through SRI and revitalizing cash crop production. Private sector financial and technical commitment to improving essential oil production as well as food crops has allowed for the rehabilitation of several distillery operations and the creation of a small training facility to better serve local farmers.

1.1.2 Cyclone Recovery Program

Under this new mandate which started at the end of September 2000, the LDI team must carry out emergency repairs and stabilization activities for the FCE, and rehabilitate agricultural infrastructure, while supporting short-cycle crops, in existing ZSI of the Fianarantsoa and Moramanga regions. Our main challenge was to immediately begin our field activities, in order to be fully prepared for the next cyclone season and meet our contractual commitments, in terms of infrastructure rehabilitated, seeds distributed and roads stabilized.



Rehabilitation of the dam in Ranomafana which irrigate 600 ha of ricefields

We were able to overcome this challenge, because those new activities are consistent with our general approach, our teams were already on the ground working with Kolo Harena associations, we had collected key information, and we were able to build up on our experience and achievements in rural areas. In addition, both national and regional governments were extremely cooperative and welcomed this Cyclone Recovery Program. The President of the Faritany of Tamatave issued an executive order to ask all civil servants in the Tamatave Province, to provide full support to LDI agents, and personally participated in studies and workshops aimed at identifying best possible interventions in the Fenerive area. The Secretary General of the Ministry of Environment spent two days in Vatomandry with the LDI team to open all doors for us, organize meetings and provide useful information and advice. The impressive results of the first 3 months of activities are shown in the following table:

LDI / USAID

Activités en cours dans les régions d'interventions

5

LÉGENDE

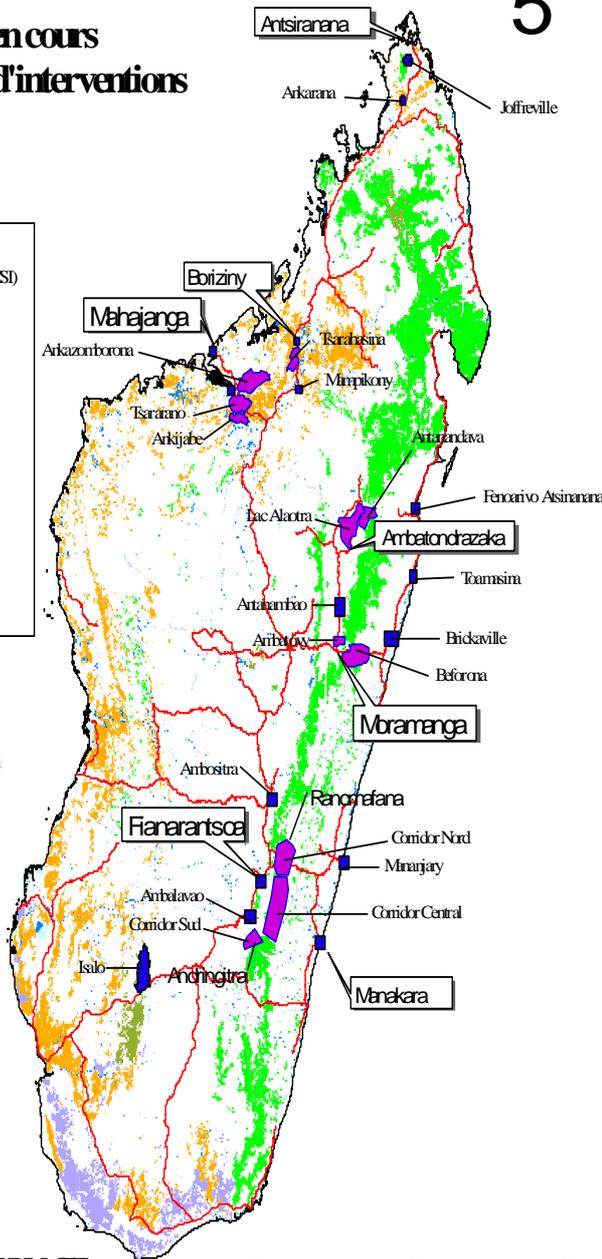
- Zone Stratégique d'Interventions (ZSI)
- Zone de Promotion des EEE

Ecosystèmes prioritaires

- Forêt dense humide
- Forêt sédatophylle
- Forêt littorale
- Forêt dense sèche
- Fourré xérophile
- Mirécages
- Lacs

Route nationale

Fianarantsoa Bureaux LDI



Sources : FIM, ANGAP, LDI, MEF
 Décembre 2000.

APPUI ÉCO-RÉGIONAL

- LDI travaille avec AGERAS, MIRAY et plus de 60 Partenaires en intensifications agricole, éducation environnementale, gestion communautaire des ressources naturelles, recherche et formation
- Mise en place de 2 centres de diffusion de techniques agricoles (CDIA) et d'un centre d'information environnementale
- Appui au réseau d'information régionale
- Développement des filières énergie, écotourisme, café, banane, poivre, canelle, gingembre, raphia, huiles essentielles, produits biologiques
- Promotion de la radio rurale
- Recherche avec les universités d'Antananarivo, de Comell, de Berne, avec FOHFA et BEMA

INTENSIFICATION AGRICOLE

- 280 associations Kolo Harena avec 7300 membres pratiquant une agriculture plus durable et plus profitable. Une dizaine de fédérations de Kolo Harena sont formalisées.
- 190 villages impliqués dans l'utilisation durable des ressources naturelles
- 13 centres fonctionnels de d'approvisionnement en intrants
- Crédit agricole opérationnel avec OTIV, Entreprendre à Madagascar et la BIMBOA

ENTREPRISES FAVORABLES A L'ENVIRONNEMENT

- Appui à plus de 60 entreprises favorables à l'environnement.
- Création de Zones d'Investissements Écotouristiques à Isalo, Ankarana, et Joffre Ville ainsi que de réhabilitation des infrastructures routières à l'intérieur des zones
- 8 nouveaux projets sont en phase initiale de mise en œuvre dont 3 projets écotouristiques.
- 4 dossiers soumis à des banques primaires en vue d'obtenir le concours de HIEFE
- Participation à des foires et tables rondes au Kenya, en Afrique du Sud et aux États-Unis.

EDUCATION ENVIRONNEMENTALE

- 8 catégories d'activités environnementales incluant 15 thèmes dont film, activités de reboisement, radio environnementale, conférence débat, formation environnementale, marionnettes, foires, posters et brochures, avec des partenaires comme Durell, CCEE, MCET, Medascope

GESTION COMMUNAUTAIRE DES RESSOURCES NATURELLES

- 3 contrats de gestion participative de forêts ont été signés. Continuer le processus de transferts dans 10 autres sites, soit à travers le processus Celose, soit par d'autres contrats de transfert de gestion (Gestion Participative des Forêts, Immatriculation collective)

RENFORCEMENT DE CAPACITÉ

- 5 ONGs et associations ont reçu la formation de renforcement de capacité dispensée par LDI
- 280 associations Kolo Harena reçoivent la formation en alphabétisation fonctionnelle et en gestion associative et sont appuyés par des socio-organiseurs

Summary of LDI Partners

| Region | Antsiranana | Fianarantsoa | Mahajanga | Moramanga |
|--|---|--|---|---|
| Activities | | | | |
| Agricultural intensification | | ATS, FFF Malagasy Mahomby, Entreprendre à Madagascar, Bank of Africa, DPV, Association Marotia, GRP, CAF, ATEI, CIRPH, FIFAMANOR, CIRAGRI, EASTA, CIREL, ONG Aide, ONG MIRAY, FOFIFA, ESSA, Pépinière de la Mania, Service phytopharmacie, CMS Nanisana, Cabinet R-Conseil, SNGF, Association Fanarenana, ONG Soafaniry, Cabinet ECR, Association ATEI, Cabinet Tambahra, Bureau d'études Mikajy, Entreprise Hanitra, Entreprise Rakotozandry, ONG Miray Mahefa, MEC TIAVO, ONG Lalana | ANGAP, DIREF, Communes, SOATEG, DIRAGRI, MIRAY, ANAE, DIRENV, AGERAS, PRB, PLAE, ODAI, CDD Tambabe, OCIM, ONG Lalana, IPNR, SAF/FJKM, AHT, FIFABE, FID, Japanese Embassy, Entreprendre à Madagascar, Génie rural Port Bergé, AVOTRA ODAI, FENU, Private Veterinarian, MINEL, Service phytopharmacie, FOFIFA, Entreprise SORATA, SNGF, Cabinet R-Conseil, ONG Lalana | CIRAGRI, Association Marotia, Association NOPRI, CIRPV, ESSA, CU Bevalala, Office Engineering, EEDR Mamokatra, Orintsoa, MacDo, BEMA, CIREL, CIRPH, OTIV, ONG Voahary Soa, ATS, EGAT/Office engineering, CDIA, MacDo, CIREL, AROM, OTIV, MADRIGAL, ONG Tanimaitso, Ramilamina, CMS Anosiboribory et Nanisana, Service phytopharmacie, SNGF, Cabinet R-Conseil, EGECA, Entreprise Ramarojaona, BRL, ERASTMA, ONG AKAMA, PAECC/MPE, ONG FANAMBY, PAEA, ONG Lalana |
| Community based natural resource management | | CIREF, Cellule GELOSE, CAF, CDC, EASTA, Communes, ONG Soafihassina, CORANIR, RTM, Groupe d'accompagnement, Cabinet TJTT, Hanta Rabetaliana, Jacquot Randrianasolo | CANFORET, Communes, BEST, PACT, CLB, SOATEG, Cabinet TJTT | CIREF, TOPO, Domaine, Local authorities, DURELL, Cabinet TJTT |
| Environmental education and communication | WWF MIRAY | MICET, Mass media, artists, editors, producers, FCE, ADIFCE, AGEX PEII, CJPM, Suisse, SOCOFIMA, Vaniala, MYE, AGECCO, GATT | CCCE, Vaniala, MYE, PACT Lova, DODWELL TRUST | CISCO, Local school, Coopération Suisse, IPI/ECHO, CSP, BEMA, SAF/CMS, AZISPAM, CDIA, CIM, Radio Akon'Ambanivolo, Mediascope, BEST, SAF/FJKM, MEF, Phelps Dodge Madagascar, SOATEG, MYE, Vaniala, CITE, ONG Fanamby |
| Conservation enterprises promotion | A18 Architecture, AUE, GTZ, Ministère du Tourisme, ETN, Association Ankarana Mandroso, ADA, AFED, ANGAP, Cabinet Performance, CREATA, Managing, Mahery Conseils, Cabinet Jary | ECODEV, RINDRA, DELC Madagascar, RIRA, Associations des Usagers des pistes, Cabinet Jary, Cabinet MiaraMita, Cabinet Prosper, Aquaterre, Cabinet HB, Fivoarana Consulting, ONG Haoña Soa, Abraham Elison, Cabinet R Conseil, Razafiarison René, Delta Informatique, Directions Inter Régionales: Tourisme, Commerce, Domaines-Topo, ECOCERT, Qualité France, Peter Schachenman, Ozolins, Cabinet JARY | ONG Mikajy, Entreprendre à Madagascar, ANGAP, BCPA, Cabinet MCS, Cabinet EDEN, Cabinet JARY, Multiservice, ECR, CRS, Grand Angle, Rconseil, Ministère de la Culture, GLW Conseil | (Qualité France), Herb research Foundation, private sectors, Federation Kolo Harena, CENAM, CI Zahamena, Cabinet ADAPT, Domaine de Mondésir |
| Capacity building | | CIREF, CMP, AGERAS, ANGAP, ONG Lalana, US Embassy, Cabinet Fivoarana, MINENV, MINTOURISM, WWF, DIREF, CJPM, Intercoopération Suisse, SOATEG, BEST, JSI, ECHO/VS, FISA | Herb Research Foundation, CARE/PAPAT, FOFIFA, AQUALMA, All partners, MINEL, Brahman Cattle Breeders'Society of South Africa, BEST, PACT, EAM, Genie Rural Port Bergé, SOATEG | BEST, CORDAL, JSI, Echo/Voahary Salama, ONG Ramilamina, FISA |

LDI principal results during the first quarter of implementation in the cyclone recovery program

| Indicators for two years | Targets for two years | First Quarter results | | |
|--|---|---|--|--|
| | | Fianarantsoa Results | Moramanga Results | Total |
| Productive Infrastructure and system rehabilitated - Number of hectares of irrigated systems rehabilitated - Number of tons of short-cycle seeds distributed to farmers | 2,554 ha 256 Tons | 960 ha 16.173 Tons | 870 ha 144 Tons | 1830 ha 160.173 Tons |
| Road repair and stabilization work - Numbers of kilometers of road stabilized and rehabilitated | 156 km | - Signed contracts : 2 purchase orders for contractor services - Work started : commencement of the treatment of points noirs in Ifanadiana-Ikongo and road deviation in Tolongoina - Work Advancement : néant - Work Completed in 100%: 1 bac in Ambahive | 790 meters and one semi-permanent bridge | 790 meters 1 bridge 1 bac in Ambahive |
| Urgent assistance with rail infrastructure strengthening and stabilization for the FCE - Number of meters of gabionage installed - Number of meters of retaining walls/drainage ditches constructed - Number of meters of ballast placed - Number of meters of remaining landslides removed - Number of hectares of vetiver planted - Number of tunnel braces installed - Number of kilometers of new track aligned LDI Indicators - 163 km of railroad cleaned - # of participating farmers | 1,800 m3 1,300 m3 5,000 m3 50,000 m3 30 ha 5 tunnels 5 km 163 km 85 farmers | 1402 m3 1090 m3 1500 m3 (in progress) 39800 m3 32.8 ha Work commenced at 1 tunnel 2.2 km 153 km 95 farmers | | 1402 m3 1090 m3 1500 m3 (in progress) 39800 m3 32.8 ha Work commenced at 1 tunnel 2.2 km 153 km 95 farmers |

2. Antananarivo office

The technical and administrative staff in Antananarivo provide important support to facilitate and accelerate the regions' interventions in the field. The regions also benefit from the agreements entered into with ONG's or partners for execution in the field, from coordination of interventions with other regions, other project components, and from the technical, logistical and material support provided by Antananarivo staff in acquiring the goods and materials needed in order for field activities to progress normally. A priority has been placed on coordinating communication and dialogues in order to ensure effective support that is consistent with the intended directions of the interventions.

To summarize the accomplishments in LDI's 4 regions of intervention, we have organized them below by activity.

2.1 Agricultural Intensification

LDI is providing real assistance to 280 Kolo Harena associations more than 7,300 members. These Kolo Harena are called upon to produce in a profitable and sustainable way while protecting natural resources. Technical packages are applied in each region in response to the farmers' needs and with respect for the environment. The results during the first six months of this second year are encouraging, particularly with respect to the targets LDI set in July 2000

- 280 Kolo Harena associations with 7,300 members are supported by LDI, which exceeded the target to support 6,000 beneficiaries.
- The registered outputs, which varied depending on speculations and region, exceeded expectations by 20%. (minimum of 16% for rice, 88% for corn, 30% for potatoes and 30% for beans). This was also true for increased revenue, which was even better because of income generation activities such as fishculture (which generate approximately 250,000 Fmg additional per household for each fish production and 100,000 Fmg additional per household for fingerlings production)
- Adoption of improved techniques is progressing in each region though some variation has been noted in the composition of LDI's technical packages. In every case, a minimum 16% has been observed.
- The agricultural credit component, which has been a bit slow, is being re-energized with the aid of financial partners collaborating with LDI. At this point, \$27,000 of credit has been released in the current campaign, which has a goal of \$40,000.

2.2 Community-based of natural resources management

The strong point of this component for the reporting period is the signature of 3 participatory management contracts for 1,734 ha of forest in Anosomijoro Mahajanga. Another 10 contracts are in the process of being transferred to the community in LDI's regions of intervention.

In total, 43 villages are included in community based of natural resources management in all LDI regions. But 190 villages are involved in sustainable use of natural resources.

The imminent recruitment of a coordinator in the Antananarivo office will reenergize this component with additional support in training and support the multiplication of the Kolo Harena "fille".

2.3 Communication and Environmental Education

This component is advancing slowly but surely in the regions. Fianarantsoa, with the support of MICET, provides intensive support for the environmental education activities targeting members of Kolo Harena associations and Young Kolo Harena. They use sensibilisation and education tools such as films, theater, posters, and newspapers which explain the technical components offered by LDI (e.g. fish culture, credit, ...). In Mahajanga, the memorandum of understanding with CCEE was just signed in order to implement education of students and their parents in favor of the environment (tree planting, training). CCEE will first be trained by LOVA/PACT in the training and support of adults. In Moramanga, revising the programming grid for the radio « Akon'Ambanivolo » of Beforona to diffuse environmental messages and participating in environmental fairs and expositions (Fetin'ny Zetra) have been the principal environmental education activities.

In Antananarivo, LDI is in the midst of completing 2 films on ecotourism and environment friendly business in order to sensitize these 2 sectors and promote at the national level.

On the regional communication plan, the assistance of private antennas facilitated the diffusion of environmental messages, which had been stopped as the communication plan was being defined.

2.4 Promotion of Conservation Enterprises (EFE) and FIEFE

During the first semester, 15 new EFE received technical support and requested possible aide from LDI's FIEFE. This brings to 58 the total number of EFE supported by LDI (see EFE table in appendix 2). The principal channels affected are ecotourism (22 EFE), essential oils (12 EFE), biological products (03 EFE), energy (1 EFE) and fruit (4 EFE).

The support primarily included:

- Elaboration of an application for financing with the intention of appealing to FIEFE;
- Environmental impact studies and other technical studies;
- Affectation of an *expert junior* in order to provide specific technical support;
- Informational research on technical support and sectoral data.

Regarding financing investments to be achieved by the EFE, LDI has put in place an ongoing financing mechanism "*fonds d'investissement pour les entreprises favorables à l'environnement*" or FIEFE, managed by the *Caisse d'Epargne de Madagascar*. After LDI signed the agreement framed by FIEFE, it was the financial establishments' turn to ratify their agreement. This included BTM-BOA, BNI-CLM, BMOI, Investco and FIARO. Four applications (Mendri, PhaeFlor, Domaine Nature and les plantations de Mondésir) for support from FIEFE were submitted to credit banks.

Todate, 4 applications amounting to a \$528,700 investment of which \$193,300 would be FIEFE financed, are in the hands of the client primary bank and awaiting financing. In total, 12 investment projects totaling \$ 858,000 have been identified to date as requesting FIEFE support. This year's target is to release \$80,000 of FIEFE funds for EFE projects having received the technical agreement of LDI.

To strengthen funds management, an *Expert Junior* has been recruited at the *Caisse d'Epargne de Madagascar* (CEM). A workshop was also organized with the financial partners to better master the FIEFE procedures.

2.4 Partner capacity building



These are Kolo Harena members who get their certificate after technical and organizational training

This component is very important and LDI pays special attention to associations working with LDI as well as ONG partners.

LDI makes available to Kolo Harena *experts juniors* who are charged with supporting the Kolo Harena in their commercial and organizational relations with the private sector with the goal of honoring commercial contracts that the Kolo Harena federations signed with private operators. Technical, management, financial and organizational training have been provided for Kolo Harena members and they received technical training in the ZSI as well the CDIA in Beforona and Miadana.

In addition, LDI provided training to Antsiranana's ecotourism associations (*Ankarana Mandroso*, *Association pour le Développement d'Ambohitra* et

AFED) in order to help them manage ecotourism projects and market artisanal products. Such is the case for trainings given to members of the *Eco-Tourisme Nord* association (ETN) on hospitality techniques and product marketing as well as the English language.

Finally, LDI has strengthened the capacity of its ONG partners so that they can better support and better transfer the technical packages to Kolo Harena participants. Furthermore, 3 ONG partners, more specifically their field agents, received training on animation techniques in a rural environment, and managing results-oriented contracts. EASTA Iboaka, PACT/LOVA collaborated in these capacity building activities.

2.5 LDI partnership with other organizations

LDI works in partnership with other organizations to enhance the synergy of its interventions.

2.5.1 JSI and Voahary Salama

LDI collaborates with JSI and Voahary Salama to integrate health and population components with environmental protection and development for Kolo Harena members. The objective is to help beneficiaries profit from their development efforts in harmony with normal population growth and good health. An MOU is being signed to that effect and the aid of other funders is expected in the coming months. Fianarantsoa and Moramanga are the regions targeted for integration; implementation partners will be identified based on their abilities.

2.5.2 ANGAP

LDI Mahajanga collaborates with ANGAP to facilitate development activities, especially with the intention of protecting the basin pouring from Androtra. The improvement plan has been elaborated and settled on jointly between LDI and ANGAP following a workshop held in December 2000. The implementation of the plan began under the arm of regular LDI activities while large improvements await USAID's counterpart funds that will be operational in March 2001.

2.5.3 AGERAS

LDI has provided its support to the national AGERAS cell in order to finalize reports on the projects identified and implemented by making an *expert senior* available to them. LDI has also ensured diffusion of AGERAS reports amongst potential partners. In Fianarantsoa, LDI is collaborating with AGERAS and the Multi-local planning committee (CMP) to prepare the draft of a Strategic Orientation for the management of the Ranomafana-Pic d'Ivohibe Corridor with other partners for the eco-regional planning process.

2.5.4 PACT/LOVA

LDI signed last year an agreement with PACT/LOVA to guide capacity building activities for LDI's ONG partners so as to assure the transfer of knowledge and sustainability of LDI's interventions. Also Pact/Lova provided training in organization and management for the Antsiranana associations for managing ecotourism projects as well as the environmental education partner in Mahajanga (CCEE) on the training of adults.

2.6 Evaluation and Monitoring

The evaluation and monitoring component continues to produce monthly the situation and progress of regular LDI activities as well as rehabilitation of cyclone damage in LDI's zones of intervention.

For this latter category of activity, the monitoring and evaluation team leads environmental impact studies for all the infrastructures to be rehabilitated and emergency rehabilitation and received the approval of USAID.

Beyond this, an important project in progress at the moment is the implementation of environmental pressure measurements in order to verify LDI's working hypothesis which is that reduced expansion of agriculture land in priority



Bushfire is one of the pressure to be measured during the environmental monitoring during this year

ecosystems can be achieved through agricultural intensification, community based natural resources management and environmental education. In collaboration with PACT/DSI, the methodology has been elaborated and will be applied first in pilot zones before expanded in a second wave into the ZSI of LDI.

2.7 Counterpart Funds

2.7.1 Public Investment Program 2000 (PIP 2000)

For the year 2000, the LDI Program benefited from two counterpart funds:

- FCV of Japan
- FCV USAID

a) FCV Japan

The Japanese Government granted 650 million FMG in fund to LDI for rehabilitating the infrastructure in Isalo. 350 million FMG have been registered in the *Loi de Finances 2000* (chapter 4 – 219 – 001 – B : FCV : JAPON/Etat under the rubric : 2141 : Roads).

The *Loi de Finances Rectificatives* concerns rehabilitation of cyclone damage, therefore the remaining 300 millions FMG have not been registered. In order to process the transaction only once, the payment of benefits will be made in two parts:

- *Tranche ferme* of 350 millions Fmg to pay in PIP 2000
- *Tranche conditionnelle* of 300 millions Fmg to pay in PIP 2001

The total transactions add up to :

Lot 1 : Rehabilitation of Ranohira-Piscine, Ranohira Namaza roads, Entreprise ARR, 300.009.340 Fmg (HT)

Lot 2 : Rehabilitation of Ranohira-Ranohira Bas road, Entreprise DIMBY, 267.451.427 Fmg (HT)

Executing the work

- ARR construction firm for lot 1 : the work was 100% completed within the *tranche ferme* budget.
- Dimby construction firm for lot 2 : 66% of the work has been completed.

Payment of benefits

We can pay for the work from the *tranche ferme* budget :

- lot 1 : Reconciled Expenditures account 1 : 125.479.808 Fmg
- lot 2 : Reconciled Expenditures account 1 : 84.670.095 Fmg

The Reconciled Expenditures account n°2 will be prepared after provisional reception of the construction.

b) FCV USAID

A request for adjustments to the credit is being submitted to USAID.

Transactions

There are two benefits:

Lot 1 : Rehabilitation work on the dam at the perimeter of Antsahambary, Ambatondrazaka, EGECORAM construction firm, 236.087.204 fmg (HT)

Lot 2 : Rehabilitation work on the Principal Right Bank Canal at the perimeter of Antsahambary, Ambatondrazaka, GROUPEMA construction firm, 261.847.969 Fmg (HT)

Executing the work

Lot 1 : 95% achieved

Lot 2 : 95% achieved

Payment for work

Following public-bidding procedures, it is possible to process payment for the construction firms as soon as current budget program from USAID Counterpart Funds is signed by USAID.

However, the breakdown for work payments is as follows :

Lot 1 :Reconciled expenditures account 1 : 206.465.048 Fmg

Lot 2 : Reconciled expenditures account 1: 233.450.556 Fmg

The Reconciled Expenditures account #2 will arrive the week of February 5, 2001.

2.7.2 Public Investment Program 2001 (PIP 2001)

LDI registered USAID and Japanese counterpart funds which came to the following amounts :

FCV USAID : 3 billion Fmg

FCV Japon : 500 millions Fmg for the payment of the conditional tranche (in this case, payment of the conditional tranche higher than 300 million)

Next Steps

Establishment of an estimative program for the distribution and use of the counterpart fund.

2.8 Budget and Intervention Funds

2.8.1 Organization

After the departure of the Financial Controller, the Administrative and Financial Director and Assistant to the Financial Controller redistributed these tasks amongst themselves. The latter has taken the position of Intervention Funds Coordinator and oversees the management of these funds with two contracts/grants coordinators. This organization of the work has in fact put in place the « Unité Fonds d'Intervention » at the core of LDI's program.

During the next semester, we anticipate recruiting additional staff to strengthen this unit, to compensate for the increased volume of activities, and ensure technical assistance for each region so they can accelerate contract completion procedures and generally improve the monitoring system for Intervention Funds.

2.8.2 Procedures

Most activities achieved through Intervention Funds were effected through sub-contracts and « Bons de commande », which have the distinctive feature of not allowing the processing of any payment until a deliverable is produced. This procedure handicaps certain partners, notably the ONG's, who cannot provide up-front financing themselves for the activities in the sub-contracts/ Bons de commande.

Although no major new modifications have been implemented in these procedures, measures have been taken to ensure the partners' effectiveness in carrying out their contract, particularly in producing deliverable products.

These measures include :

- Late penalties ;
- Sub-contract amendments (reviewing calendars and deliverables);
- Partial payments for delivered products, according to proportions in meeting targets ;
- Termination of sub-contracts.

Furthermore, to accelerate payment of deliverables, in consideration of the fact that the payment process can only be started after the technicians have verified delivery of the products, an approval delay for deliverable products has been fixed. This permits us to process partners' payments with not more than a delay of 20 business days.

a) Grant agreements and contracts signed

The table below presents the number of new sub-contracts and grant agreements signed during this semester. A total of 25 sub-contracts/ grant agreements have been signed. In addition, 2 sub-contracts were terminated because of non-performance of the sub-contractor.

| Numbers of Contracts and grants signed and completed July 2000 – December 2000 | | | | |
|---|-----------|-----------|----------|-----------|
| REGION | CONTRACTS | | GRANTS | |
| | Signed | Completed | Signed | Completed |
| Moramanga | 10 | 3 | 0 | 0 |
| Fianarantsoa | 10 | 6 | 3 | 0 |
| Mahajanga | 6 | 2 | 1 | 0 |
| Antsiranana Antananarivo | 4 | 0 | 1 | 0 |
| TOTAL | 20 | 8 | 5 | 0 |

The amount of sub-contracts, grant agreements, Bons de Commande signed during the semester in the area of Intervention Funds has risen to \$ 677,710. Details are presented below:

| Montant des contrats/ accords de subvention/ Bons de commande signés July 2000-December 2000 | | | | |
|---|------------------|------------------|---------------------|------------------|
| REGION | CONTRATS | SUBVENTIONS | BONS DE COMMANDE | TOTAL |
| Moramanga | \$79,649 | \$0 | \$58,100 | \$137,749 |
| Fianarantsoa | \$106,425 | \$18,000 | \$191,550 | \$315,975 |
| Mahajanga | \$17,206 | \$25,000 | \$34,667 | \$76,873 |
| Antananarivo Antsiranana | \$25,886 | \$100,000 | \$21,227 | \$147,113 |
| TOTAL | \$229,166 | \$143,000 | \$305,544 | \$677,710 |

\$1= 6,500 Fmg

b) Payments completed

The table below presents payments made during the semester. The budget referred to is in the Workplan approved by USAID. Expenses are valued according to real rates in effect at the moment where expenses were incurred. It is noted that for counterpart funds, the actual payment will be made through the Central Bank of Madagascar and the amounts calculated below represent the contracted amounts.

| INTERVENTION FUND TRACKER | | | | | | | | | | | | | |
|-------------------------------------|------------------------------------|------------------------------|---------------------------------|-------------------------|---------------|-----------------------------------|--------------|-------------------|-----------------------|-----------------------------|-------------|-----------|------------------------------------|
| LDI Year 3 : July 00 through Dec 00 | | | | | | | | | | | | | |
| BUDGET CATEGORIES | | ACTIVITIES | | | | | | | | | | TOTAL | percent of budget expended to date |
| | | Agricultural Intensification | Community Mgmt of Nat Resources | Environmental Education | EFE Promotion | Reinforcement of partner capacity | FCE Railroad | Road construction | Other infrastructures | Agricultural infrastructure | | | |
| REGULAR BUDGET | Technical Assistance | Budgeted | \$170,036 | \$26,557 | \$52,340 | \$80,777 | \$98,753 | \$26,000 | \$0 | \$0 | \$0 | \$454,463 | |
| | | Spent | \$77,196 | \$4,179 | \$26,848 | \$48,799 | \$90,536 | \$25,661 | \$0 | \$0 | \$0 | \$273,219 | 60.12% |
| | Credit | Budgeted | \$51,741 | \$0 | \$0 | \$228,923 | \$0 | \$0 | \$0 | \$0 | \$0 | \$280,664 | |
| | | Spent | \$11,499 | \$0 | \$0 | \$509 | \$889 | \$0 | \$0 | \$0 | \$0 | \$12,897 | 4.60% |
| | Direct Material support | Budgeted | \$63,305 | \$2,600 | \$17,150 | \$33,699 | \$22,419 | \$38,000 | \$0 | \$0 | \$0 | \$177,173 | |
| | | Spent | \$38,341 | \$357 | \$2,051 | \$17,910 | \$1,517 | \$38,074 | \$0 | \$0 | \$0 | \$98,251 | 55.45% |
| | Research | Budgeted | \$44,200 | \$4,000 | \$2,000 | \$2,500 | \$5,000 | \$0 | \$0 | \$0 | \$0 | \$57,700 | |
| | | Spent | \$32,202 | \$858 | \$0 | \$5,734 | \$110 | \$0 | \$0 | \$0 | \$0 | \$38,904 | 67.42% |
| | Total | Budgeted | \$329,282 | \$33,157 | \$71,490 | \$345,899 | \$126,172 | \$64,000 | \$0 | \$0 | \$0 | \$970,000 | |
| | | Spent | \$159,238 | \$5,395 | \$28,900 | \$72,951 | \$93,052 | \$63,734 | \$0 | \$0 | \$0 | \$423,270 | 43.64% |
| USAID FCV | Technical assistance | Budgeted | | | | | | | | | | | |
| | | Spent | | | | | | | | | | | |
| | Direct Material support | Budgeted | | | | | | \$44,117 | \$117,646 | \$213,235 | \$132,352 | | |
| | | Spent | | | | | | | | | \$73,226 | | |
| | Total | Budgeted | \$0 | \$0 | \$0 | \$0 | \$0 | \$44,117 | \$117,646 | \$213,235 | \$132,352 | \$507,350 | |
| | | Spent | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 | \$73,226 | \$73,226 | 14.43% |
| JAPANESE FCV | Technical Assistance | Budgeted | | | | | | | | | | | |
| | | Spent | | | | | | | | \$0 | | | |
| | Direct Material support | Budgeted | | | | | | | \$95,588 | | | | |
| | | Spent | | | | | | | \$68,744 | \$0 | | | |
| | Total | Budgeted | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 | \$95,588 | \$0 | \$0 | \$95,588 | |
| | | Spent | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 | \$68,744 | \$0 | \$0 | \$68,744 | 71.92% |
| Other outside funding | Technical Assistance | Budgeted | | | | | | | | | | | |
| | | Spent | | | | | | | | | | | |
| | Direct Material support | Budgeted | | | | | | | | | | | |
| | | Spent | | | | | | | | | | | |
| | Total | Budgeted | \$0 | \$0 | \$0 | \$0 | \$0 | \$16,000 | \$0 | \$0 | \$25,000 | \$41,000 | |
| | | Spent | \$0 | \$0 | \$0 | \$0 | \$0 | \$8,443 | \$0 | \$0 | \$5,872 | \$14,315 | 34.91% |
| TOTAL | Budgeted | \$329,282 | \$33,157 | \$71,490 | \$345,899 | \$126,172 | \$124,117 | \$213,234 | \$213,235 | \$157,352 | \$1,613,938 | | |
| | Spent | \$159,238 | \$5,395 | \$28,900 | \$72,951 | \$93,052 | \$72,177 | \$68,744 | \$0 | \$79,098 | \$579,555 | 35.91% | |
| | percent of budget expended to date | 48.36% | 16.27% | 40.42% | 21.09% | 73.75% | 58.15% | 32.24% | 0.00% | 50.27% | 35.91% | | |

c) Commitments

Commitments as of December 31, 2000 are as follows:

| | Total Grants, Contracts, Pos signed until Dec 31, 2000 | Total disbursed until Dec 31, 2000 | Outstanding obligations |
|--------------------------|--|------------------------------------|-------------------------|
| Moramanga | \$596,132 | \$387,060 | \$209,072 |
| Fianarantsoa | \$1,140,432 | \$654,608 | \$485,824 |
| Mahajanga | \$182,750 | \$134,212 | \$48,538 |
| Antananarivo/Antsiranana | \$521,283 | \$268,775 | \$252,507 |
| TOTAL | \$2,440,598 | \$1,444,655 | \$995,942 |

These amounts only reflect contracts engaged in Madagascar.

d) Expense Analysis

Rate of Expenditure

With the cyclone rehabilitation activities, expenses incurred under the Intervention Fund increased from an average of \$65,000/ month to an average of \$185,000/ month.

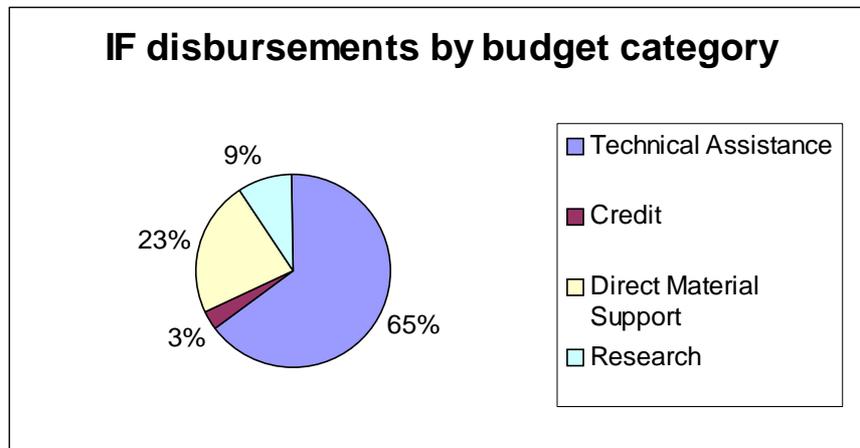
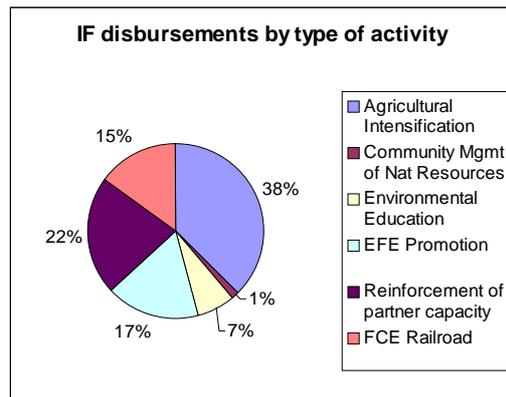
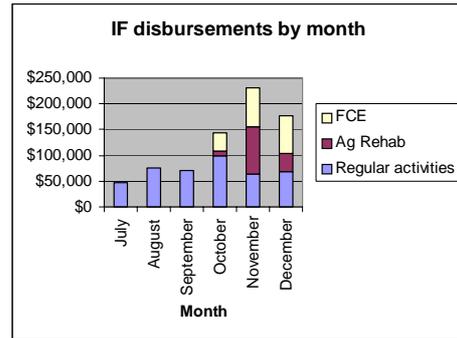
Expenses by Type of Activity

An expense analysis by activity reveals that last year's trends have continued, in almost the same proportions of expenditures. As such, Agricultural Intensification and Partner Capacity Building represent 60% of expenditures.

Expenses for the "FCE Railroad " represent those which were incurred to repair the railroad before the cyclone rehabilitation funds to do this arrived in September 2000.

Expenses by budget category

After Technical Assistance, which represents 65% of actual expenses, Direct Material support is the second most used budgetary category.



2.9 Administrative support

3. Antsiranana region

LDI is working in Antsiranana to promote ecotourism. LDI is working most closely with the following entities to support their work in ecotourism:

- The Ministry of Tourism, following a recent request to set-up to Ecotourism Investment Zones (ZIE) in Ankarana and Joffreville
- The “Ankarana Mandroso” village association in Andrafiabe to create and manage basic village based tourist lodges.
- The association “AFED” (Femmes et Développement) in Joffreville to promote artisanal activities.
- The “Eco-Tourisme Nord” (ETN) association which brings together tour and ecotourism operators in Antsiranana to promote ecotourism.
- Individual operators working in ecotourism.
-

3.1 Principal accomplishments

With respect to these entities, this semester’s accomplishments are as follows:

- Finalized the development plan for two ZIE, one at Montagne d’Ambre and one at Ankarana.

- Constructed 2 basic lodges in the village of Andrafiabe Ankarana after completing the following:
 - Environmental Impact Study of the project, which was approved by USAID in October 2000;
 - Technical review of the project in November 2000;
 - Began construction in September 2000.

LDI hired an *expert junior* to assist the “Ankarana Mandroso” association in setting up and managing their basic lodges. In collaboration, with PACT/LOVA, LDI provided training in cooperative management for the members of the association. The association’s officers and the *expert junior* received additional training in practical management of basic tourist lodges and will, in turn, support the association in taking advantage of the opportunities these lodges present.



The Andrafiabe village has been quite receptive to manage the cases villageoises constructed by LDI for the Ankarana Mandroso Association

- Provided cooperative management training for members of the “AFED” association to strengthen their capacity to manage their marketing artisanal products project. This was done in collaboration with PACT/LOVA.
- LDI supported the “Eco-Tourisme Nord” association (ETN) in opening a Tourism Office in Antsiranana. This Office was inaugurated in September 2000. In collaboration with training partners such as the CREATA Institute, LDI provided training in *Hospitality, Marketing Tourism products, and English language* for the tour operators who are members of this association.
- LDI also provided technical assistance to individual tour operators regarding administrative procedures and documentation involved in establishing the Fontenay Resort and a horseback riding trail project.

3.2 Performance Analysis

3.2.1 Qualitative Analysis

- Establish ZIE: the development plans for the two ZIE in Antsiranana have been finalized thanks to the collaboration of local authorities and private operators, and especially the technical capacity and knowledge

of LDI's technical team. The documents have been transmitted to the Ministry of Tourism, which is responsible for activating the request for proposals. LDI has identified 4 investors interested in the ZIE. Unfortunately the Ministry of Tourism's procedures doesn't seem quite ready and this slowness may discourage investors.

- **Village Tourist Lodges:** The project "Cases Villageoises" is well under way. A number of factors contribute to the progress made to date: The Andrafiabe village has been quite receptive, in contrast to their reputation of being closed and conservative. Hiring a good socio-organizer made our approach easier; originating from the region, he works for the NGO Lalana and was assigned to Antsiranana to support the "Ankarana Mandroso" association. The technical evaluation conducted by WWF's technical advisor M. Scott Grenfell helped us identify specific actions that contributed to the success of the project. In addition, LDI's internal team's financial evaluation indicated promising results and ANGAP technicians assisted with the Environmental Impact Study since the site is so close to the National Park of Ankarana. Finally, several trainings were organized to prepare the "Ankarana Mandroso" association to manage this project long term. One of these trainings took place with the collaboration of PACT/ LOVA. The technical team conducting these trainings will also be conducting follow-up and evaluation.
- **ETN :** Assisted by LDI, the association of private eco-tourism operators (ETN) in Antsiranana was created to initiate ecotourism development activities. ETN's principal activities revolve around promoting the region's eco-tourism sites, professionalizing the field, and preserving other potential sites beyond the existing reserves. With a very dynamic membership, ETN has succeeded, in a relatively small amount of time, in creating a Tourism Office, organizing English language training (which is becoming increasingly important for tour operators), producing a Tour Guide for the region and organizing a workshop on Hospitality and marketing tourist products.
- **Various support for future eco-tour operators :** LDI had given much technical support to the developer of a future ecolodge based in Joffreville, the "Fontenay Resort". The support was quite varied including administrative procedures to acquire the *autorization d'exploitation* as well as a technical study for the development of an eco-tour of the area including private forest reserves. It is worth noting that the developers of Fontenay Resort are launching this project with their own funds. Furthermore, LDI has supported another future developer who envisions a series of horseback riding trails inside the parks and reserves as well as along the beaches. Although minimal, the support given by LDI may assist the developer in acquiring the land for eco-tourism responsible use.

3.2.2 Quantitative Analysis

| Yearly objective | First semester accomplishments | Observations |
|---|--|---|
| 2 village based tourist lodges constructed by the "Ankarana Mandroso" association | 2 village based tourist lodges are being completed and are expected to be operational in April 2001 | |
| 1 Ecolodge established in Joffreville or Ankarana | 1 Ecolodge established in Joffreville (Fontenay Resort) | The project is being financed by the developer, and supported with technical assistance from LDI. |
| 5 different activities organized for local tour operators | 5 trainings were organized : - 2 for "Ankarana Mandroso"; - 1 for "AFED" - 2 for private tour operators | |
| Technical assistance to rehabilitate the water system in Joffreville | | Awaiting confirmation of the availability of USAID counterpart funds registered in PIP 2001. |

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4. Fianarantsoa Region

The LDI Fianarantsoa program continued to both consolidate its ecoregional conservation and development program but also expand into new directions in light of cyclone recovery activities. In general, the program continued to meet its anticipated objectives despite the setbacks to the broader regional economy caused by cyclones Eline and Gloria. Considerable staff time was invested in designing appropriate cyclone recovery activities for rehabilitation of agricultural infrastructures damaged by the cyclones and for reconstruction of the FCE railway. Cyclone recovery funds began to arrive in late September which stimulated even further the rapid pace of program implementation activities.

4.1 Principal Results

4.1.1 Eco-regional support

Support to ecoregional activities continued to expand on many fronts. LDI Fianarantsoa invested considerable staff time in building complementary activities with other donor organizations. This has resulted in the commitment by FID to invest its funds in road reconstruction in areas served by LDI or to the generation of supplemental funding from the UNDP for irrigation projects in such sites as Alatsinainy-lalamarina. Regional support activities launched in the previous semester led to the concrete results described below:

- 2 expert-juniors, an agronomist and a finance administrator were seconded to AGROMAN in order to improve the productivity and the management of the farm which will stimulate production from the Kolo Harena in the coastal Manakara region
- Following investment by LDI of \$10,000 to purchase research equipment for the rapid biological inventory team to generate baseline biological information on the Ranomafana-Ivohibe forest corridor, the study was completed with funding support from ONE, Miray, and PAGE in November by a joint WWF – MICET – ANGAP team of senior scientists. Research results will be published in June 2001.
- Support to the AGERAS/CMP ecoregional planning process continued through a joint venture by Miray and LDI Fianarantsoa to prepare a draft "Document d'Orientation Stratégique pour la Gestion du Corridor Ranomafana-Pic d'Ivohibe." LDI and Miray financed a 3 day workshop of specialists to write this preliminary "vision" for the future of the corridor that will then be revised and used by the CMP as a set of program planning guidelines for government, donors, and local communities.
- Organization of the site visits and the invitation to tender for the rehabilitation of the FOFIFA research center at Kianjavato

4.1.2 Agricultural Intensification



The agricultural intensification package of information and technologies offered to the 169 Kolo Harena associations continued to be disseminated through LDI's partner NGOs (Malagasy Mahomby, Association Tefy Saina, AIDE, MIRAY,...), and LDI field agents supported by the technical services of government ministries (CIRAGRI, Service de Pêche, CIREL, FOFIFA ...). Depending on the institutional capacity of the partner, variable results were obtained. In general, results from this semester's work were very promising in terms of adoption rates and areas placed under cultivation compared to results achieved in the preceding year.

a) Intensification in Agricultural Niches

Over 2000 Kolo Harena farmers benefited from the diffusion of agricultural intensification approaches varying from improved rice production and hillside rehabilitation techniques to experimentation in new revenue generating activities such as small animal husbandry. The following statistics portray the performance of Kolo Harena associations:

- Rice fields in the low-lands: 195 ha of lowland rice lands were placed under cultivation using SRI techniques by 898 farmers (up to a 43 % adoption rate); 41 ha of land were placed under off-season

potato production by 1125 farmers (up to a 60% adoption rate), yielding about 305 tons of potatoes of quality.

- Hillsides: 25 ha of bean fields were planted by 363 farmers in order to diversify food production; 53 ha of hillsides were placed under contour farming; 880 farmers practicing composting (40% adoption rate)
- Small animal husbandry: 225 farmers practice beekeeping and fish farming (371 hives and 171 fishponds in full operation). 10 farmers in 5 sites were trained in producing fingerlings and sold more than 5 000 fingerlings generating 1 million Fmg. Fish production attained 3 metric tons of which 80 % was sold in local markets to generate approximately 250,000 Fmg per household.

Average yields increases for each agricultural activity surpassed the objectives set for the second year by 20% in those fields not ravaged by the cyclones. (Cf. Indicator tables). At the revenue level, off-season crops boosted household income to up to 50% increase.

b) Material and credit support

Agricultural intensification is highly dependent upon the reliable supply of agricultural inputs and access to rural credit. LDI Fianarantsoa concluded contracts with Group for Rural Promotion (GRP), Entreprendre à Madagascar (EAM) and the BOA bank to provide technical and institutional support for the management of the 6 agricultural supply centers and promotion of micro-credit.

- Agricultural Supply Centers: 438 Kolo Harena members have received loans totaling 80 Million Fmg; the credit reimbursement rate does not descend below 70% (except in Sendrisoa). Each center received an initial input of \$5,000 totaling \$30,000 worth of subsidies to the 6 centers. With a subsidy disbursement rate nearing 50%, the centers achieve up to \$16,000 worth of transactions. The whole community can benefit from the center services through the cash sale system. The benefits from these sales have been recycled by the Kolo Harena federations to acquire materials and seeds. The Ranomafana and Miarinarivo centers have already invested 5 million Fmg to replenish their own funds. Credit is generally allocated for the purchase of fertilizers, potato, bean, onion and garlic seeds and minor materials for beekeeping market gardening. As a result of the increase in credit demand and Kolo Harena members in Ranomafana and Miarinarivo, an additional \$5,000 credit line for the center is being negotiated.
- Micro-credit: after a long and difficult year of low crop yields due to the cyclones, 11 Greniers Communautaires Villageois (GCV) were established. Despite the low productivity in rural areas, the GCV have bore fruit by generating 14 millions Fmg worth of credit to 57 families in 11 Kolo Harena at 3 sites. These loans are equivalent to the value of 17 tons of paddy rice. Of the 11 Kolo Harena, 10 were able to reimburse their loans without needing to sell the rice in stock. The credits from the GCVs were used to buy off-season potato seeds, fertilizer, and small tools. 95% of loans were reimbursed on time by those Kolo Harena who were able to take advantage of the investment of their credit in very profitable dry season potato production.

4.1.3 Community-based Natural Resource Management

While LDI invested considerable staff time and resources in advancing community management of natural resources, both policy and practical difficulties abound. From the policy perspective, the Ministry of Water and Forests continues to authorize permits for forest cutting in the corridor. LDI Fianarantsoa worked intensively with other donors and AGERAS/CMP to attempt to ban a permit authorizing logging in a 1400 plot in the Miarinarivo site. Until now, this effort has largely failed and logging continues. Bureaucratic hurdles were created that impeded the signing of a protocol of accord allowing collaborative efforts between LDI Fianarantsoa and the DIREF regional forestry office, but these problems were finally resolved late in the year. The experienced gained in trying to launch community forestry management initiatives demonstrated clearly that both forestry agent personnel and staff from LDI and partner agencies possess a weak understanding of the complex legal mechanisms behind community resource management.

LDI staff and partner organizations thus participated in training and workshops on Contractual Management of Forests through workshops in Fianarantsoa and at Mantasoa in order to better grasp the procedures and implications of transferring forest management to the community.



In the Ambohimahasina ZSI site on the western flank of the corridor, LDI sponsored a participatory baseline ecological study and conducted a stakeholder analysis with CCD Namana and Feedback Madagascar around community forests in key watersheds. Through a contract with CCD Namana, LDI supported participatory evaluations in 5 Fokontany bordering the Ambohimahasina natural forests. Management units were defined at the end of this assessment that will be the foundation for a more concerted "gestion de terroir" approach being promoted at the Fokontany level and financed primarily by the Rainforest Foundation of the United Kingdom. LDI continued to finance the work of an "expert junior" seconded to EASTA Iboaka to set up a community management scheme for the extensive eucalyptus plantations found in the commune.

Four other sites (Ranomafana east and west, Miarinarivo, Alatsinainy-lalamarina) were selected to setup a participatory forest management and the LDI's socio-organisateurs initiated the establishment and the organization of a "communauté de base". In the Ikongo ZSI site, LDI covered the cost of master's degree research of a student to set up a community forestry management scheme. Organizational meetings were commenced following the recommendations of the ESSA Forêt student. Despite the concerted efforts of LDI's socio-organisateurs to begin the community mobilization phase, work was stopped due to quarantine placed on the concerned community designed to limit the spread of bubonic plague. Activities have been temporarily suspended.

4.1.4 Communication and Environmental Education

The environmental education made great strides over the past semester. MICET, LDI's principal partner in the area of environmental education, introduced a variety of training activities which induced the targeted Jeunes Kolo Harena (JKH) to test sustainable agricultural practices. Though carried out in small areas, vegetable gardens and off-season as well as improved hillside production techniques were largely adopted by the JKH (81 practitioners out of 132 members translating to a 61% adoption rate). MICET's valorized indigenous knowledge and village-to-village training around such themes as "Crayfish and Forests" and in collaboration with EASTA Iboaka a module on "Eucalyptus forest management." MICET conducted a census of "environmental" dina that operate within 6 communes along the forest corridor. These dina are the foundation for expanding dialogue on ways to use traditional resource management practices for the protection and regeneration of forest resources. A reforestation day was organized by the primary school and the CEG of Alatsinainy-lalamarina in collaboration with the administrative authorities and parents of the locality.



A number of audiovisual supports were produced and put at the disposal of the Kolo Harena and the agricultural supply center staff, in order to transmit key messages on the types of support given by LDI as well as information on alternatives to slash and burn agriculture. These communication tools included:

- Puppet shows on the key messages of LDI Fianarantsoa - "Improvement of livelihoods and preservation of the environment" at 3 sites on the eastern and western sides of the corridor
- Production and projection of films on fish farming, coffee and SRI at 4 sites
- Editing and distribution of 150 copies of brochures explaining the rural credit system and agricultural supply centers
- Financial and institutional support for the creation of the Fañina association which will produce the Fañoitsa journal focusing on rural development and environmental themes of interest to villagers

4.1.5 Promotion of Conservation Enterprises and FIEFE

a) Beekeeping and Fish Farming

Fish farming, beekeeping and potatoes production are among the most successful activities with the Kolo Harena. For instance, potato production is generating yields of 6-18 metric tons per hectare (traditional yields of 1.5 tons average) on the 41 hectares of land now under improved techniques; 225 households currently practice modern beekeeping and fish farming (371 hives and 171 fishponds). Fish production has attained 3 metric tons of which 80 % is sold to generate approximately 250,000 Fmg per household. As a

surplus product is increasingly generated, the question of marketing and obtention of fair prices becomes increasingly important. The Conservation Enterprise Unit began close collaboration with the Agricultural Intensification team to determine ways to increase market access and value for the produce marketed by the Kolo Harena members.

The Conservation Enterprise unit organized with the assistance of the new NGO Haoña Soa and R Conseil Cabinet a two day long meeting in Fianarantsoa between business entrepreneurs' interests and Kolo Harena members. These entrepreneurs included fish and foodstuff wholesalers, the AGROMAN firm, CORANIR, AFAFI, Tiko, and many others. Draft contracts were written during the meetings and the first tangible conclusion to the agreements cut during this meeting led to the delivery of 1000 fingerlings produced by the Kolo Harena of Sendrisoa to CORANIR for its new fish production center.

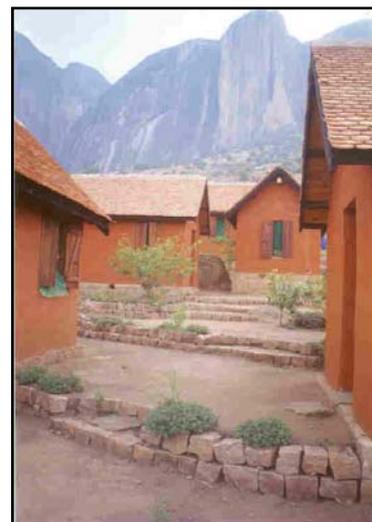
b) Essential Oils and other products

The Conservation Enterprise Unit continued its promotion of essential oils and other high value products. Among its activities over the past semester were:

- Market connections generated by the Kolo Harena - entrepreneur meeting leading to expressions of interest in the purchase of field crops (manioc, corn, soya), fruits, spices (ginger, cinnamon, curcuma), ramy resin and coffee by 4 buyers;
- A commercial agreement between BIOSAVE and Fianarantsoa operators CHEF and AFAFI to launch production and marketing of basil for its essential oil;
- Continued testing after the removal of quarantines of 1600 young Rose de Bulgarie plants in collaboration with Mac & Frères in view of large-scale production by the farm and surrounding farmers for its essential oil;
- Study to analyze possibilities for developing Aloes production for gel and oil

c) Ecotourism

As a regional strategy LDI Fianarantsoa promotes the expansion of ecotourism growth poles in the vicinity of Ranomafana National Park, Andringitra National Park, Isalo National Park and selected sites along the FCE railway. The projects eligible for FIEFE are, at this moment, in the final stages of preparation. LDI also seeks to expand tourist destinations to Fianarantsoa through assistance to Delta Informatique to refine the web site fianarantsoa.com. Considerable staff time has been invested in participating in regional preparatory meetings for the June 2001 eclipse. Other activities include:



Ranomafana National Park

- Feasibility study and credit application concerning the rehabilitation of the hydro-electric plant of the Domaine Nature hotel
- Feasibility study and environmental impact statement for the extension of the CENTREST

Andringitra National Park

- Secondment of an expert-junior to ANGAP and WWF to develop an eco-tourism plan with communities living around the park
- Assistance to the Comité de pilotage to prepare a tenure security study for the development of hotel facilities near the park
- Financing of the construction of a hiking trail from the Sahanambo valley to the western entrance of the park near Pic Boby
- Technical support and financing for the feasibility study for the expansion of the Camp Catta ecolodge on the western side of the park.

Isalo National Park

- Secondment of an expert-junior socio-organisateur to the Comité de Développement de l'Isalo (CDI) to work with the villagers in the vicinity of the Isalo National Park and the ZIE.
- Financing of the renovation of the park's Centre d'interprétation by ANGAP
- Rehabilitation of the 22.3 km roads giving access to the most visited sites in the park. LDI paid for the road feasibility studies; contributed to the study of environmental impacts of road construction; and put in place the mechanisms for executing the construction using the \$107,500 from the Japanese counterpart fund.
- Technical support for the Regional Eclipse Committee 2001 in environmental protection. LDI participated in the elaboration of cahiers de charges relative to the use of the sites around the park and contributed to the institutional strengthening of the regional preparatory committees.

Ecotourism along the FCE railway

- Consultancy with Railbikes of Astoria to refine and fabricate 3 railbike prototypes constructed in collaboration with PROIMPEX Moramanga. Testing of the railbikes on the FCE line by LDI's FCE Unit as well as railroad employees; sponsorship of an ISTE thesis leading to the elaboration of a business plan for railbike operations.

4.1.6 Capacity building

LDI Fianarantsoa and its technical partners worked with the 2278 members of 169 Kolo Harena to set up 6 federations of Kolo Harena. LDI's socio-organiseurs conducted intensive training for the committee members in management and organization. At present, these federation committees have completely taken charge of the management of the supply centers supported by Entreprendre à Madagascar.

The present challenge faced by the LDI technical staff and its partners is to conserve the good quality of the training services in the midst of the rapid expansion of Kolo Harena associations. The LDI program is particularly concerned about the long-term viability of interventions financed through its partners. Following the conclusions of a diagnostic by PACT/LOVA on the limited capacity of LDI's partners to implement results oriented contracts, training sessions were conducted by EASTA Iboaka on ways to increase the ability of the NGO partners to carry out their mandated activities. Even though this capacity building work has taken much time and investment of resources, LDI Fianarantsoa is gradually increasing the ability of several NGOs to carry out better agricultural and community development activities.

Cooperation with national and international research institutions continued through very small stipends offered to students to carry out field research of interest to LDI. Applied research leading to degree theses concerned:

- Economic viability of railbike operations on the FCE by two ISTE students
- Forest management options in Ikongo/ Ambalavoangy with a master's degree student of ESSA Forêt of the University of Antananarivo
- Feasibility study on the market for forest products from the forest corridor near Tolongoina
- Planting and fertilization trials for Roses de Bulgarie with two ESSA student.

Also, various practical training sessions varying from poultry farming to integrated phytosanitary management are regularly given by experienced professionals to the LDI technical staff and its partners. Three LDI Fianarantsoa senior staff members benefited from exchanging experience during international conferences on the dynamics and contradictions in the adoption of new agricultural practices, the role of fallow in agricultural systems and organic products.

4.1.7 Support for AUP Road User's Associations

LDI Fianarantsoa continued its contract with ONG Lalana to provide technical and organizational assistance to road user's associations. The degree of support from ONG Lalana depends on the dynamism and maturity of the AUP. Considerable support was offered to the AUP to help them define strategies of response to the cyclones that buffeted the region this year. The linkage between the AUP and the Kolo Harena is progressively expanding as hoped for at the outset by LDI. This semester many members of the Manakara and Sendrisoa AUP's joined the Kolo Harena to carry out agricultural intensification and

conservation enterprise activities. The presence of a well-maintained road continues to stimulate economic growth through market integration along the CAP roads.

LDI and ONG Lalana worked extensively with the AUP to help them carry out cyclone recovery activities. Considerable technical assistance was offered to assist the AUP to qualify for the Fonds d'Entretien Routier (FER). Funds were received by the majority of the AUP to carry out road repairs during the rainy season of 2001. With the arrival of the dry season in 2001, LDI will invest \$75,000 for road rehabilitation activities, this under cyclone recovery program.

4.1.8 Cyclone recovery program

Functional regional transportation networks are critical components in the regional economy. After being hit by two cyclones, the FCE railway line suffered from severe damage to the tracks which contributed to severe social and economic impacts on local populations. Had the line been blocked any longer there would have been considerable ecological consequences on the corridor and therefore on LDI interventions in the eastern side of the corridor.

LDI played a central role in obtaining immediate authorization to use \$43,000 of LDI program funds to open up the line, \$7,100 to repair a third engine desperately needed for hauling fuel and freight, and an additional \$500,000 to stabilize and rehabilitate the tracks and the land along the railway. LDI Fianarantsoa is implementing on schedule the track rehabilitation and the community-based component. Implementation difficulties are encountered from time to time due to normal institutional and logistical constraints. But, most of these problems are being successfully overcome by the highly experienced and qualified LDI Fianarantsoa staff.

The full report on cyclone recovery activities is documented in other periodic reports.

4.2. Performance Analysis

4.2.1. Qualitative Analysis

a) ZSI North Corridor : Ranomafana National Park Buffer Zone

The northern corridor is the largest Strategic Zone of Intervention for LDI Fianarantsoa in terms of the number of farmers trained (1171 members of 73 Kolo Harena) and number of villages (47) reached by project activities. Three partner NGOs having years of development experience in the zone, cover the agricultural intensification, environmental education and natural resource management in Ranomafana. The Kolo Harena were more than satisfied with the results of off-season crops and vegetable gardens thanks to the positive effects of improved production techniques. Agricultural supply centers played a major role in the distribution of seeds and small tools. The technical agricultural packages introduced, accompanied by nutritional and environmental education activities, have had very significant impacts on household revenue and family health. For example, a household which invest in off-season crop generate on average, at least 150,000 Fmg, a sum that can represent up to 20% of the total household budget.



The product of the fish farming is almost 2 tons, a source of more than 10 million Fmg for 27 families in Sendrisoa.

The areas that still require the reinforcement of LDI support are those following:

- Intensification of Kolo Harena training of the eastern Tanala side of the forest corridor
- Commencement of community forest management activities in the 2 identified village territories; 2 socio-organisations will be recruited to accelerate the process in 2001
- Improvement in agricultural supply center management

b) ZSI Central Corridor : Alatsinainy-lalamarina, Tolongoina, Ikongo and Ambohimahamasina

The socio-economic and environmental dynamics of the east Tanala zone (Tolongoina and Ikongo) and the western Betsileo zone (Ambohimahamasina and Alatsinainy-lalamarina) are different but the success in terms of increase in production are seen in both sides, especially for potatoes, vegetables, and fish farming. The success of the off-season potato cultivation was particularly promising in the Tanala communities on the eastern side of the corridor. Expectations are high that this component will expand next year.

The EFE activities in the Central Corridor are starting off with the relaunch of coffee production, ginger, peanuts, soybean, essential oil, fish farming, beekeeping and citrus fruit in Alatsinainy-lalamarina, and silkworm production of Ambohimahamasina. The results of the meeting between the Kolo Harena and the EFE seem to show several interesting commercial opportunities like the possibility of the purchase of agricultural produce by AFABI (beans, peanuts, soybeans), TIKO (oranges), AGROMAN (coffee). As for the Kolo Harena, the reinforcement of LDI technical and financial support, the improvement of the supply centers' services and the functionality of micro-credit in particular, will be crucial in order to face the development challenges in confined sites.

LDI Fianarantsoa will continue to provide the services of an expert junior to establish community management of the eucalyptus plantations especially in light of the rehabilitation of the Ambalavao – Ambohimahamasina road that promises to stimulate uncontrolled extraction of forest products unless new resource management regimes are put in place.

c) ZSI South corridor: Sendrisoa and Miarinarivo

The southern corridor sites are among the most dynamic in terms of the variety of agricultural intensification activities carried out by Kolo Harena members. The impacts of these activities are already palpable; the product of the fish farming activity and potato sales are respectively almost 2 tons and 11 tons in Sendrisoa, a source of nearly 17 million Fmg for the 77 practicing families. This important advance of activities is also linked to better performances of NGO partners (AIDE, MIRAY) supported by the technical services of the ministries working in the zone. The accomplishments recorded in Miarinarivo and Sendrisoa show that with efficient coordination and superior technical capacity, the LDI-NGO partnership can produce results that ensure the way leading to the perpetuity of activities which can also produce the "trickle-down" effect on the non-Kolo Harena.

4.2.2 Quantitative Analysis

a) Description of LDI Fianarantsoa results

| Second year objectives July 2000 to June 2001 | Situation in the first semester July 2000-December 2000 | Observations |
|---|---|--|
| 1. 40 % increase in the number of KH assisted : 165 Kolo Harena or 2200 households in total | ZSI northern corridor: 73 Kolo Harena associations of 1171 members - ZSI central corridor: 51 associations of 661 members - ZSI southern corridor: 35 associations of 329 members - Manakara : 10 associations of 117 members - Total : 169 Kolo Harena of 2278 members | |
| 50% of targeted families have adopted improved practices. | SRA/SRI: 16- 43% adoption Off-season crops (potatoes, beans): 12- 90 % adoption Market-gardening: 17- 60% adoption Hillside rehabilitation (vetiver, contour curves): 6- 42% adoption Fertilization (composting): 33 – 58% adoption depending on the sites | As SRA/SRI and hillside rehabilitation are on-going activities the adoption rate is still low in general. The adoption rate of potato growing is remarkably high (90%) in this site where farmers KH members or non-members have already experienced the high yields from improved technique associated with organic fertilization system. |
| 20% augmentation of yields and revenues | 30 to 200% augmentation of potato yields and beans planted with the improved seed techniques 8% to 50% increase of revenues depending on the ZSI | |

| | | |
|--|--|--|
| 20 villages doing community resource management activities | ZSI Northern corridor: 1 village engaged in eucalyptus afforestation ZSI Central corridor: 6 villages involved in eucalyptus afforestation and community forest management ZSI Southern corridor: 7 villages involved in eucalyptus and pine afforestation and community forest management. | |
| 5 Community Resource Management contracts signed | 1 Participatory Forest Management program in Ambohimahasina: participatory diagnostic in 5 Fokontany involved Mobilization of local communities within 3 sites identified to start the Contractual Forest Management (CFM) process : Ikongo, Miarinarivo, Alatsinainy-lalamarina | |
| 500 ha placed under Community Resource Management agreements | A long and complex process of negotiations with local communities, Service des Eaux et Forêts and other interested parties (AGERAS, CMP, MIRAY, ...) is on-going to initiate the Community Forest Management in 4 sites selected. | |
| Minimum of 20 environmental education/communication activities | 4 films projections on fish farming, SRI, coffee planting as alternative actions to destructive traditional practices Training of 14 Jeunes Kolo Harena in the ZSI northern and central corridor 3 puppet shows on the key messages of LDI Fianarantsoa : "Improvement of livelihoods and preservation of the environment" Editing and distribution of 150 copies of brochures explaining the credit system and input supply centers. Support for the creation of the Fañina association which will produce the Fañoitsa Journal destined for the villagers. | |
| 10 new EFE supported in all regions | 1 new EFE in railbike ecotourism. Continue to support 8 EFE involved in the filières of ecotourism, essential oils, beekeeping and fish farming | |
| 2 new EFE investment projects | Promotion of railbike tourism along the railway | |
| Total investment of \$50,000 in the EFES | 2 EFE (Domaine Nature and Camp Catta) in study and negotiation to be eligible in the FIEFE program will invest about \$ 63,000. | |
| 100 villagers supported by LDI having commercial relations with the EFES | 46 members of 5 future Kolo Harena associations in Manakara have started to grow 6441 coffee stalks with improved techniques. The production will be sold to AGROMAN involved in exporting organic agricultural products (coffee cultures, pepper, and banana). | With the rapid expansion of fish farming activities, the number of Kolo Harena in relation with the EFES will increase after the different shows of interest during the KH-EFE meeting day |
| 2 Federations of Kolo Harena associations legally constituted | ZSI Northern corridor: 1 federation formalized ZSI Central corridor: 3 federations formalized ZSI Southern corridor: 2 federations formalized | The establishment of another federation for the low altitude region in western Ranomafana will be completed before the opening of the input supply center for this zone. |
| 15 partner organizations reinforced by capacity building activities | 13 organizations that participate actively in LDI's activities at village and regional levels either through contracts, training and stipends or with the assistance of expert-juniors. | |
| 2 partners assisted with ecoregional capacity building | CMP (Comité Multi-Local de Planification) : search for a common vision for the management of the corridor | LDI supports the launching of an action-test in view of the community management of the pine plantations in Haute-Ranomainty within the frame of the PDFR (Plan Directeur Forestier Régional) COPIL. |
| 4 new capacity building initiatives | Training on techniques of animation and meeting conducting for the partners' field agents Training-recycling of the MICET team in the creation of communication tools and pedagogy | |

b) Analysis of the indicators

Indicators of Agricultural Intensification Activities

In general, all the indicator objectives related to agricultural activities of Kolo Harena are attained but variations in performance are seen in ZSI north and central corridor villages. Increase in yields and revenues are particularly significant at the household level thanks to the results of vegetable gardens and off-season activities. Hillside rehabilitation activities have a weak adoption rate in most of the sites due to the investment in time and labor demanded. But since the rainy season has just begun, this activity will intensify even more during the second semester.



Use of mulching is one of improved techniques proposed to Kolo Harena to increase yields significantly

Indicators for CBRNM activities

The LDI Fianarantsoa staff invests its efforts in training the Kolo Harena in reforestation and in the supply of pine and eucalyptus seeds for the nurseries. These initiatives have recently bore fruit in that a large number of nurseries were created in the ZSI. The socio-organiseateurs have begun actions to give responsibility to the Kolo Harena in managing and maintaining their nurseries.

In including a number of parties having divergent interests, the GCF (Gestion Communautaire des Forêts) installment process is long and complex. Yet, a progressive advance in the process is seen among the socio-organization activities and the mobilization of communities which will be included in the monitoring of tavy practices in their territory.

Indicators for Community and Environmental Education activities

LDI Fianarantsoa is particularly dynamic in this area by proposing a variety of communication tools which bring out the key messages of LDI and which target directly the Kolo Harena. The accomplishments in this domain are starting to give their induced effects through the expansion of agricultural and EFE activities and the increase in the number of Kolo Harena.

Indicators for EFE activities

The preparation of documents eligible for the FIEFE is coming along well and the estimation of investments to be financed has already passed the indicator objectives. Some projects that represent huge commercial opportunities are among Kolo Harena activities and those of private and local operators, but actual credit budget limits forces the program to engage itself cautiously in financing investments.

Indicators of Capacity-building activities

Whether at the level of the Kolo Harena or regional partners, a number of activities varying from technical training to different workshops were carried out by the program in order to advance the eco-regional approach and to reach LDI objectives. At the regional level, the workshop organized by LDI with other partners on the search for a common vision for the management of the corridor stands out. At the level of NGOs which work in LDI sites, support for their capacity reinforcement targets the technical and organizational gaps of field staff.

5. Mahajanga

Although the Mahajanga region has only recently attracted attention regarding its biological resources, the region is rich in its biodiversity. The greatest part of the Malagasy dry forest is found here. In terms of biodiversity, one might cite the example of the Ankarafantsika protected forest complex, internationally renowned for its birds. 117 bird species have been identified, including several species of water birds, of which 66 are endemic. The fresh water turtle *Erymnochelys madagascariensis* has not been found outside the lakes of Ankarafantsika.

The Bongolava classified forest is also known for its wealth of floral species. The forest plays an important role in maintaining the ecological, and particularly the hydrological, balance between the dry Bongolava plateau and the neighboring agricultural lowlands in the Bemarivo River valley.

These 2 forest blocks are covering and protecting important water basins that capture rainwater, and promote infiltration, flows and distribution of water to the peripheral zones. Various hydrological studies have demonstrated their importance as water sources for the Mahajanga region. The advanced state of degradation in plant cover is a current concern. Deforestation also implies a loss of habitat and the loss of endemic plant and animal species. These forest systems are devastated annually by uncontrolled bush fires, many of which are started within the forest. The result is a discontinuous forest cover interrupted by numerous clearings created by repeated fires. Every year the clearings, populated by savanna grasses, are made larger by the fire, increasing the surface directly exposed to the forces of rain and soil erosion.

The deforestation of the water basins will have catastrophic consequences for the surrounding low-lying zones, which are among the most important agricultural regions in Madagascar (Marovoay Plain, Ambato-Boeni and the baibohos along the Bemarivo River from Mampikony to Port Bergé). The results to be expected include flooding in the rainy season dried up water sources in the dry season and silting up of dams, irrigation canals and rice paddies. As the dry forest disappears, the ever-growing demand for charcoal and lumber will force increased pressures on the mangroves that have been mostly spared so far.

LDI-Mahajanga in collaboration with various partners is focusing on activities that combat the fire pressure, illegal lumber exploitation, charcoal making and the clearing of forests for agricultural land, and in ways that will alleviate poverty, which is a primary cause for the degradation of the priority ecosystems in the region. These activities include: supporting key sub-sectors such as cashew nuts and fruit processing; intensification, diversification and integration of crop and livestock production systems; and creating formal village associations to assure the sustainability of the activities. The expected results are increased agricultural productivity and incomes, and reduced poverty and human pressures on the forest.

In addition to these activities, the initiation of environmental education and creation of fire control committees together with our development partners, village leaders and administrative institutions in the ZSIs gives reason for hope that the fire threat can be reduced in the short and long term.

Nevertheless, in spite of the willingness of the target population to work with us, the continuing arrival of new immigrants, and the failure to apply existing laws, regulations and sanctions by responsible government agencies can compromise any and all efforts if not soon remedied. The return of the locusts of 1999 could also spell disaster if early and effective measures are not taken by the CNLA (national committee to combat locusts).

5.1 Principal results

5.1.1 Eco-regional Support

Regional Planning

LDI continued collaborating with multiple partners in the region, participating in regional planning workshops and in installing a regional monitoring and evaluation system.

- In the framework of executing activities in the Ankarafantsika peripheral zone, LDI signed a protocol agreement with ANGAP/Ankarafantsika. To reinforce this agreement, a workshop was organized in September to coordinate development/conservation activities of the several actors intervening in the region. In response to the accelerated degradation of the watersheds in Ankarafantsika by soil erosion, LDI has decided to contribute to the stabilization of the Androtra watershed. A feasibility study has already been done, and a second preparatory technical study is underway to measure the extent and cost of the needed interventions.

- LDI organized several meetings of the “Cashew Club” to reactivate the club and prepare members for the upcoming cashew planting promotional campaign. At the request of the club, LDI is sponsoring a study on the merits of seeking a reclassification of cashew as an agricultural cash crop rather than a forest species as it is currently classified.

Regional communication plan.

Under the provisions of the regional communications plan, and in collaboration with MIRAY-Mahajanga, 3500 lambahoany were ordered and delivered bearing the slogan “A burned forest leads to drought and famine” under 2 images: one a preserved landscape, the other a burned-over landscape.

The first 62 lambahoany were distributed as prizes to members of 3 Kolo Harena in the Anosomijoro forest during the ceremony observing the signature of GPF contracts transferring management rights for the forest to the 3 communities. A 6-month test phase contract was signed with M3TV for the production and broadcasting of programs on priority environmental themes. Four 30-minute programs were produced and broadcast 20 times by 5 radio stations in the region.

Support for Road Users Associations (AUP)

When the CAP project was closed, LDI contracted with the ONG LALANA to continue providing technical assistance for 1 year to Road User Associations (AUP) in Bealanana, Bekobay and Marovoay. The level of assistance varied from zone to zone depending on the experience and management capacity of the local associations and unions: 100% in Bealanana (4 weeks per month), 50% for the Bekobay road (2 weeks per month) and 50% for the Marovoay zone.

The main achievements of the past 6 months are as follows:

- Support and monitoring of officers in administrative and accounting functions for the Union of Road Users Associations (UAUP), including preparing road maintenance work estimates.
- Redynamization of the Miradia UAUP by installing a controller for management of the road Marosakoa- Ambolomoty-Ampijoroa-Tsiandrara.
- Implementation of maintenance work on the Bealanana-Ambatoriha, including: 100 m2 of ballasting; clearing of 2 km of drainage ditches; repairs of damaged points; regravelling and leveling; and point repairs on the Ambovondramanesy-Bekobay road.
- Contributions of the UAUPs to maintenance work financed by the FER (Roads Maintenance Fund) equaled 10%, of which 10 million FMG came from the UAUP of Bealanana, 6 million from UAUP Bekobay and 4 million from UAUP Ambolomoty.
- Erecting of rain gates (by order of the communes) to protect the road during the rainy season.

A summary of the most notable activities of last 6-month's is presented in the table below.

| | | |
|-------------------------|--|---|
| Regional support | Agricultural intensification <u>Center for Agricultural Intensification (CDIA-Miadana):</u> <ul style="list-style-type: none"> - Completion of tree planting and crop harvest activities as part of the first year development plan for the center. Preparation a 2nd year development plan. - Study conducted to define a strategy for continued functioning of the CDIA post-LDI. - CDIA training program for 2001 finalized. Training sessions organized for LDI field agents, partner agents and KH members. | FOFIFA |
| | CBNRM <ul style="list-style-type: none"> - Signature of 3 GPF contracts to transfer management of portions of the Anosomijoro forest to 3 CLB. | CANFORET Mahajanga II |
| | Environmental Education <ul style="list-style-type: none"> - Production of 3500 lambahoany with environmental themes and 4 radio programs. - Preparation of a protocol agreement with CCEE. - Recruitment of an Expert Junior for environmental education. | MIRAY M3TV SOATEG |
| | Conservation Enterprises <ul style="list-style-type: none"> - Arrival of 3 shipments of factory equipment from Europe for EXOFRUIMAD with a capacity to process a quantity of fruit juice valued at 1 billion FMG per year. The equipment will be installed in February 2001, and production starts in March. - Steps taken to find partners and prepare an application for FIEFE financing by the Malagasy Seafood Company to install a mobile fish processing unit (to produce frozen fillet for export). | EXOFRUIMAD MALAGASY SEAFOOD TRADING COMPANY KARMALY/KALFANE |

| | |
|---|-------|
| <ul style="list-style-type: none"> - Diversification of the Vonona Women's Association into drying of hot pepper. - Negotiation with FITIM SA of Mahajanga to promote production and marketing of paka (kenaf) by KH farmers. - A request for assistance submitted to LDI for the construction of the Coquereli Eco-lodge complex next to Ankarafantsika National Park. (Eco-tourism) - Submission by NGO MIKAJY of a proposal to develop the Anjohibe Cave site for eco-tourism. - Study carried out by consulting firm ECR to define a strategy for promoting gas and kerosene as cooking fuel alternatives to charcoal. - Negotiation of an agreement with VITOGAZ and Entreprenre à Madagascar (EAM) to promote gas as a cooking in the towns of Mahajanga, Marovoay and Port Bergé: including a consumer credit scheme to facilitate purchase of the initial bottle and gas stove. - Request received from Kafane Firm for assistance in designing and installing an artisanal cashew nut kernel-extracting unit. Contacts with expert consultant in Brazil initiated and terms of reference for a consultancy in January-February 2001 developed. Tour of the cashew industry in India, including processors using artisanal technologies scheduled for February 2001. - Preparations of a study to look at the merits of reclassifying cashew from forest species to agricultural tree crop, to be carried out in January. - Partial completion of a study to define a strategy for developing the raffia sub-sector in the ZSI. - Marketing study conducted to evaluate the interest of various private firms in the food processing sector in processing and marketing Jamaica (<i>Hibiscus sabdariffa</i>). | |
| <p>Strengthening local partner capacity</p> <ul style="list-style-type: none"> - Provided organizational support for the Workshop on Development Strategies for the Ankarafantsika Peripheral Zone in September. - Continued to foster the evolution of the Cashew Club as a forum for discussions/planning/negotiation among actors in the cashew sub-sector, by sponsoring workshops and meetings. - Provided training to cashew club members in setting up and managing a cashew tree nursery. | ANGAP |

5.1.2 Achievements in each ZSI

Agricultural Intensification

The jebly (off) season crops were brought to term and harvested and the asara (rainy) cropping season started. The campaign to promote cashew planting was given a boost by the introduction of village nurseries in all 4 ZSIs. Field agents promoted other tree crops including lemons and combava for which there is a lot of interest on the part of villagers in Ankijabe, Tsararano and Ankazomborona.

LDI is working with the NGO SAF-FJKM and Entreprenre à Madagascar (EAM) in implementing its rural credit program. The total value of credit (inputs) extended in the past 6 months in 19,813,126 FMG. The reimbursement rate so far is fairly low except in the ZSI of Ankazomborona. Nevertheless, applications for credit including cash loans from EAM are on the increase.

Infrastructure development during the period in question included the virtual completion of the rehabilitation of the dam at Bemilolo (ZSI Tsarahasina) and digging of the irrigation canals. The participation of the local community in digging is 100% complete and the contribution in materials 95% complete.



Kolo Harena "Taratra" has a stock of 6 tons of rice in its Community Granary

Community-Based Natural Resource Management

The GPF contract transferring management rights for the Anosomijoro forest to 3 associations of charcoal-makers was officialized during a signing ceremony on December 14, 2000. The 3 Local Base Communities (CLB) were registered with the office of the Faritany. Three other GPF contracts in ZSIs are at various stages in the process, including the forests of Marosely in ZSI Tsarahasina, Antahialava and Andohan'I Belalitra in ZSI Ankijabe, and Andavatsiotra and Tsandrora in Tsararano. For all three, the stages of establishing the boundaries of the forest resource and doing the forest inventory are complete. For Marosely, the next stage is to develop the management plan and draw up the contract. A consultant will be brought in for this job.

The KH Rindra in Ankijabe took the initiative to reforest the land around Lake Matsaborimena.



Rehabilitation of the dam at Bemilolo

Conservation Enterprises Promotion

- EXOFRUIMAD has imported all its juice-making equipment from Europe. Installation is scheduled for February 2001.
- MALAGASY Seafood-Company has been approved for financing and identified its equipment needs for the mobile fish processing unit.
- The Vonona women's Association in Andranofasika participated in a food and agricultural fair in La Réunion thanks to funding by Pride.
- The site for the Coquereli Lodge has been identified, and the entrepreneur is in the process purchasing and registering the land.
- VITOGAZ has accepted the terms of the draft collaborative agreement drawn up by LDI.
- The community granary of KH Taratra in ZSI Tsararano is operational.
- New TOR were submitted to several consultants to complete the study of the raffia subsector initiated by the consulting firm Rconseil.
- The firm Homéopharma (specialized in medicinal plant products, essential oils and herbal teas) made a formal request for LDI assistance in identifying and marketing *Hibiscus sabdariffa* based products.

Environmental Education

Field agents continue to sensitize KH members on the short and long term destructive effects of uncontrolled bush fires and clear cutting of forest for agriculture or charcoal production. LDI signed a cooperative agreement with CCEE (Environmental Education and Cultural Center, attached to the Ministry of Education) to implement a program of environmental education of school teachers, distribution of the book "Ny Voary", planting of trees, and environmental education for KH members.

Partner Capacity Building

Within the framework of capacity building for development/conservation partners, 8 new KH were created in 3 ZSIs, and 2 federations of KH will soon see the light of day in 2 SIZES. Two training sessions for KH and other development partners were organized at the CDIA.

The table below summarizes the results by activity and by ZSI:

| Strategic Zone of Intervention | Achievement | Partners |
|--|--|---|
| <p>Tsararano</p> <ul style="list-style-type: none"> - Area : 300 Km2 - Population : 7810 - Density : 26 inhab./km2 - #Villages/hamlets : 60+ - #Fokontany : 7 - Ethnic Composition : 15 groups with domination by Antaisaka | <p>Agricultural intensification</p> <ul style="list-style-type: none"> - Use of manure in rice nurseries. - Training in use of the cono-puddler and puddling of 4 hectares. - Adoption of bio-intensive vegetable gardening on 41.2 ares. - Creation of 900 meters of fire breaks to protect cashew plantings. - Filling and seeding of 3548 village nursery pots for production of cashew plants. - Identification of sites for implementation of erosion control practices. - Planting of 2 ares of hibiscus test plots per KH. - Use of improved practices in planting 1.45 ha of rice (SRA/SRI), 0.12 ha of maize, 0.38 ha of cassava and 0.25 ha of peanuts. - Preparation of the asara (rainy) season 200-2001. <p>Credit</p> <ul style="list-style-type: none"> - Number of beneficiaries: 61 families from 10 KH. - Reimbursement rate: 48.93% for loans of seed and Toky plows. - Disbursement of a 15 million FMG loan to Kolo Harena Taratra for buying rice for the community granary. - 6 tons of paddy rice collected and stored in the Taratra community granary. - Identification of beneficiaries for the next cropping campaign. <p>Infrastructure</p> <ul style="list-style-type: none"> - Construction of a community granaries for the Kolo Harena "Taratra" in Bekalila and "Soaniarahana" in Betaramahamay. | <p>ANGAP</p> <p>IPNR</p> <p>SAF/FJKM</p> <p>EAM</p> |
| | <p>CBNRM</p> <ul style="list-style-type: none"> - Creation and legalization. (in process) of the Local Base Community (CLB) of "Imaintsoanala", comprising 32 families. Delimitation of the Antahialava forest. - Forest resource inventory and mapping of the site. - Diagnosis of forest resources. - Sensitization of the population on the need to create a dina for management of fire and cutting of trees. | <p>BEST</p> <p>CANFORET</p> <p>Marovoay</p> |
| | <p>Environmental Education</p> <ul style="list-style-type: none"> - Identification of 4 schools interested in doing reforestation projects. - Identification of listener groups for broadcasts of the radio program "SARIVOLANA". | <p>CCEE</p> <p>DODWELL TRUST</p> |
| | <p>Strengthening local partners capacity</p> <ul style="list-style-type: none"> - Procurement of legal status for 10 Kolo Harena in 10 villages. - Creation of 2 new Kolo Harena in 2 villages. - Preparations for the establishment of a federation of Kolo Harena "TANJONA" for the ZSI. - Practical training of KH officers on organization of a group and on the roles and responsibilities of the elected officers. | <p>BEST</p> |
| <p>Ankazomborona</p> <ul style="list-style-type: none"> - Area : 1950 Km2 - Population : 22,731 - Density : 11.6 inhab./km2 - #Villages/hamlets : 50+ - #Fokontany : 10 - Ethnic Composition : 17 groups with domination by Tsimihety and Bara | <p>Agricultural intensification</p> <ul style="list-style-type: none"> - Weeding and mulching cashew plantations. - Clear 500 m of fire break for protection of cashews (35 households) - Use of improved practices in planting 5.40 ha of rice (SRI/SRA), 0.31 ha of maize, 0.60 ha of cassava. - Planting out 30 combava plants and 50 lemon tree plants. - Filling and seeding of 3442 nursery pots for production of cashew plants. - Preparations for the asara (rainy) cropping season. - Planting of 2 ares of hibiscus test plots per KH. <p>Credit</p> <ul style="list-style-type: none"> - Number of beneficiaries: 56 families from 5 KH. - Reimbursement rate: 100% for loans of seed. - Identification of beneficiaries for the next cropping campaign. <p>Infrastructure</p> <ul style="list-style-type: none"> - Identification of 3 dam sites (Andohafomby, Ambodisatrana, Rafia de Mahavita) and initiation of feasibility studies. | <p>SAF/FJKM</p> |
| | <p>CBNRM</p> <ul style="list-style-type: none"> - Officialization of dina for stray cattle by 4 villages. - Creation of a committee to monitor application of dina for stray cattle. - Application of an inter-community dina for charcoal-making/tree-cutting/forest clearing/raffia management and bush fires by 9 Kolo Harena. | |
| | <p>Environmental Education</p> <ul style="list-style-type: none"> - Identification of 4 schools interested in doing reforestation projects. | <p>CCEE</p> |
| | <p>Conservation Enterprise</p> | |
| | <p>Strengthening local partners capacity</p> <ul style="list-style-type: none"> - Creation of 6 KH in 7 villages of which 4 are legalized. | |

| | | |
|---|---|--|
| | <ul style="list-style-type: none"> - Creation of 3 new Kolo Harena in 3 villages. - Establishment of a Water Users Association. - Practical training of KH officers on organization of a group and on the roles and responsibilities of the elected officers. - Establishment of the federation of Kolo Harena (animation, sensitization, preparation and discussion of rules and procedures). | BEST |
| <p>Ankijabe</p> <ul style="list-style-type: none"> - Area : 600 Km2 - Population : 6618 - Density :11 inhab./km2 - #Villages/hamlets : 47+ - #Fokontany : 8 - Ethnic Composition: 9 groups with domination by Sakalava. | <p>Agricultural intensification</p> <ul style="list-style-type: none"> - Use of animal manure by 17 families from 6 KH (8 to 20 tons/ha on 1.9 ha of rice fields). - Production of compost (1.5 m x 1.5 m) - Laying out contour lines for planting vetiver to protect 36 ares of rice. - Use of improved practices in planting 13.80 ha of rice (SRI/SRA), 0.25 ha of maize, 2,65 ha of cassava and 0.65 ha of peanuts. - Bio-intensive cultivation of vegetable crops on 50.4 ares. - Filling and seeding of 1220 nursery pots for production of cashew plants. - Introduction on credit of 175 improved-race ducks and 2 cocks to 2 KH. - Planting of 2 ares of hibiscus test plots per KH. <p>Credit</p> <ul style="list-style-type: none"> - Number of beneficiaries of seed on credit: 25 families from 6 KH. - Reimbursement rate: 88,14% for loans of seed. - Identification of beneficiaries for the next cropping campaign. - Beneficiaries of credit to raise ducks: 6 families from 2 KH (1,686,000 FMG) - New production loan requests received from 16 households in the amount of 5,778,000 FMG. | <p>SAF/FJKM</p> <p>EAM</p> <p>EAM</p> |
| | <p>CBNRM</p> <ul style="list-style-type: none"> - Animation/sensitization of the concerned local communities re: management of the Andohan'1 Belalitra-Andavatsiotra-Tsiandroraha raffia forest. - A census of members of the Local Base Community (CLB). - Creation of the CLB "Lovaso Fanantenana" for the management of 55 ha of raffia with members from 7 neighboring villages. Officialization is at the Faritany level awaiting issuance of the official receipt. - Official delimitation of the raffia forest. - Inventory and diagnosis of renewable natural resources in the forest. | <p>BEST</p> <p>CANFORET</p> |
| | <p>Environmental Education</p> <ul style="list-style-type: none"> - Identification of 4 schools interested in doing reforestation projects. | CCEE |
| | <p>Conservation Enterprises</p> <ul style="list-style-type: none"> - Technical assistance for the Vonona Association (fruit drying) - Creation of a KH for bee-keeping - Study to define a strategy for promoting/developing the raffia subsector. | ANGAP |
| | <p>Strengthening local partners capacity</p> <ul style="list-style-type: none"> - Training of FENU field agents on nursery techniques for cashew plant production. - Legalization of 10 KH in 10 villages. - Creation of 3 new Kolo Harena in 3 villages of which 2 are in the process of being officialized and 1 is at the internal rules and regulations formulation stage. - Creation of the Federation "TSARALOKO" of all the KH in Ankijabe ZSI (information/sensitization, preparation/discussion of internal rules & regulations) - Training in and practical application of internal group organizational themes including roles and duties of officers. | <p>FENU</p> <p>BEST</p> |
| <p>Tsarahasina</p> <ul style="list-style-type: none"> - Area : 922 Km2 - Population : 13,165 - Density :14.3 inhab./km2 - #Villages/hamlets : 47 - #Fokontany : 7 - Ethnic Composition: 15 groups with domination by Tsimihety. | <p>Agricultural intensification</p> <ul style="list-style-type: none"> - Bio-intensive cultivation of vegetable crops on 4.80 ares: Brède morelle, tomatoes, Chinese cabbage and squash by 10 households. - Use of improved practices in planting 1.14 ha of rice (SRI/SRA), 0.87 ha of maize, 0,02 ha of cassava and 2.22 ha of peanuts. - Filling and seeding of 3579 nursery pots for production of cashew plants. - Establishing a 21 sq. m nursery to produce eucalyptus seedlings for a community reforestation project. - Planting of 2 ares of hibiscus test plots per KH. <p>Credit</p> <ul style="list-style-type: none"> - Organizing information meetings on rural credit. - Identification of beneficiaries for the next cropping campaign. <p>Infrastructure</p> <ul style="list-style-type: none"> - Rehabilitation of the dam and canal system at Bemilolo. | |
| | <p>CBNRM</p> <ul style="list-style-type: none"> - Creation and formalization of the Local Base Community (CLB) of Marosely. - Delimitation and forest resource inventory of the Marosely forest to be managed under a GPF contract. - Preparation of required texts (contract for the transfer of management, technical specifications for the management, Dina and the Annual Work Plan). - Preparation of TOR for the development of a forest resource-use and management plan. | <p>CANFORET</p> <p>MIRAY</p> <p>ODAI</p> |

| | | |
|--|--|-----------------------|
| | <ul style="list-style-type: none"> - Approval of the communal dina by the procurer of Port Bergé. - Reactivation of the Committee to combat bush fires of Bemilolo | |
| | <p>Environmental Education</p> <ul style="list-style-type: none"> - Identification of 4 schools interested in doing reforestation projects. - Identification of listener groups for broadcasts of the radio program "SARIVOLANA". | CCEE DODWELL TRUST |
| | <p>Conservation Enterprise</p> <ul style="list-style-type: none"> - Study carried out in Port Bergé to define a strategy to promote gas and kerosene as substitute for charcoal as a cooking fuel. | |
| | <p>Strengthening local partners capacity</p> <ul style="list-style-type: none"> - Creation of 3 new Kolo Harena (officialization in process). - Creation of a Federation of all the KH in the ZSI. (information/sensitization, preparation/discussion of internal rules & regulations) - Practical training of KH officers on organization of a group and on the roles and responsibilities of the elected officers. - Training of KH members on techniques of planting cashews in a village nursery. | BEST |

5.2 Major constraints

There has been limited progress in resolving the main constraints encountered during the first year.

- LDI provided training to several development partners with some positive results. Nevertheless, weaknesses remain as demonstrated in poor performance in implementing selected extension, credit and environmental programs. In some cases this has led to annulling or non-renewal of contracts (Ressources Vertes and IPNR).
- Low and poorly distributed rainfall led to crop failure for many farmers, especially in Tsarahasina ZSI, which is causing several KH members to be hesitant in asking for production loans.
- Difficulties in accessing certain ZSIs (Ankazomborona and Tsarahasina) during the rainy season are forcing field supervisors, agents and socio-organizers to use ox-carts when bicycles and motorcycles are useless.

5.3 Performance Analysis

5.3.1 Qualitative Analysis

Looking at all 4 ZSIs and beyond them at the regional level, the program continues the challenge of promoting cashew tree planting by villagers and entrepreneur-planters. There is continuing and growing interest in the planting campaign by many partners (AGEX, NGOs, local authorities, Kolo Harena and private entrepreneurs). During a meeting of the Cashew Club (a forum of actors in the subsector initiated by LDI), the official status of cashews as a forest tree was debated, and consideration given to seeking its reclassification as an agricultural crop to avoid restrictive regulations and taxes, and facilitate its adoption by farmers as a cash crop.

The strategy of LDI-Mahajanga in the energy subsector is to promote gas as a cooking fuel substitute for charcoal in collaboration with VITOGAZ. A draft cooperative agreement LDI-VITOGAZ was drawn up by LDI and accepted by VITOGAZ. A signing ceremony to launch the promotional campaign will take place early in the new year. Under this agreement, LDI will be working with CRS to demonstrate the advantages and use of gas as a cooking fuel in target quarters in Mahajanga. Marovoay and Port Bergé, and working with EAM to provide access to consumer credit for new adopters of gas.

Among the support activities of LDI for the AUPs, in addition to organizational reinforcement, is the planting of vegetative cover crops to protect the roads and surrounding areas against soil erosion. This activity which comprises planting several species of trees (cashew, eucalyptus, Acacia mangium) and vetiver grass along the 111.5 km of road rehabilitated by CAP, also motivates the AUPs to take the necessary measures against bush fires that threaten the new plantations and the natural forest and savannah resources.

The rain barriers erected to protect the road against damage caused by vehicles driving through the mud are also useful in controlling the illicit production and trade in charcoal. The UAUP of Bekobay road also participated in the preparation of rules and regulations governing the protection of the Amboromaika forest.

The achievements at the ZSI level are also notable.

a) ZSI Ankazomborona

The problems of access to the zone during the rainy season remains the main constraint to the providing technical assistance to the KH. Moreover, the lack of baibocho and irrigation means that there is no jeby (dry) season crop in this ZSI. In spite of its problems, the KH in Ankazomborona have shown dynamism often surpassing better endowed ZSIs. A closer look at the ZSI shows that 90% of KH members in ZSI Ankazomborona are convinced of the advantages of using improved seed. Over 90% reimbursed their seed loans for asara 1999-2000, and new loan applications are being processed for this year. Between 50 and 60% of the members of the Kolo-Harena have stated their intention to apply the recommended packages of practices on their own fields this year. Rice remains the dominant crop.

b) ZSI Ankijabe

Lemon and combava planting has not yet reached the level of cashews, but the interest is growing, especially in Ankijabe, for these citrus fruit trees. Interest in vegetable gardening and small livestock (ducks, chicken) is also on the ascent. Having identified a serious private sector partner (Homéopharma) who promises a market for Hibiscus, LDI has begun testing the crop on small plots as a potential annual cash crop in all KH villages. The picture for the input credit initiative is less positive. The rate of reimbursement for input loans has been low (40%), mainly due to organizational weakness on the part of the implementing partner SAF. This situation is being reviewed and measures taken to correct it.

c) ZSI Tsararano

Of the two community granaries built with LDI support in Tsararano, one is already operational thanks to a loan from EAM, and the second will start operating at the asara season harvest time (May-June 2001). As in Ankijabe, the input credit reimbursement rate to date is unacceptably low. However, a preponderant share of the defaulted loans concerns 2 KH in the same village of Ambanjabe. The 2 KH benefiting from the construction of the granaries are both dynamic. There is demonstrable interest among KH members and others in Tsararano ZSI in planting cashews (see annual report 1999-2000) and the women in the zone are playing an important role in diffusing improved vegetable gardening practices.

d) ZSI Tsarahasina

The field staff in Tsarahasina has finally regained the confidence of the local population following the abrupt replacement of the entire previous staff one year ago. Several associations created with the assistance of ODAI have requested help from the LDI agents for the upcoming cropping season, many wishing to become Kolo Harena. With the ODAI project closing next year, the ODAI director has encouraged this development. During the past jeby season (April-September), only 7% of the KH members tried the new packages of practices on their own farms. This should pick up considerably in the coming year. The dominant crops are rice, peanuts, cassava and corn.

ZSI Tsarahasina experienced poor production last year due to the early end of the rains, a result that is making farmers hesitate to take out loans on seed or equipment. Nevertheless, field agents continue to inform and encourage farmers regarding production loans available through EAM for the asara season. There is a growing but uneven interest in planting cashews. With the introduction of village tree nurseries, one member of the KH Mamokatra produced 80% of the cashew plants produced by all KH put together. But after the fact, many farmers expressed interest in planting cashews. As in the other ZSI, test plots of Hibiscus are being planted by individual volunteer farmers (3 KH). In Bemilolo, where LDI is rehabilitating the dam and irrigation system, the community of Bemilolo established a Dina concerning the digging of the irrigation canals and supplying local materials (sand, gravel) for the dam. Those who did not participate are excluded from the Water Users Association. The mayor of Tsarahasina Commune and the Sous-Préfét of Port-Bergé both participated in the preparation of the Dina. In Marosely, progress was made in completing the transfer of forest management to the CLB. The next step is to prepare the management plan and the contract, which will be signed in the next few months.

5.3.2 Quantitative analysis

a) Description of results

Agricultural Intensification: In one year the average number of families working with LDI increased 427%, from 55 to 235 families per ZSI. These families are members of 51 Kolo Harena associations in 40 villages.

The crops of most interest to KH are rice, maize, cassava and peanuts, the traditional staples and primary cash crops. There is secondary and growing interest in vegetable production and new cash crops being

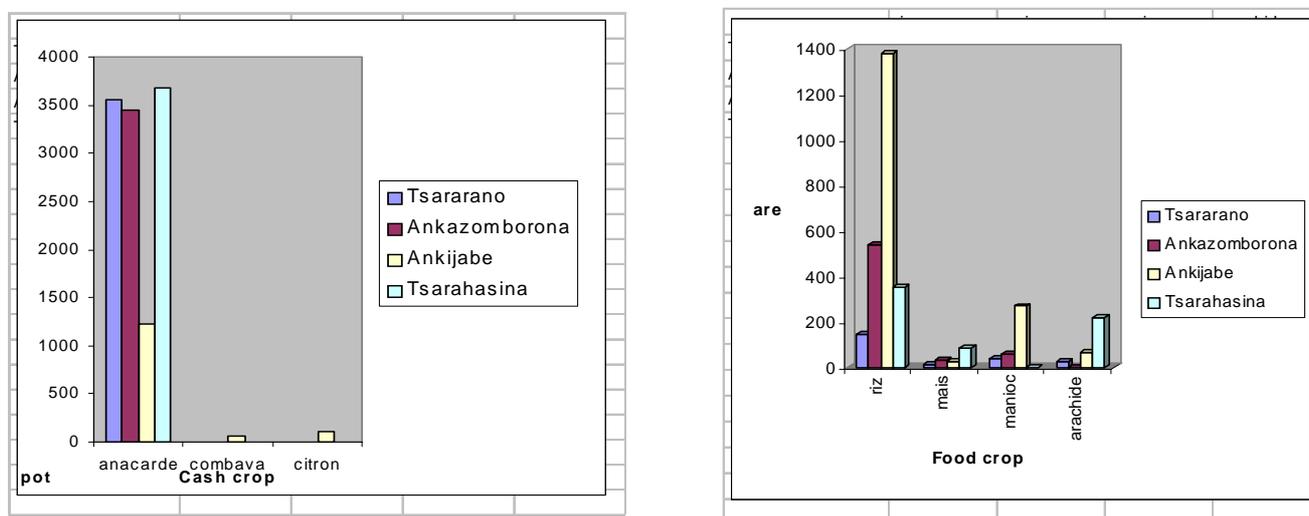
introduced by LDI. LDI is working with the CARE/PAPAT program in the diffusion of improved cassava cultivars. New crops being tested and or diffused with the assistance of LDI include cashew, lemon, combava and Jamaica (*Hibiscus sabdariffa*). In particular, the promotion of cashew tree planting was given a boost by the production and displaying of posters throughout the ZSI and the introduction of cashew tree nurseries in villages (current status = 11,889 plants in village nurseries) to compliment direct seeding efforts. Similar programs are leveraging this effort by LDI partners (ANAE, FENU, PLAE, ODAI, and MIKAJY) in villages inside and outside of ZSI.

The rehabilitation of the irrigation system (dam and canals) at Bemilolo in Tsarahasina ZSI is 90% complete. When finished it will irrigate 81 ha of rice, with a potential to expand to 140 ha.

Preparations for the asara season are in full swing in the 4 ZSI. The agricultural intensification goal for use of improved packages of agricultural practices is set at 700 families in 40 villages. As we prepare for the asara campaign, 326 families have expressed their intention to adopt improved practices for one or another of the principal crops (rice, maize, cassava, peanuts, and vegetables). All the KH want to plant cashews, either individually or as a group activity.

The areas planted to LDI-diffused practices and estimated yields in the 4 ZSI during the Jeby (off-) season are presented in the figures 1.

Fig. 1: Distribution of improved cropping practices in the ZSI



Community Based Natural Resource Management: LDI Mahajanga is doing specific community based natural resource activities in 33 villages in collaboration with ANGAP, ODAI, DIREF and CANFORET. The transfer of forest management rights through GPF contracts is advancing apace in Mahajanga and concerns 2542 hectares of forest and/or raffia. The goal of finalizing community-based resource management contracts in 2 ZSI is 50% complete as procedures for 3 GPF contracts are in the advanced stages. Three Local Base Communities (CLB) were created one each in the ZSI of Tsararano, Ankijabe and Tsarahasina. CANFORET (forest cantonment) offices assisted LDI in laying out the boundaries, mapping the forest, and doing natural resource inventories for the forests of Marosely, Antahialava et Andohan'i Belalitra/Andavatsiotra/Tsiandrora. The terms of reference are ready for consultants to prepare a development and management plans for these forests together with the CLB, E&F and the communes concerned. The resulting 3 GPF contracts will affect 161 families in 10 villages. The other 3 GPF contracts signed in December, but with KH outside the ZSI; therefore not contributing to this goal.

The Commune of Ankazomborona has approved the application of a dina for combating bush fires and managing grazing land in the Sainte Marie zone.

Conservation Enterprises. The fruit processing activities supported by LDI are moving ahead with the arrival from Europe of all the equipment for the EXOFRUIMAD fruit juice factory to be opened in Mahajanga early next year.

The Vonona fruit drying women's association, long time beneficiaries of LDI assistance, participated in a agricultural food fair in La Réunion with the sponsorship of The Pride Madagascar program.

In the energy sector, in pursuit of viable cooking fuel substitutes for charcoal, LDI negotiated with VITOGAZ (private gas distribution company), CRS and EAM on terms for an agreement to be signed in January; an

agreement on a strategy for promoting gas (and kerosene) in the towns of Mahajanga, Marovoay and Port Bergé.

Environmental Education. At the regional level, LDI collaborated with MIRAY in producing 3500 lambahoany for distribution to rural populations as prizes for exemplary environmental conservation efforts, and planning 4 radio programs on environmental protection topics for broadcast throughout the region. LDI recruited an expert junior to assist KH federations in promoting environmental education for adults.

LDI is renegotiating an agreement with CCEE for implementing an environmental education activity in schools in ZSI starting in January, to include a school tree planting project.

LDI is collaborating with the Dodwell Trust to distribute wind-up radios and organize listener/discussion groups for the environmental radio drama "Sarivolana" to be broadcast. The listener groups are already identified.

Strengthening local partner capacity. LDI organized training on several topics at the CDIA (reforestation, cashew nursery management, extension techniques, bio-intensive gardening), for the benefit of diverse participants (LDI field agents, partner agents, KH representants, cashew club members). LDI field staff continued training of KH members in cropping and livestock techniques and organizational skills in the ZSI. Almost all KH have been formalized as legally recognized associations, with the exception of newly created association this year. The socio-organizers are assisting the 40 KH to form 4 federations of KH, one in each ZSI within the next 6 months.

The female membership of Kolo Harena by ZSI is as follows: 20% women members for the 13 KH in Tsararano, 26% for the 10 KH in Ankazomborona, 17% for the 13 KH in Ankijabe, and 27% for the 12 KH in Tsarahasina.

b) Indicators analysis

To assist in the evaluation and analysis of the indicators defined in the LDI monitoring and evaluation plan, LDI Mahajanga is using a number of methods.

Large-scale cartography (1/10,000th) based on aerial photographs taken before and after the project to obtain qualitative and quantitative data on changing vegetation cover (tavy, bush fires).

Village territory maps to have qualitative data from villagers at the village level (abandoned fields, new plantings).

Household journals (25 registers per ZSI) and technical forms to monitor household crop and livestock yield/production, revenues and expenditures.

Minutes and reports of CANFORET (Forest Service Cantonment) in Marovoay and Port Bergé, and reports of regional development/conservation partners, providing complementary information on illegal timber cutting, charcoal production and bush fires.

A manual for monitoring indicators has just been completed.

Nevertheless, with the information at hand, we can only describe the indicator changes during the past 6 months or since June 2000 in comparison with the t1 (July 1999-June 2000). The assessment of the developmental impact of LDI PY3 interventions and the reduction of pressures will only be possible in June 2001. The information from the household journals that were started in selected ZSI households last March gave some indications of changes in income.

The following table presents indicator changes during the past 6 months in comparison with the year two targets.

| LDI Second Year Targets July 2000 to June 2001 | Situation July 2000 – December 2000 in Mahajanga | Observations |
|---|---|--|
| 280 Kolo Harena associations -6,000 member | 51 Kolo Harena 753 members | 2 KH created, but no name in the meantime |
| - 20% of targeted households will adopt improved practices 50% of targeted households use improved practices Disburse \$ 60,000 in rural credit. \$40.000 of which are new credit disbursement | <i>ZSI Ankazomborona</i> : no saison jebly <i>ZSI Ankijabe</i> : 25 %families use improved practices <i>ZSI Tsararano</i> 18 %families use improved practices <i>ZSI Tsarahasina</i> : 24% families use improved practices All ZSI : 2% families adopt improved practices Disburse \$ 3,050 in rural credit | Waterproblem during the saison jebly |
| 20% augmentation of yields and revenues | 41,3 % yield increase for peanuts 99,5 % yield increase for rice 120% yield increase for cassava 88% yield increase for mais 16,3 % increase of income | Data for peanuts cassava and mais without farmer control but a comparison with the asara campaign Rice yield : data from SRI Income : from « cahier de ménage »(average from 96 farmers working with LDI in the 4 ZSI) |
| 45 villages doing community conservation, Gelose or GPF 200 villages involved in sustainable use of natural resources management | 3 GPF contracts in process for the forests of Antahialava (ZSI Tsararano), Marosely (ZSI Tsarahasina, Andohan'i Belaitra (ZSI Ankijabe) 22 villages involved in sustainable use of natural resources management | The total estimated forest area involved is 2542 hectares in 18 villages |
| Complete and sign 5 participatory forest management. Continue the process with 10 other participatory natural resources management | 3 GPF contracts signed for the forest of Anosomijoro. Continue to support the process with 3 other participatory natural resources management | These 3 contracts involved 1,734 ha of forest |
| - 27 environmental education activities with communities - Fully implement the LDI and the regional communication plan | Lambahoany distribution as prizes for exemplary environmental conservation efforts 4 radio programs on environmental protection topics and drama broadcast "Sarivolana" with Dodwell Trust Memorandum of understanding signed between LDI and CCEE to launch environmental education activities (school tree planting project) LDI and regional communication plan completed | Ecoles identified for school reforestation Recruitment of an expert-junior for environmental education |
| 10 new EFE supported by LDI. Continue to support and assist 23 conservation enterprises | - No new EFE supported by LDI but continue to support 12 EFE | |
| 5 new EFE investment projects assisted by LDI | Two EFE continue to invest in fruit and vegetables (Exofruimad) and fish (MSC) processing factories since last year. | |
| Total investment in conservation enterprise will average \$ 400,000(Biosave and Mon Desir). Of which \$180,000 from FIEFE | The investment is estimated at \$500,000 for MSC and \$150,000 for EXOFRUIMAD since last year. No new investment for this year | |
| 205 farmers will have commercial relationship with conservation enterprises | 15 farmers has relationship with conservation enterprise | |
| 66 regional partners collaborate in planning, communication, information system and implementation | 30 regional partners collaborate in planning, communication, information system and implementation | |
| Working with 280 Kolo Harena associations and 6,044 members 6 federations of Kolo Harena associations 1 union of Kolo Harena Federations | <i>ZSI Ankazomborona</i> : 10 Kolo Harena, 6 formalized <i>ZSI Ankijabe</i> : : 13Kolo Harena, 10 formalized <i>ZSI Tsararano</i> : 13 Kolo Harena, 12 formalized <i>ZSI Tsarahasina</i> : 15 Kolo Harena, 9 formalized Total 51 Kolo Harena associations with 753 members | |
| 15 NGOs working with LDI -5 NGOs and associations trained by LDI | 7 NGOs working with LDI 2 NGOs and 39 associations trained by LDI | |
| Number of conservation enterprises in key sectors, in LDI region : ecotourism, essential oil and produits biologiques | 0 | |
| Incidence of bushfires | Methodology for tavy and bushfires measurement has been developed. Assessment is in progress. | |

5.4 Programmed activities for the next 6 months.

5.4.1 Agricultural Intensification

Activities planned for the first six months of 2001, starting with asara (Jan-May 2001) include:

- Diffusion of anti-erosion contour hedgerows of vetiver or Pennisetum kizozhi.
- Diffusion of improved packages of practices for field crops: rice, corn, peanuts, and cassava.
- Diffusion of cashew tree planting, including production of nursery plants and direct seeding.
- Diffusion of combava and lemon tree planting via creation of village nurseries.
- Testing of Hibiscus sabdariffa in small plots (2 ares per KH) to observe productivity, quality of final product (dried calices) and acceptability by the farmers.
- Monitoring of pests and training of farmers in integrated pest management for crops.
- Monitoring crop performance on improved practices fields and control fields.
- Monitoring the performance of semi-intensive duck rearing activity in 2 KH in Ankijabe.

The jebly season cropping season begins in April, following the recession of floodwaters.

The activities scheduled for the jebly season include:

- Diffusion of packages of improved practices for jebly season crops: rice, corn, peanuts, and cowpeas.
- Identification of input needs (especially seed) and suppliers.
- Diffusion of bio-intensive vegetable gardening techniques.

With regards to infrastructure development, 2 new dams are planned for the ZSI of Ankazomborona. The sites have already been identified with KH members. The technical study will be done during the rainy season (January-February) and the dams built during the dry season (after May) with the participation of the beneficiaries (local materials and labor). Then the future users will be organized into Water User Associations and trained in irrigation water system management.

Agricultural credit will be available to KH farmers for both the asara and jebly seasons. Activities, ongoing and future, include:

- Monitoring disbursement and use of cash loans by EAM and production input/equipment loans by SAF for the asara season.
- Identification of KH borrowers for jebly season.
- Preparation of loan requests and disbursement of loans for the jebly season.
- Monitoring the collection of 2nd loan installment payments for equipment credit disbursed in 2000.
- Preparation of the loan request for the Community Granary SOANIARAHANA Betaramahamay.

5.4.2 Conservation Enterprises

The activities through June 2001 will consist of consolidating initiatives already started in the original target subsectors (Cashews, Processed fruit/vegetables, Energy, Raffia, fish and Ecotourism), but also some new ones identified this year (aloès and paka or kenaf).

Among the activities are:

- **PROCESSED FRUIT:** Support of EXOFRUIMAD in the start-up of the fruit processing factory in Mahajanga. The factory will start operations in April at which time EXOFRUIMAD will request further technical assistance from LDI (perhaps an EJ), and will negotiate an agreement with Kolo Harena to provide assistance in planting fruit tree orchards and purchase of fruits.
- **FISH:** Initiation of a test of a pisciculture system that entails raising tilapia in floating net-cage in a lake in Ankijabe. If this system works, it will be replicated to produce tilapia for the planned Malagasy Seafood Company mobile fish processing plant.
- **ECOTOURISM:** Following an abortive reconnaissance mission to the Anjohibe Caves by a delegation from the Ministry of Culture in December (due to unexpectedly heavy rains that made the road impassable), another mission will be scheduled early in the new year, after which an committee of ministry nominees and various stakeholders will prepare development and management plans for the site (a national heritage site).
Also assist the operators of the Coquereli Ecolodge (Ankarafantsika Park) project to develop an architectural design for the lodge and a business plan for the project.
- **ENERGY:** Vitogaz, with strong support from LDI, will launch its campaign to promote natural gas as a substitute for charcoal. LDI will also support a campaign to promote kerosene as a second alternative to

charcoal. The LDI support activities will include: mass communication (TV and radio spots, and billboards), person to person communications (demonstrations in selected sections of Mahajanga town, Marovoay and Port Bergé), and a consumer credit program to help first time gas users pay for the first bottle and stove.

- HIBISCUS SABDARIFFA: At the request of Homéopharma, LDI will assist in identifying new processing methods for hibiscus and in the marketing of hibiscus-based products. LDI will also work with other companies that continue to show interest in hibiscus (p.e. Taf).
- ALOE: LDI will be conducting field production tests at Miadana and assisting operators interested in investing in aloe production-processing-marketing.
- PAKA: In response to a request from FITIM, LDI will be conducting a production trial of Paka (kenaf) at Miadana with the goal of defining an agronomic package to accompany the diffusion of Paka among ZSI farmers next year. FITIM will guarantee purchase for all production, under the terms of a convention signed with LDI in 2000.
- CASHEW: Technical assistance at the request of the Kalfane Company in the form of an expert consultant in cashew processing who will assist in planning a low-investment, manual-intensive cashew processing unit, source the needed equipment, and identify training needs for the personnel.
- RAFFIA: A study of the raffia subsector is planned early in the new year to complete the study of Rconseil, and propose a practical strategy for LDI to support the development of raffia in the ZSI, including concrete recommendations for strengthening actors at all levels from villagers/producers to collectors to processors to exporters.

5.4.3 Communication and Environmental Education

LDI-Mahajanga will focus in ZSI on adults (KH members) and children (schools, teachers, and tree planting projects). The primary partner, CCEE, has experience in environmental education in schools but limited experience with adults education. Therefore, LDI will call on LOVA/PACT to provide training of CCEE in principles and techniques of adult education in the next 3 months. After which CCEE will then be called upon to practice the newly acquired skills in educating KH members in all 4 ZSI on the three critical environmental pressure themes for the region: bush fires, cutting trees for charcoal production and tavy farming. Besides discussing the negative effects of these pressures, CCEE will be helping KH members to make the connection with pressure reduction activities such as agricultural intensification.

In collaboration with the DODWELL TRUST, LDI will be organizing listeners groups in the ZSI to listen to and discuss the radio program SARIVOLANA that effectively incorporates environmental themes in a dramatic setting. The DODWELL TRUST will provide wind-up radios.

The radio environmental broadcast phase of the regional environmental communications plan, that was implemented during the past 6 months with several broadcasts on multiple themes and on several radio stations throughout the Mahajanga region, will be evaluated prior to scheduling any further radio broadcasts.

5.4.4 Community-Based Natural Resource Management

The activities planned are:

- Officializing of the CLBs “Imaitsoanala” and “Lovaso Fanantenana”
- Preparing of the development and management plan for the forest in Marosely.
- Signature of the GPF contract and accessory documents (technical specifications, Dina, Annual Work Plan)
- Strengthening the management capacity of the CLB (training)
- Finalizing and officialization of the inter-community Dina regarding bush fires and cutting trees.
- Monitoring the application of the Dina in collaboration with the Dina Commission of the Federation of KH.

For the Anosomijoro and Amboromaika forests on the Bekobay Road, the following activities are planned:

- Increasing the management capacity of the 3 CLB (training)
- Implementing the GPF contracts for Anosomijoro forest already signed.
- Finalizing the accessory documents for the protection of the Amboromaika forest.
- Getting approval of these documents by all stakeholders

5.4.5 Strengthening Partner Capacity

The activities planned include:

- Implementing the strategies agreed upon in Antananarivo for increasing the number of KH, strengthening their capacity, and assuring sustainable impact of LDI interventions (holding participatory analysis and planning meetings at KH, ZSI and regional levels).

- Identification and training of Farmer-Trainers for each KH.
- Officialization of newly formed KH.
- Creation and officialization of the federations of KH in each ZSI.
- Training of KH officers members
- Monitoring and strengthening of the supervision and technical assistance provided the Water Users Association of Bemilolo (Tsarahasina ZSI) in managing and maintaining the newly rehabilitated irrigation system, and the KH Soaniarahana in managing the newly built Community Granary in Betaramahamay (Tsararano ZSI).
- Monitoring and strengthening the implementation of pisciculture in floating cages in Lake Belango by the KH Ezaka Miray in Ankijabe.

6. Moramanga region

6.1 Principal Results

6.1.1 Eco-regional Activities

LDI Moramanga works with a growing number of Kolo Harena farmer associations. We are pleased to report the creation of 8 new Kolo Harena and a 49% increase in the number of members, as well as the existence Kolo Harena Federations in each of the ZSIs. These structures will be very important and influential in helping farmers link up with regional development decision-makers. New structures have been created for associations of water-users associations (AUE), so they can join the ranks of Kolo Harena and benefit from LDI support. These AUE will oversee the maintenance of and organize the use of recently rehabilitated or constructed dams and irrigation systems, while formally renouncing destructive agricultural practices and adopting intensified agricultural techniques. A new director has also been hired for CDIA. In order to help the center advance and to insure auto financing, an operational procedures audit was implemented and a new procedures manual established.

The principal accomplishments are:

Eco-regional planning and follow-up:

- Participation in the eco-regional planning process for the Lac Alaotra region
- Participation in CPSE (Comite de Planification et Suivi/Evaluation) group for the Moramanga region
- Participation in the AGERAS diagnostic study (Etude Diagnostique) for the Moramanga eco-region
- Participation in the Moramanga CRD (Comite Regional du Développement)
- Participation in the regional information system for Moramanga.
- Recruited a regional infrastructure engineer and an office head at Ambatondrazaka.

Regional communication and education plan:

- Creation and technical support of a CIM (Center d'Information de Moramanga) which serves as a regional platform for environmental and development information exchange.
- Technical and organizational support of the committee organizing the local exposition "Vavy Sambany 2000" in Beforona.
- Support of the Kolo Harena Federation by helping the Alaotra Kolo Harena "Rindran'Alaotra" participate in the 2000 exposition at Ambatondrazaka.
- Beginning steps to implement CCV (Centres Culturels Villageois) in 4 villages at Lake Alaotra and Antanandava in collaboration with MIRAY (Consortium PACT – Conservation International – WWF).

Center for Propagation of Agricultural Techniques (CDIA -Centre de Diffusion pour l'Intensification Agricole):

- Hired a new CDIA director.
- Completed a center audit to improve management systems and put in place a new procedure manual.
- Completed bridge and road repairs necessary due to cyclone damage that once again opened the road to the CDIA.

6.1.2 Agricultural Intensification

New structures, including 3 irrigation dams and 5 supply centers, have been put in place in all the ZSI for the cyclone rehabilitation program (details are in volume 2 of this document).

We have completed the purchase of a batch of agricultural materials valued at 179,500,000 Fmg that will be made available to farmers working with LDI. Kolo Harena members received credit totaling \$20,815.

Coffee farming continues to expand and reach the most interested farmers. We have also delivered, in collaboration with partners, several training sessions addressing various aspects of our interventions.

The principal accomplishments are:

- Created a small-scale rural credit program for Kolo Harena members that are managed by the Malagasy NGO OTIV (Ombona Tahiry Ifampisamborana Vola). The amount loaned to farmers totaled \$20,815.
- Signed the contract between LDI Moramanga and *Exploitation Agricole D'Ambalabe* for improvement of coffee production and technical training in the Ambatovy and Beforana strategic zones of intervention (100,000 arabica coffee plants for Ambatovy and 100,000 robusta coffee plants for Beforana).

- Technical assistance for Kolo Harena in improved small animal husbandry (beekeeping, fish culture, poultry and pigs, duck), crop pest and disease control, making and using compost, agroforestry, protection and development of upland agricultural systems, fishculture, and raising ducks and geese.
- Financial and organizational assistance that enabled Kolo Harenas to receive monthly technical training from partner organizations (CIRAGRI, CIRPV, TefySaina, Tanyमितso, tany tsara, CIREL, CIRPECHE, Ambatondrazaka, ONG Akama, PAECC/MPE, TANIMAITSO, Association FANAMBY, Entreprise Zina).



Farmers become more and more experts in SRI practices. They are interested in examining the demonstration plots which are shown in the CDIA Beforona

6.1.3 Community Management of Natural Resources

The regional staff and extension agents received appropriate training about how to establish contracting mechanisms to transfer management rights of natural resources to communities (*“gestion contractualisée”*). Field agents, Kolo Harena members and representatives of local administrative authorities all took steps to increase community awareness about this approach.

The following accomplishments have been noted:

- Organized and implemented training sessions on *“gestion contractualisée”* of natural resources, preparing a *“cahier du charge”* and development plan. Grassroots community groups are now being setup in the whole *fokonolona*.
- Obtained the support of local administrative authorities and law enforcement, concerning the transfer of management of natural resources derived from the Lake Alaotra marshes to 5 Kolo Harena associations.
- Provided technical and organizational support in response to a request from 3 additional communities interested in community management of swamps at Manorita, Amparihitsokatra and Madiorano.
- Obtained agreement from the Ministry of Water and Forests, the local administrative authorities and law enforcement regarding the importance of a participatory management plan for the Ambatovy forest. The elaboration of this plan is in progress and regular roundtable meetings between stakeholders insure that all parties are in agreement.
- Provided technical assistance to Phelps Dodge Mining and Kolo Harena farmer associations (in the Ambatovy strategic zone of intervention) in the form of an *expert junior* for the rational exploitation of BRF (*Bois Rameaux Fragmenté*).
- Completed a forest use study for the Ambatovy forest as the beginning for a sustainable management plan. This was done in partnership with Phelps Dodge Mining and MICET (*Malagasy Institute pour la Conservation des Environnements Tropicaux*).
- Completed a PRA study to assist in the development of a community management plan for the forest surrounding the village of Ambalavero (the Beforona strategic zone of intervention).
- Provided institutional support and capacity building assistance for the Moramanga CIREF (*Circonscription des Eaux et Forêt*) to prepare a seminar on sustainable management of natural resources.
- Strengthened the MEF/ LDI collaboration by establishing a draft agreement for the preservation of forest resources.

6.1.4 Conservation Enterprise Promotion

Our Conservation Enterprise (EFE) Promotion activities focused on putting Kolo Harena producer associations in touch with private sector buyers, resulting in the establishment of future contracting mechanisms for several of LDI's Kolo Harena associations. By helping prepare financial reports and environmental impact studies, as well as linking private sector entrepreneurs with potential funding mechanisms (FIEFE), the LDI Moramanga regional team also technically and financial supported several other activities such as: ecotourism and essential oil production.

The principal accomplishments are:

- Provided financial and technical support for PhaelFlor, a Malagasy company operating in Brickaville that produces essential oil from cinnamon. Involved local communities in the production process and provided training on sustainable harvesting techniques, PhaelFlor encourages local farmers to manage their cinnamon plantations in a sustainable manner.
- Completed a marketing agreement for dried fruit between FITAMIHAVO (a Malagasy NGO operating in the Brickaville area) and TAF (a wholesale distributor in Antananarivo). LDI Moramanga gives technical and organizational support for the production and sale of dried fruits.
- Completed an MOU between the Ambatovy Federation of Kolo Harens and Phelps Dodge Madagascar for the production of the BRF that will result in the Federation acquiring 2 chippers for mulch and compost production.
- Organized a 1 day roundtable of Kolo Harena representatives from each strategic zone of intervention and private sector representatives from Antananarivo to lay down the ground work of future contracts establishing preferential pricing for Kolo Harena associations that are committed to sustainable agriculture and conservation objectives. 48 KOLO HARENA from throughout the region were represented in this meeting.
- Provided technical support in forming architectural plans and developing a loan application for a Malagasy entrepreneur interested in expanding the capacity of a hotel facility (in accordance with eco-lodge norms) in Andasibe.
- Conducted market research and development for operators interested in essential oils and medicinal plants in collaboration with Herb Research Foundation.
- Participated in the AREA fair to develop the local market development for the essential oil products of GAIM (Groupement Agro-industriel de Moramanga).
- Conducted a preliminary investigation in collaboration with SOTRAMEX (a Malagasy entrepreneur) to evaluate the integration of the LDI's Kolo Harena farmer associations in the collection and the drying of the medicinal plant centella asiatica in the Ambatovy, Lac Alaotra and Antanandava strategic zones of Intervention.
- In collaboration with VATOMANGA (a Malagasy entrepreneur), an irrigation feasibility study for a geranium and papaya plantation totaling 150 ha.
- Organized a meeting between KOLO HARENA and BIOLANDES regarding the production and distribution of organic ginger.

6.1.5 Communication and Environmental Education

The EE and IEC components preoccupy the official leader of our regional office at the moment. We continue to solidify the content of the regional communication plan (PCR). Special efforts have been made to produce thematic radio shows and to protect sensitive existing resources in the marshes by the Lake.

By their own initiative, Kolo Harena members continue their participation in environmental activities by planting trees and replanting zozoro on the shores of Lake Alaotra.

The principle accomplishments are:

- Hired a new coordinator for IEC and environmental education.
- Began implementation of the PCR in Moramanga and Lake Alaotra through the production of a radio show on the protection of forests and the importance of marshes in people's lives.



The USA Ambassador encourages the LDI Moramanga to pursue their effort in the development during the Vavy Sambany fair celebration in Beforona

- Provided technical and organizational support for the *Vavy Sambany 2000* exposition.
- Carried out *Fetin'ny zetra 2000*, with 4 Kolo Harena groups participating. This event was accomplished in collaboration with DWCT.
- In collaboration with PACT, MIRAY and CITE, created the Centre d'Information de Moramanga (CIM). The center serves as a platform for environmental and development information collection and exchange. LDI Moramanga works closely with CIM to carry out the PCR activities.
- Participated in coordination meeting between MIRAY, AGERAS, ANGAP, ADRA and the CRD to determine the constitution of combined IEC activities and to decide upon common environmental messages, resulting in the elaboration of the PCR (Plan de Communication Régional) for Moramanga.
- Provided financial and material support for the Kolo Harenas to participate in the AREA fair and the celebration for International Environmental Day. This year, LDI also participated.
- Provided material and financial support to repair the radio emitter (which was experiencing technical problems) of a farmer owned and operated radio station in the Beforona strategic zone of intervention (Radio Akon'Ambanivolo)
- Organized training in environmental journalism for local journalists. Radio technicians in Ambatondrazaka also benefited from training during the second semester.
- In progress: the creation of CCVs (Centres Culturels Villageois) to promote discussion and exchange on environmental issues at the village level.
- Promoted of tree planting at hospitals, schools and in villages in all 4 strategic zones of intervention to improve appearances and educate villagers of the importance of maintaining soil cover.
- Conducted environmental education training for 200 teachers in the Lac Alaotra area
- Provided financial and technical support for the Fetin'ny Zetra, a celebration of the environmental importance of the Lac Alaotra marshes
- Provided technical assistance for 8 Kolo Harenas to restore destroyed areas of the Lac Alaotra marshes using cyprus

6.1.6 Partner Capacity Building

We provided support for functional trainings for new associations and their officers. As part of these trainings, experienced partners were invited to share their skills and know-how with members of the associations. Also, 500+ participants from our partners and Kolo Harena groups benefited from LDI technical training sessions (i.e. crop pest and disease control, animal husbandry, making and using compost, agroforestry, sustainability of upland production systems and fish cage-culture) and organizational and management training sessions (roles of officers of the groups). LDI assisted in the constitution of 50 Kolo Harena associations, bringing the total



BEST provided functional training to Kolo Harena members. They are proud when getting the certificate

number of members to 1320. In addition, 4 Kolo Harena federations were created, one for each ZSI. Three water user associations (AUE), comprising about 900 members, were transformed into Kolo Harena in order to better manage and maintain the infrastructures LDI recently rehabilitated, and to help them intensify their rice production. With the collaboration of BEST, Kolo Harena members, especially agricultural input supply center operation committees, were trained in managing the input supply centers located in the ZSI.

An MOU has been established between LDI and the Kolo Harena association "Tongalaza" to ensure future management of CDIA. This agreement will permit the latter to begin managing the CDIA in a sustainable and collaborative manner.

6.1.7 Monitoring and Evaluation

After an initial working session, our field teams were trained in how to conduct a self-evaluation session with each association. Our goal is to get a sense of the strengths and weaknesses in the areas of collaboration, internal management and socio-organization. The Kolo Harena members were invited to present solutions they

themselves think will be most effective. The self-evaluation, conducted within the Kolo Harena, allows members to recognize what they have already accomplished, to carry out an objective, constructive critique of what is in place and consider possible improvements towards making their goals a reality. It also encourages members to take on increasing responsibility for their own associations and ensures the sustainability of their development actions.

The accomplishments in this area are as follows:

- A participatory evaluation done by Kolo Harena members of LDI's accomplishments
- In collaboration with Kolo Harena members, designed and implemented a simple system of household and farm record keeping to assist in analyzing information so that households can make informed allocative decisions for their financial and natural resources
- Collected transect data and completed participatory mapping exercises allowing Kolo Harena members to better follow changes in their natural resources in view of promoting sustainable management techniques.
- Working with PACT, test participatory monitoring and evaluation activities for tavy were launched in collaboration with village communities, Kolo Harena associations, administrative authorities and the Water and Forest Service.



LDI Moramanga has lead an autoevaluation session with Kolo Harena farmers in order to get their feedback and suggestions in implemintina the sustainable activities proposed by LDI

The table below summarizes the principal results by ZSI in the Moramanga region

| Strategic Zone of Intervention | Achievement | Partners |
|--------------------------------|---|--|
| Beforona | Agricultural Intensification <ul style="list-style-type: none"> ▪ Financial and technical support provided to 4 Kolo Harena for the construction of 4 Community Granaries. KH collected 7.45 tons/ paddy (21.6% more than last year) ▪ Provided market garden technical training to 28 families. ▪ Provided training to 31 families on fishpond construction and management techniques ▪ Construction of 9 fishponds for 7 KH. ▪ Provided training on beekeeping techniques and hive construction for LDI field staff and 3 KH. ▪ Provided training on pork animal husbandry for LDI field agents, SAF/FJKM field agents and 20 families. ▪ Provided technical and financial support for the creation of 2 village propagation centers. ▪ Provided training on designing and managing an improved Tanimboly system for 35 families ▪ Provided technical support on SRA practice for 14 families for a total surface area of 7.65ha. ▪ Provided training on the system of organic production of Ginger as cash crop for 80 people. ▪ Acquired and distributed 13876 Kg of improved ginger seed, technique BIO (4 ha for 61 beneficiaries, 12 KH et 4 tons of improved ginger seed for non KH) ▪ Installed 5 on farm demonstration and test sites for SRI with 5 KH. ▪ Helped KH acquire 6 tons of manure for organic ginger production. ▪ Negotiated and signed a contract for the supply of 100,000 Robusta coffee plants and training for 17 KH. ▪ Duck and poultry raising techniques for 4 KH ▪ Vaccinated poultry, 437 animals treated ▪ Plant treatment and follow-up treatment for market gardening for 6KH. | PCV CIRAGRI BEMA CDIA, ESSA Mac Do Mr. Roger Marotia |
| | CBNRM <ul style="list-style-type: none"> ▪ Provided financial and technical support for a PRA done in collaboration for community based management of a 20 Ha forest. ▪ Provided financial and technical support to PhaelFlor in setting up a community based management scheme for 500 Ha of lowland rainforest in Brickaville. ▪ Received an application for GCRN, began the process. | MIRAY, AGERAS, CRD BEST TJTT |
| | Environmental Education <ul style="list-style-type: none"> ▪ Supported the celebration of the International Day of the rural woman (JIFP), baptized Vavy Sambany 2000 by the local organizing committee. ▪ Collaborated with Echo-Voahary Salama on integrating environment and health. ▪ Assisted with reforestation and school beautification projects at the local public primary school ▪ Organized periodic consciousness raising meetings of Kolo Harena in the zone on the destructiveness of Vavy. ▪ Provided training to 32 families in Ambatoharanana on the water cycle and how it relates to forest cover. ▪ Designed in collaboration with farmers groups and partners a Rural Radio program for the Zone. ▪ Acquired the necessary radio equipment to put in to place the rural radio studio for the zone. ▪ Created with the help of farmers a reforestation nursery and provided management training for the KH in Maromitety. ▪ Provided training for 10 KH on anti-erosive and fertilization techniques using leguminous plants. ▪ Furnished 1500 fingerlings to KH with the collaboration of the PCV | Minpop, PNP, SAF/ Echo Local EPP BEMA, Mediascope Swiss Cooperation PCV |
| | EFE Promotion <ul style="list-style-type: none"> ▪ Completed a study on the potential of streamlining the marketing chain for bananas in the zone. ▪ Provided technical support to FITAMIHAVO for improvement of their fruit drying operation. ▪ Conducted meetings with BIOSAVE to examine the possibility of collaborating with them on the regeneration of Ravensara. ▪ Provided technical support to PhaelFlor in preparing financial documents, feasibility and environmental impact studies and business plan for cinnamon production. ▪ Supported MENDRI in the expansion of a hotel complex. ▪ Facilitated relationship development between KH and the private sector: sale of 3 tons of organic ginger à la sté AGROMAN of Manakara. ▪ FKH Contract - Sté Solofo Jonis: Planted lemon grass on 22.3ha, Vetiver on 10,82ha et pepper on 14.22ha. | Cartier FITAMIHAVO Buffet de la gare AGROMAN Solofo Jonis |
| | Reinforcement of Partner Capacity <ul style="list-style-type: none"> ▪ Put in place the KH Federation comprised of 16 KH of Beforona. Supported the elaboration of their statutes and <i>dina</i>. ▪ Prepared an MOU between FKH and LDI for future management of a center by the FKH. | BEST BEST, SAF, BEMA |

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|--------------------|---|--|
| | <ul style="list-style-type: none"> ▪ Constructed an earthen dam with 1 KH. ▪ Provided financial and technical support for the construction of a farmer owned and operated agricultural input and supply center in Beforona. ▪ Provided management training for the farmer operated agricultural supply center. ▪ Held monthly steering committee meetings for the CDIA in Beforona. ▪ Organized a PRA in Ambatoharanana and produced a final report. ▪ Held LDI information sessions in 16 villages in the zone. ▪ Elaborated and pre-validated the statutes and internal operating procedures and helped prepare the documents for the formalization for 16 Kh. ▪ Formalized KH in the <i>Faritany</i>. ▪ Supported the formalizing of the FKH in the Faritany. ▪ Organized information sessions for access to rural credit. ▪ Arranged farmer exchange visits from farmer associations working with ADRA (13 peasants) | <p>ERASTMA BEST</p> <p>SAF, BEMA, BEST</p> <p>MIRAY, AGERAS, SAF/FJKM</p> <p>BEST</p> <p>OTIV ADRA</p> |
| Lac Alaotra | <p>Agricultural Intensification</p> <ul style="list-style-type: none"> ▪ Provided market garden technical training for 57 families. ▪ Provided SRI/SRA training to 128 families who are practicing either SRI or SRA on 143.5 Ha in the zone. ▪ Conducted soil fertility analysis for the zone. ▪ Conducted small animal husbandry survey for the zone. ▪ Provided training and technical advise in the construction and management of fishponds for the 2 KH. ▪ Helped 1 KH construct a demonstration fishpond ▪ Contributed a technical package on the cultivation of potatoes, beans and market gardens for 12.35ha for 46 beneficiaries. ▪ Constructed a canal drain, small bridge et 9 for 100 villagers KH and non KH in the zone. ▪ Provided training and support for KH on plant protection for 5KH ▪ Provided support and training for 3 KH on the construction of model structures for elevage in an enclosure. ▪ Organized training on the construction and placement of 6 forestry nurseries for 8 KH ▪ Conducted training and completed a system of agrobiological protection of the <i>tanety</i>. | <p>Tefy Saina</p> <p>FoFiFa CIREL/ABZ CIRPRH</p> <p>CIRPRH Tanimaitso</p> <p>Office engineering</p> <p>Marotia CIRPRH</p> <p>ONG AKAMA ONG AKAMA</p> |
| | <p>CBNRM</p> <ul style="list-style-type: none"> ▪ Organized a 3-day GELOSE workshop for representatives of the lakeside communities, local authorities and decentralized public services to foster a better understanding of the process. ▪ Negotiated with local authorities for 5 KH to have the right to manage their lake based natural resources. ▪ Negotiated a contract with CIREF for assistance to the KH in elaborating their individual NR management plans and development of their management skills. ▪ Created 3 new grassroots community groups for GCRN. ▪ Built awareness in the target community of collaborative activities to transform the LA zone into a RAMSARA site are currently in process. | <p>ONE/GELOSE</p> <p>CIRPECHE, CIREF, TOPO DURRELL, DOMAINE CIREF DURELL</p> |
| | <p>Environmental Education</p> <ul style="list-style-type: none"> ▪ Financially and technically supported Fety ny Zetra celebrations of 4 KH. ▪ Began to put in place CCV in 3 villages. ▪ In collaboration with BIODEV, a KH representative participated in a workshop to elaborate the environmental norms for national roads (RN). ▪ Organized periodic awareness building meetings of Kolo Harena in the zone on the destructive effects of burning the marshes ▪ Held IEC sessions on the environment, activities and objectives of LDI – organized by 1 KH. ▪ Planted a total of 10ha of zozoro, completed by 5 KH. ▪ Participated in the elaboration of the PCR in the Antsihanaka region. ▪ Completed 2 radio emissions on the state of zetra and the protection of slopes of basins. Bassins versants ▪ Planted legumes around CA to protect against erosion. | <p>DURELL</p> <p>MIRAY, CIM</p> <p>BIODEV</p> <p>CORDAL, AGERAS Radio Barawa FM, Radio Relax</p> |
| | <p>EFE Promotion</p> <ul style="list-style-type: none"> ▪ Negotiated a contract between KH and Sté ROGER on furnishing corn and peanuts for the 2000-01 planting season. ▪ Signed a contract for the production of export rice. | <p>Sté ROGER-ABZ</p> <p>MADRIGAL, FKH, AUE</p> |

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|-------------|--|---|
| Lac Alaotra | <p>Reinforcement of partners capacity</p> <ul style="list-style-type: none"> ▪ Organized and participated in a PRA analysis for the zone and produced a final report. ▪ Formalized 5 Kh. ▪ Facilitated participatory sessions to elaborate the PTA of actions for development and environmental protection with 5 KH at Lake Alaotra. ▪ Created awareness amongst farmers in 3 potential intervention villages on the objectives and activities of LDI. ▪ Provided financial and technical support for the creation of a farmer owned and operated agricultural input and supply center. ▪ Provided management training for the farmer-operated agricultural supply center. ▪ Identified and responded to an expressed need of a KH for household record keeping and budgeting training. ▪ Organized information sessions for access to rural credit and facilitated access to Fmg 79.842.500 for 5 KH. | <p>AGERAS, ANAE BEST BEST</p> <p>IRRI</p> <p>BEST</p> <p>BEST BEST</p> <p>OTIV</p> |
| Antanandava | <p>Agricultural Intensification</p> <ul style="list-style-type: none"> ▪ Provided market garden training to 35 families. ▪ Collected field soil samples for fertility analysis in the zone. ▪ Collected livestock data to be used in planning future interventions with KH. ▪ Provided training on compost production and utilization for 84 families that produced 15,800 m³ of improved compost. ▪ Provided agroforestry seed-bank management and plant propagation training for KH. ▪ Provided technical and financial support to a KH for the creation of 1 village propagation center. ▪ Contributed technical packages in IA for 40 beneficiaries on diverse agricultural speculations (potatoes (14.2 ha), beans (18ha), and market gardens. ▪ Vaccinated and treated 258 animals ▪ Provided training for raising palmipèdes (9 KH) ▪ Put in place a technical demonstration site on l'écobuage for rice culture on tanety in 2 villages. (30 ares) ▪ Set up an agro-pastoral and fodder cultivation system on 10 ha ▪ Technical animal husbandry training for KH on habitat improvement, feeding, illnesses and curative strategies. <p>CBNRM</p> <p>Environmental Education</p> <ul style="list-style-type: none"> ▪ Organized periodic consciousness raising meetings of Kolo Harena in the zone on the destructiveness of burning for pasture regeneration. ▪ Provide formal training to KH on water cycle, causes of soil erosion and ways to prevent it. ▪ In collaboration with MIRAY, set up 2 CCV at Antanandava and Imerimandroso ▪ Put in place 12 forestry nurseries. ▪ Put in place a Dina against brush fires <p>EFE Promotion</p> <ul style="list-style-type: none"> ▪ Provided financial and technical support for 2 trainings to improve the capacity of women's groups to manage community campgrounds and the Zahamena National Park. ▪ Put in place 11 agroforestry nurseries for local KH associations. <p>Reinforcement of partners capacity</p> <ul style="list-style-type: none"> ▪ Organized and participated in a PRA analysis for the zone and produced a final report. ▪ Elaborated and pre-validated the statutes and internal operating procedures and helped prepare the documents for the formalization for 6 Kh. ▪ Provided financial and technical support for the creation of a farmer owned and operated agricultural input and supply center (CA) ▪ Technical and organizational support for formalizing local KH associations. ▪ Provided management training for the farmer operated agricultural supply center. ▪ Logistical support for KH for their participation in the Ambatondrazaka exposition. ▪ Visit and PRA to the core of 3 villages with the hope of expanding our zones of action. ▪ Constitution of the FKH "FIAVOTANA" in the Antanandava zone, support elaboration of Dina and statutes. ▪ Functional support to the FKH and CA management committees. ▪ Identified and responded to an expressed need of a KH for household record keeping and budgeting training. ▪ Organized information sessions for access to rural credit and facilitated access to Fmg 21.955.000 for 4 KH. ▪ Organized and participated in workshop designed to strengthen collaborative efforts in the zone concerning upland agricultural intensification. ▪ Organized and participated in field visits with MINENV and partners in the zone. | <p>Tanimaitso FOFIFA CIREL</p> <p>SNGF</p> <p>Tanimaitso</p> <p>PAECC/MPE Tanimaitso BRL</p> <p>AKAMA PAECC-MPE</p> <p>ONG AKAMA BEST, Local Authorities</p> <p>C.I. Zahamena, PCV AKAMA</p> <p>BEST</p> <p>BEST</p> <p>BEST</p> <p>BEST</p> <p>BEST</p> <p>BEST</p> <p>BEST</p> <p>MINEV</p> |

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|-----------------|---|---|
| Ambatovy | Agricultural Intensification <ul style="list-style-type: none"> ▪ Provided technical assistance in setting up a demonstration for an "etable fumière". ▪ Installed 2 improved stables for stocking straw. ▪ Provided market garden training to 25 families. ▪ Provided technical assistance and training for construction and management of improved beehives for 7 families. Have captured at this time 2 swarms. ▪ Provide technical assistance and training on SRA techniques for local KH ▪ Provided technical assistance in setting up 1 on-farm demonstration plot of SRI techniques. ▪ Creation of a non-formal farmers association for the revival of coffee production in the zone. ▪ Negotiated and signed a contract for the supply of 100,000 Arabica coffee plants and training for KH in the zone. ▪ Expansion of coffee cultivation in progress amongst KH members, non KH and AUE (30.000 plants) ▪ Installed a plant propagation center in Ampitambe and provided training on management techniques for the KH. ▪ Provided training on improved manioc cultivation techniques for 16 families on 4 Ha. ▪ Collected field soil samples for fertility analysis in the zone. ▪ Conducted feasibility study for the rehabilitation of 2 irrigation systems benefiting 50 families in the zone. ▪ Provided training on improved upland cultivation techniques for KH in the zone. ▪ Provided training on small animal husbandry techniques to KH in the zone. ▪ Contributed a technical package for diverse agricultural speculations. ▪ Technical support for improving the irrigation system of 3.5 ha of local rice paddies. ▪ In arboriculture, planted 1030 young eucalyptus bordered with leguminous cultures on 486 meters, 3 plant nurseries set-up. ▪ Put in place 2 plant nurseries of 28 m² for legumes. ▪ Technical and financial support for use of <i>embouche bovine</i>. ▪ Processing of bird raising for 500 vaccinated animals (<i>Traitement élevage avicole</i>) ▪ Tested raising rabbits at 1 KH. ▪ Provided support to improve shelters and animal husbandry sites. (birds, cattle, rabbits) ▪ Assisted in organizing training on pest and disease control for members of 9 local KH. ▪ Provided support on producing and using 270 m³ de compost for 9 KH. ▪ Created 875 m² of fishponds, helped them obtain 1500 fingerlings. | <p>CIRAGRI</p> <p>Mac Do Mac Do</p> <p>Mac Do</p> <p>Mac Do</p> <p>FoFiFa</p> <p>Mr. Roger</p> <p>Mr Roger Mr Roger</p> <p>Marotia</p> <p>PCV</p> |
| | CBNRM <ul style="list-style-type: none"> ▪ Provided technical assistance and training for the creation of a <i>Prunus Africanum</i> propagation center to produce 3,000 seedlings for creation of a community managed buffer zone. ▪ Negotiated with PDM a Memorandum of Understanding for financing \$ 23,000 of LDI's work in the zone. ▪ Provided institutional support in the form of an <i>expert junior</i> in the elaboration of a zone management plan in collaboration with MIRAY and MEF. | <p>PRONATEX</p> <p>PDM</p> <p>SOATEG, MIRAY, MEF</p> |
| | Environmental Education <ul style="list-style-type: none"> ▪ Designed with school directors a program of environmental education to be integrated into the primary and private schools systems in the zone. ▪ Built a firebreak to protect 1 ha of local eucalyptus forest. ▪ 1 KH organized a community gathering to emphasize the importance of LDI activities and objectives 538 attended. ▪ Planted a cypress enclosure at a local public primary school. | <p>Local primary school</p> <p>Local primary school</p> |
| | EFE Promotion <ul style="list-style-type: none"> ▪ Provided technical support and training for 1 KH and 1 NGO for the creation of 2 BRF production micro-enterprises ▪ BRF enterprises are functional, socio organizational support, training on the roles of officers. ▪ Equipe technique broyeur Created and trained a flour mill management team on the maintenance and sound functioning of the machine. ▪ Papaya cultivation being prepared on 44 ha in collaboration with Sté VATOMANGA, elaboration of an OTIV credit application. ▪ Experiments conducted on cultivation and exploitation of <i>hibiscus</i> ▪ Negotiated a contract between FKH / Sté AGRICO to produce 20,000 pineapple plants. Completion in progress. ▪ Planted Pygéum, appropriate training given in collaboration with PRONATEX. | <p>VOLISOA</p> <p>CJPM</p> <p>VATOMANGA</p> <p>PDM AGRICO</p> <p>PRONATEX</p> |
| | Reinforcement of partner capacity <ul style="list-style-type: none"> ▪ Organized and participated in a PRA analysis for the zone and produced a final report. ▪ Elaborated and pre-validated the statutes and internal operating procedures and helped prepare documents and formalize 9 KH (51 members). ▪ Provided financial and technical support for the creation of a farmer owned and operated farm supply centers. ▪ Provided management training for farm supply centers. ▪ Identified and responded to an expressed need of a KH for household record keeping and budgeting training. ▪ Assisted 2 KH in the preparation of documents to submit to FID for financial assistance with construction of local infrastructures. ▪ Set up the FKH 'Hanitriniala' formed by 13 KH ▪ Supported the formalizing of FKH at the Faritany ▪ Formalized 9 KH at the Faritany | <p>BEST</p> <p>BEST</p> <p>FID</p> <p>BEST</p> |

| | | |
|------------------|--|--|
| | <ul style="list-style-type: none"> Organized information sessions for access to rural credit and facilitated access to Fmg 13.621.740 for 5 KH. | OTIV |
| Regional support | Agricultural Intensification <ul style="list-style-type: none"> Signed a cooperative agreement with MINAGRI Signed a cooperative agreement with MPE/DAECC Signed a cooperative agreement with MINEL Signed a cooperative agreement with FOFIFA Signed a cooperative agreement with FOFIFA for the creation of a 10 Ha Center for the Diffusion of Agricultural Intensification (CDIA) on the FOFIFA Beforona research station. Signed a cooperative agreement with MEF Signed a cooperative agreement with AKAMA on <i>tanety</i> activities, forest tree cultivation and agroforestry. Signed a cooperative agreement with NGO MAROTIA for protection of vegetables and on fighting plant diseases Signed a cooperative agreement with NGO <i>tany maitso</i> in order to support and train KH in IA in the Lake Alaotra region. Constructed 5 farm supply centers (CA) across the 4 zones. Provided financial support in the sum of Fmg 69.716.153 for agricultural supplies and materials at the core of the CA. Prepared and implemented a rehabilitation plan for the CDIA including: rehabilitation of 7 buildings, rehabilitation of 1.5 Kms of access road for the CDIA, construction of a training room (50 person capacity), construction of model oxen stable, fishpond and fruit tree nursery, installation of bio-intensive market garden, intensive feed garden, pork and chicken production systems, improved Tanimboly, SRI, SRA, off-season cropping and compost demonstrations. Repaired access road and bridge following their destruction during the cyclones. Completed a study of regional agricultural intensification potential and organized a workshop for LDI partners in the region. Negotiated and signed a contract with Exploitation Agricole d' Analabe for the re-introduction of coffee production in the region. Established a network of farmer owned and operated farm supply centers in the region. Constructed 5 farmer owned and operated farm supply centers CA in the ZSI in order to facilitate access of the KH to agricultural supplies. Established and operationalized 4 KH Federations, each in its respective zone of intervention. Created a network of 50 farmer associations (KH) in the region totaling over 1179 members. Made agricultural seeds available to CA to facilitate acquisition of agricultural inputs. Rehabilitated and constructed infrastructures Hired a new CDIA Director Conducted management system audit of CDIA, put in place new strict procedure manual. Established a contract for future management of CDIA with the FKH of Beforona. Arranged exchange visits and prospection of 30 ADRA partner farmers at the CDIA. Established contract with FID for construction of a dam at Ambohimanarivo Ambatovy | MINAGRI MPE MINEL FOFIFA FOFIFA, BE MA AKAMA MAROTIA TANIMAITSO BEMA, FOFIFA Exploitation Agricole d'Ambalamb e BEST ERASTMA Mac Do BEST BEST |
| | CBNRM <ul style="list-style-type: none"> Financially supported and organized a GELOSE training workshop for all regional organizations interested in CBNRM activities. Trained staff on the practical steps of a GCRN (Supervisor, SO, GCRN Coordinator, DA S&E) Supported PDM (offered services of an <i>expert junior</i>) in order to elaborate the PGF in the Ambatovy region. | ONE/GELOSE ONG Tsara Jary Tsara Tantana |
| | Environmental Education <ul style="list-style-type: none"> Financially supported and organized a regional IEC workshop. Elaborated a budget with MIRAY for the implementation of the regional IEC activities. Supported female members of KH of Beforona as well as the local organizing committee for the celebration of International Day of Rural Women (JIFP), baptized fair Vavy Sambany 2000. Implemented the PCR for the Mangoro region in collaboration with MIRAY. Conducted environmental Education radio sessions. Developed 5 CCV in the SZI, Trained 5 Moramanga and Lake Alaotra radio operators. Provided financial and technical support in the creation and implementation of an environment and development information center in Moramanga (CIM). Assisted in planning of activities of PE II actors for the Monitoring and Evaluation Committee Moramanga. Provided financial support for environmental education training of 200 teachers. Supported BEMA and Médiascope in order to rehabilitate the Radio Station of Beforona. | MIRAY, ADRA, AGERAS, CIM MIRAY MIRAY, CITE DURRELL MIRAY, CIM MIRAY AGERAS, ANGAP, ANAE BEMA, Médiascope |
| | EFE Promotion <ul style="list-style-type: none"> Financially supported and organized a series of sub-regional workshops and a regional workshop to define a regional vision for the development of ecotourism. Organized a regional visit for the Herb Research Foundation to examine essential oil production potentials in the region. Linked KH with the private sector: Madrigal, BIOLANDE, Vatomanga, AGROMAN, Sté ROGER Ambatondrazaka Supported an economic operator in submitting an application with FIEFE. Contacted NGO Solofo Jonis on planting lemon grass, vetiver and pepper. Made preliminary contact with Rail Bike with the hope of establishing a contract with RNCFM on MLA and ecotourism. | MIRAY, CI MENDRI Solofo Jonis Rail Bike, RNCFM |
| | Reinforcement of partner capacity | |

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| | <ul style="list-style-type: none"> ▪ Participated in the International Day for the Environment. ▪ Provided an Expert Junior to Phelps-Dodge. ▪ Participated in integrating health and environment activities with ECHO Voahary Salama SAF/FJKM/LDI ▪ Supported a committee to organize the celebration of the JIFP. | SOATEG |
| Regional support cont. | <ul style="list-style-type: none"> ▪ Financial support of Fmg 69.716.153 for supplying CA in the Moramanga region. ▪ Created a system of rural credit acquisition for farmer associations in LDI's strategic zones of intervention, total credit of 133.219.040FMg ▪ Participated in Regional Development Committee (CRD) meetings to strengthen collaboration and better organize development activities in the region. ▪ Financially and technically supported research by 4 graduate students from Cornell University (see following description and conclusions of research) ▪ Financially and technically supported research and thesis production for 4 Malagasy university students on the following themes: SRI, small-scale animal husbandry and compost production. ▪ Recruited and technically advised a team to do a forest use study for Phelps-Dodge. ▪ Completed discussions with all the KH regarding putting in place a farmer to farmer knowledge transfer system. | BEST OTIV AGERAS Cornell University ESSA/AGRO MICET |
| | Monitoring and evaluation <ul style="list-style-type: none"> ▪ Prepared a manual for participatory follow-up of Tavy in collaboration with the populations and administrative authorities. ▪ Organized self-evaluation sessions in order to measure improvements achieved by all the KH. ▪ Continuous monitoring of "cahiers de ménage" with KH volunteers. | |

6.2 Major Constraints

The LDI team's volume of work has greatly increased as a result of the additional cyclone recovery activities. And because greater emphasis is being placed on empowering the communities to be self-sufficient, the level of work has also increased for the "original" Kolo Harenas. Working with these "original" Kolo Harena associations, LDI is helping to develop appropriate steps and approaches to ensure an effective and sustainable farmer-to-farmer transfer of improved technologies. "Original" Kolo Harena associations are somewhat reluctant to take on this additional extension burden, but once they are convinced that LDI is not abandoning them, but rather helping them acquire greater bargaining power through expanded numbers, they begin to relish the idea of increasing their membership. As the role of LDI's field agents shift away from the classical vision of an extension agent to one of backstopping farmer innovators that will be training other farmers, training sessions are needed to develop a common vision and avoid the compartmentalization of activities.

On the subject of credit, our partner OTIV training and support remains limited, even non-existent. Although the partner is supposed to assure recovery of funds, most of the responsibility is falling on LDI, whose staff are field agents, not credit agents. As a consequence, repayment and new loan application rates are lower than would have been hoped. It has become necessary, once again, to qualify everyone's role in this initiative.

In the area of agricultural intensification, the choice and selection of off-season crop seeds, especially potato, poses a quality problem for the Moramanga Kolo Harenas. The quality of the seed potato was very heterogeneous: anywhere from 2-15cm in diameter, very few were pre-germinated and many had disease problems. Yields have suffered as a result.

6.3 Performance analysis

6.3.1 Qualitative analysis

a) ZSI Beforona

In all of LDI Moramanga ZSI considerable effort is dedicated to showing concrete links between agricultural intensification and environmental protection, no where more so than the strategic zone of Beforona. With an historically high rate of *tavy* (perhaps the highest in the country), it is very interesting to note that this year, along the flank of the mountain chain visible from the RN2 as one enters Beforona there were no incidents of primary forest *tavy*. According to Mr. Pouna a village elder, this is the first time since the 1960's that this has occurred. *Tavy* was not eliminated, it continues to be practiced, but only in previously slash and burned areas that had been left to fallow. When local elders were questioned about reasons for this phenomenon their response varied, but almost all mentioned reasons that could be linked to LDI and partner activities. Perhaps the most realistic reason is that the distance between new primary forest *tavy* fields and the villages is just becoming too great. For whatever reason, this represents a positive step forward. Hopefully by combining this phenomenon

with LDI and partner activities that provide sustainable alternatives to *tavy*, farmers will begin to understand that to survive they do not have to rely on environmentally destructive agricultural practices.

b) ZSI Ambatovy

In the zone of Ambatovy, the number of Kolo Harena associations and members has greatly increased due to farmers recognizing the effectiveness of the technical training and support given by our field agents. For a long time prior to LDI getting involved, this zone was ignored by state agricultural training services, consequently the farmers welcome LDI's consistent, appropriate, thoughtful assistance. Despite barely above average results last year due to flooding and erosion caused by the passage of two cyclones last year, farmers have been convinced of the value of composting, and are persuaded by the success the federation has had in managing the production of BRF. There were numerous requests to join KH associations and a number of groups formed spontaneously. However, admission of candidates takes place only after a mandatory period in a pseudo-association, called "groupe de base", where the applicants prove their motivation and commitment to the environmental and agricultural objectives of Kolo Harena. Currently, the Kolo Harena federation is focusing on reforestation using coffee, hibiscus and *pygeum* to create a buffer zone to protect a nearby forest, and compost production activities. Using their own capital, the federation has already purchased 13 tons of leguminous seeds to provide enriched biomass for future compost and planting activities, thereby demonstrating their willingness to plan for the future by planting today.

c) ZSI Lake Alaotra

Although the draught problem persists and off-season crop production suffered greatly as a result, there have been some interesting developments in this zone. Not only is the rate of adoption of new techniques quite high in this region, but the number of farmers with whom LDI works is also rapidly increasing. Prompted by farmers, recent discussions with Durrell Wildlife Conservation Trust (DWCT) have resulted in a collaborative agreement to work together towards common conservation and development objectives, thereby more than doubling the previous number of farmers LDI was working with in the region. Due to perceived favoritism amongst farmer associations some initial setbacks were experienced, but solid support from both LDI and DWCT has resolved these problems. Obviously, education, communication and socio-organization will play a key role in helping farmer associations that work with Durrell Wildlife Conservation Trust become "effective" Kolo Harena associations.

d) ZSI Antanandava

Anxiety, caused by the persistent drought, continues to trouble the farmers, however LDI's efforts to help repair local agriculture infrastructures (the *Lovoka* irrigation system) has provided them with a ray of hope. For the first time in many years farmers have been able to cultivate rice on approximately 400 ha of fields previously left uncultivated, due to a lack of water. In the Ampananganana and Ambodiampaly, the availability of agricultural credit has permitted certain farmers to revitalize long abandoned rice fields and to intensify their production techniques, which resulted in a notable increase in the harvest. In this zone farmer solidarity is also spontaneously appearing. For example, in Antsahakely – Antanandava the KH farmers, concerned about mutual security/support, of their own volition, created a community relief fund designed to help farmers in financial difficulty repay their loans or provide cash in emergency situations. The fund is sustained through periodic donations from members and income-generating events organized by the group. Another spontaneous local initiative is the roundtable discussion initiated by local administrative authorities; organized for the *Fokonolona* and local development actors and aided by LDI this discussion resulted in the creation of a *Dina* to prohibit brush fires.

6.3.2 Quantitative analysis

| Indicators | Expected results Y2 | Accomplishment to date | Observations |
|---|---|---|--|
| Sub-result 3.2.1 Reduced expansion of Agricultural lands threatening priority ecosystems | | | |
| Indicator 1: # Household assisted in each ZSI | 280 Kolo Harena associations 6,000 members | 1130 members of 50 Kolo Harena | LDI Moramanga observed a raise of 49.5% in relation to former results. |
| Indicator 2: # Targeted households using improved practices | - 20% of targeted households will adopt improved practices - 50% of targeted households use improved practices | 25% of KH has adopted improved practices 52.5% of KH are using improved practices. | For the use of improved practices we use the following data 50% in Ambatovy |

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| | Disburse \$60,000 in rural credit. \$40,000 of which are new credit disbursement | | 30% in Beforona 60% in Antanandava 70% in Lac Alaotra. - Information about adoption is based on household data book. |
| Indicator 3: Yields and household revenues | 20 % increase in both household income and crop production. | 50% augmentation of yields 60% augmentation of revenue | The information base is taken in household and farm data book. |
| CBNRM | | | |
| Indicator 4: # Villages with which LDI works on CBNRM | - 45 villages doing community conservation, Gelose or GPF activities 200 villages involved in sustainable use of natural resources | On going process not yet completed: 5 villages in Lac Alaotra SZI, 5 villages in Brickaville, 1 village in Ranomafana Est, | Starting new CBNRM work in Ambalavero Beforona |
| Indicator 5: # GELOSE contracts being developed | Complete and sign 5 participatory forest management. Continue the process with 10 other participatory natural resources management. | On going process in GPF activity in Ambohimamarivo. Assistance for 500 ha concession community management in Ambodimanga – Brickaville, | Constraint of no application de text for GELOSE, therefor no contract |
| Indicator 6: # Environmental education activities designed with communities | 27 environmental education activities with communities. - Fully implement the LDI and the regional communication plan | 12 running activities: - farmer managed rural radio in Beforona - CIM in Moramanga 2 finalized activities: - MARP session completed in all villages of interventions, - collaboration with Durrell for the fetin'ny zetra. - four training sessions were held for 200 teachers from 40 different primary and secondary schools to help them incorporate the environment into the national curriculum with a special emphasis on the biodiversity and environmental issues of Alaotra. Celebration of JIFP in Beforona 2 fairs accomplished by <i>KH</i> members (1 in Ambatovy and 1 in Ambohimiarina) Activities in PCR executed : running process in implementation of CCV 2 radio broadcast sessions | The farmer-managed radio will be making its test broadcast in January. CIM is currently functioning, and a business plan for self-financing is being developed with the assistance of LDI. There has been some concern over the continued absence from Moramanga of certain key employees of CIM. Issue to be raised with CITE. The Fetin'ny Zetra activity was a total success and we plan on continuing to support this initiative next year. |
| Activity level indicators sub-result 3.2.2 Increased Commercial benefits from sustainable use of natural resources | | | |
| Indicator 7: # Conservation enterprises assisted in each region | 10 new EFEs supported by LDI. Continue to support and assist 23 conservation enterprises | 10 supported CE in dried fruit, essential oil production, ecotourism and BRF production | Continuing to follow these dossiers. |
| Indicator 8: # New investment projects supported by LDI | 5 new EFEs investment projects assisted by LDI | 4 new projects in Brickaville and Ampangabe, 1 new project for MENDRI Andasibe. Rice production for export with Madrigal | Files are committed to BMOI bank |
| Indicator 9: Total investment | Total investment in conservation enterprises will average \$ 400,000 (Biosave and MonDesir). Of which \$180,000 from FIEFE | | 2 new projects in Brickaville and Ampangabe, 1 project for MENDRI Andasibe. |
| Indicator 10: # farmers supported by LDI who have commercial relationship with CE | 205 farmers will have commercial relationship with conservation enterprises | - 397 farmers having commercial relationship with CE | 32 villagers in cinnamon production, 203 farmers in BRF production, 62 peasants in ecological ginger production, 100 farmers in dried fruits production |
| Indicator 11: # of local / regional government organizations, partners, projects participating in the eco-regional process | 66 regional partners collaborate in planning, communication, information system and implementation | - 71 stakeholders in total 8 stakeholders organizations (CPSE) - 10 Stakeholders organizations (Communication) - 15 stakeholders organization | Surpassed objective |

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| | | (SIR) | |
| Indicator 12: # formalized Kolo Harena Associations participating in conservation and development activities | Working with 280 Kolo Harena associations and 6,044 members 6 federations of Kolo Harena associations 1 union of Kolo Harena Federations | 50 Kolo Harena of 1130 members | The targeted number will be reached in regard to extension of 2 new SZI in the region |
| Indicator 13: Farmers' need to abandon fields | | - | Accomplishment to be observed after implementation of participatory tavy monitoring |
| Indicator 14: Incidence of tavy | Develop methodology and assess incidence of tavy and bushfires in 3 pilot zones in LDI regions | Activities will start from 22 of January. | |
| Sub-result 3.2.2 Increased commercial benefits from the sustainable use of natural resources | | | |
| Indicator 15: # of new project developed by conservation enterprises | | - 3 new project Rice for exportation Ecological ginger BRF production | |
| Sub-result 3.2.3 Enhance capacity of local actors to undertake sustainable practices | | | |
| Indicator 16: Capacity of NGOs and local associations | 15 NGOs working with LDI 5 NGOs and associations trained by LDI | - 50 KH formalized - 4 federation set up - 0 Union of federation created - 7 qualified associations NGOs and private sector partners | |

LDI Principal results during the first semester (July 2000 – December 2000)

| First year targets: July 1999 to June 2000 | First year results July 1999-June 2000 | Second year targets July 2000 to June 2001 ¹ | July 2000 to December 2000 results |
|--|--|---|---|
| 1. 600 households assisted (60 associations of 10 members) | - 144 Kolo Harena associations - 2,275 members | - 280 Kolo Harena associations - 6,000 members | - 280 Kolo Harena associations - 7,300 members |
| 2. 50% of targeted families have adopted improved practices. | - 20 to 82% | - 20% of targeted households will adopt improved practices - 50% of targeted households use improved practices - Disburse \$60,000 in rural credit. \$40,000 of which are new credit disbursement | - Minimum of 16% of targeted households of adoption. - 52% using improved practices - Disburse \$27,000 in rural credit Regional variations are shown in each region section. |
| 3. 10% augmentation of yields and revenues | - 17 to 90% yield increase for rice - 10 to 200% yield increase for maize, peanuts and beans - Indication of increased incomes, but not yet quantifiable for some region | - 20% augmentation of yields and revenues | - minimum of 15% augmentation of yields and revenues. Regional variations are shown in each region section. |
| 4. 60 villages doing community conservation activities | 42 villages doing community conservation, Gelose or GPF activities. 128 villages are involved in sustainable use of natural resources | - 45 villages doing community conservation, Gelose or GPF activities - 200 villages involved in sustainable use of natural resources | - 43 villages are doing community conservation (dina controlling bushfire, forest management, eucalyptus afforestation,...) - 190 villages involved in sustainable use of natural resources |
| 5. A GELOSE contract per region (a surface of 100 ha) | 2 Gelose contract in process - 6 GPF contracts in process - 1 collective land tenure in process - 3 sites GPF identified in Fianarantsoa | - Complete and sign 5 participatory forest management. Continue the process with 10 other participatory natural resources management | - 3 participatory forest management signed in Mahajanga. Continue to process with 10 other participatory natural resources management |
| 6. 3 environmental education/communication activities per region | 30 environmental education activities are in progress | - 27 environmental education activities with communities. - Fully implement the LDI and the regional communication plan | - 8 categories of activities which include 15 themes are implemented (film, slides, papier mache models, training, reforestation, puppet shows, Fanoitsa gazette, fairs, posters and brochures) |
| 7. 5 EFEs supported per region | 42 conservation enterprises are supported by LDI | - 10 new EFEs supported by LDI. Continue to support and assist 23 conservation enterprises | - 15 new EFEs supported by LDI - Continue to support and assist 23 EFEs |
| 8. 2 new EFEs investment projects | - 8 new conservation enterprises investment projects at the beginning stage of implementation | - 5 new EFEs investment projects assisted by LDI | - Four projects have been submitted their investment documents in order to get investment loan |
| 9. Total investment of \$50,000 in the EFEs | - These 8 conservation enterprises will invest about \$1,554,885 | - Total investment in conservation enterprises will average \$ 400,000 (Biosave and MonDesir). Of which \$180,000 from FIEFE - Disburse \$80,000 in FIEFE | - Four projects have been submitted to the bank for \$528,700 investment amount. Of which, \$193,300 from FIEFE - |

¹ Targets depend on each regional progress. Details are shown in the regional section.

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| 10. 25 villagers supported by LDI having commercial relations with the EFEs | - 110 villagers supported by LDI having commercial relations with the EFEs | - 205 farmers will have commercial relationship with conservation enterprises | 443 farmers have commercial relationship with conservation enterprises |
| 11. 10 local/regional governmental organizations, partners, projects participating in the regional planning process | - 66 regional partners collaborate in planning, communication, information system and implementation. | - 66 regional partners collaborate in planning, communication, information system and implementation. | - 93 regional partners collaborate in communication, regional information system, education, implementation |
| 12. 5 Kolo Harena associations participating in conservation and development activities | - 144 Kolo Harena associations with 2,275 members have participated in conservation and development activities | - Working with 280 Kolo Harena associations and 6,044 members - 6 federations of Kolo Harena associations - 1 union of Kolo Harena Federations | - 280 Kolo Harena with 7,300 members - 10 federations of Kolo Harena associations are formalized on progress |
| 13. Capacity of NGOs and local associations | - 28 NGOs working with LDI - 144 Kolo Harena associations. | - 15 NGOs working with LDI - 5 NGOs and associations trained by LDI | - More than 60 governmental institutions, NGOs, private businesses and other projects - 5 NGOs and associations (MICET, ADA, AFED, Ankarana Mandroso, ETN) are trained by LDI |
| 14. Number of conservation enterprises in key sectors, in LDI region: ecotourism, essential oil and produits biologiques | 0 | | - 22 EFEs are involved in ecotourism sectors - 12 EFEs involved in essential oils production - 3 EFEs involved in biological products |
| 16. Incidence of bushfires | - Bush fires were less than in previous years, but the reduction could not be quantified | - Develop methodology and assess incidence of tavy and bushfires in 3 pilot zones in LDI regions | - Activities under implementation with Pact collaboration. Deliverables are due in June 2001. |