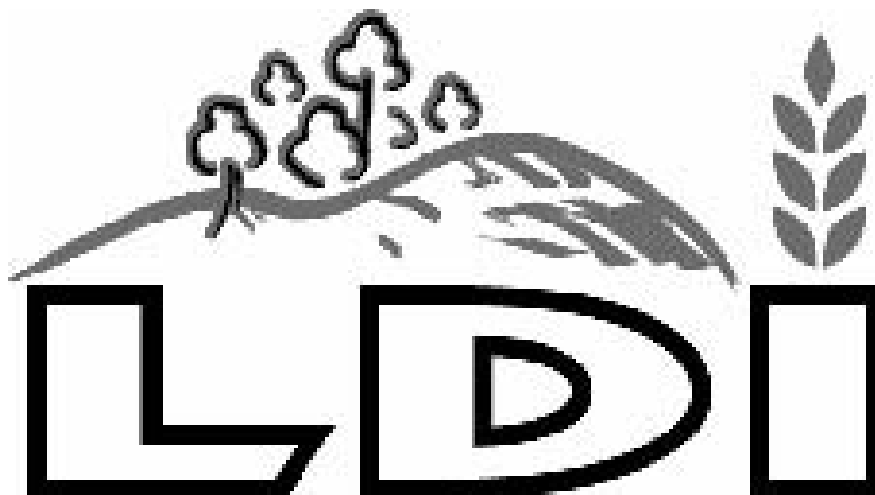


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**Landscape  
Development  
Interventions**



**Annual Report**

**Volume I : Overview and LDI**

**Regular Activities**

**July 2000 – June 2001**

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# 1. Overview and main results

The present report only covers LDI's regular activities as well as interventions related to the new component added in September 2000, under the cyclone recovery program, entitled "Urgent assistance with rail infrastructure strengthening and stabilization for the FCE. A separate report for all other productive infrastructure and systems rehabilitated through tranche 1 and 2 of cyclone funds, was submitted to the mission at the end of June 2001.

We are pleased to report that LDI continued to expand its activities, strengthen its network of partners and foster the eco-regional approach among stake holders at the local, regional and national levels. This third year of LDI implementation was full of remarkable achievements and it is quite difficult to capture all aspects of our accomplishments in a written document such as this annual report. In the regional sections, one will find a detailed presentation, as well as a qualitative and quantitative analysis of our activities.

But beyond those comments and figures, a few key features emerge that characterize our actions. We try to rapidly deliver concrete results that really meet the needs of farmer associations. We build up strong partnerships at the regional level to design and implement actions that involve many actors, in different locations, in order to protect forest corridors and alleviate poverty among rural communities. We respect our commitments and maintain a participatory dialogue with farmers and partners. Now, we disseminate new techniques, more profitable and sustainable, but we also empower farmers, so that they can acquire the necessary skills and find the material and financial resources to effectively apply those improved practices. We lay down sound foundations for long-range impacts and sustainability of farmer associations. We help establish mutually beneficial relationships between rural communities and private agribusinesses. And above all, we help farmers understand that their well being is inextricably linked to a sustainable stewardship of their natural resources.

## 1.1 Highlights

**Almost all indicators were met beyond expectation.** Even some components, such as the community based natural resource management, which previously had lackluster results, have been successfully implemented, since four GPF contracts (Gestion Participative des Forêts) were signed in the Mahajanga region and one GCF contract (Gestion Contractualisée des Forêts) was signed in the Fianarantsoa region. LDI thus is acquiring a vast experience and is becoming one of the leading projects in this domain.

**Kolo Harena (KH) associations are expanding and strengthening at a rapid pace, from 2,300 in June 2000 to 10,250 on July 1<sup>st</sup>, 2001.** This remarkable result is due to the growing demand from local communities, the opening of two new zones of intervention in the Moramanga region, the creation of Kolo Harena /water user associations under the cyclone recovery program, and the inclusion of other associations in LDI activities. Kolo Harena associations are regrouped in federations that held regional meetings in Fianarantsoa, Mahajanga and Moramanga. LDI has also arranged fruitful meetings, in each region, between representatives of Kolo Harena and executives of agribusinesses interested to establish solid business relations with farmers that will guarantee premium prices and larger volumes, while encouraging producers to improve the quality of raw materials.

We will strive to reach 20,000 KH members by the end of LDI. This number will more or less represents, on average, 10% of the population living in our ZSI. We believe this is a strict minimum if we want to suscite the emergence of a critical mass of farmers, organized in well structured associations, who will continue to exist and possibly expand, after the end of LDI. KH members must have the feeling that they belong to local and regional associations and federations that are growing in size and will continue to operate at the end of LDI. Kolo Harena must avoid the image of small, isolated organizations, artificially set up to respond to the needs and the vision of donor funded projects, which are condemned to rapidly disappear. By merely raising the issue of broader impact, we have initiated a very interesting and fruitful discussion at all levels, which is gradually leading towards a coherent methodology. The real question is how to reach more people, with decreasing resources, through an approach that increasingly relies on Kolo Harena themselves. This will be our main challenge during the upcoming years until the end of LDI.

**Considerable synergies were created between LDI regular activities and the cyclone recovery program (CRP).** Both contribute to revitalize the rural economy and protect the environment in most damaged zones of intervention. While activities under the CRP are physically well identified, they are often closely associated with other forms of technical, financial and material assistance provided by LDI to small farmers in damaged areas. Therefore, their effects are considerably multiplied because of those mutually

reinforcing interactions. For instance, seeds bought with cyclone funds are distributed through Agricultural Input Supply Centers managed by farmer associations assisted by LDI. In Fianarantsoa, fish production, as an income generating activity, is expanding rapidly thanks to cyclone funding but also because of improved techniques introduced last year by LDI and his partners. In the Moramanga region, following rehabilitation works, some farmers were able to cultivate lands that were previously unusable and increased their average yields from 1,4 T/ha to 4,9 T/ha, because of better access to improved seeds, credit and extension services provided through LDI regular activities. In summary, the cyclone recovery program provided the much needed rural infrastructure that enabled farmers to effectively apply new practices recommended by LDI, with a much better water control, and contributed to reinforce the climate of mutual confidence with farmer associations.

**LDI assistance to eco-enterprises took a new and promising dimension with the business tour organized for 17 Malagasy companies in South Africa.** The main objectives of this visit were: i) to identify new markets for eco-enterprises involved in growing, processing and exporting natural products such as essential oils, spices, fruits, etc... ii) to attract South African investor partners to Madagascar. iii) to develop information exchange networks and contacts. This trip was undoubtedly a success, since it gave participants the opportunity to meet with 85 South African companies and allowed Malagasy enterprises to initiate deals that could represent more than \$7 million in sales over the next year. Also, participants realized the tremendous potential of the South African market and came back more convinced of the need to work together, if they want to fully take advantage of new business opportunities in South Africa. The current trade deficit between Madagascar and South Africa could be seriously reduced in the upcoming years. Madagascar has an indisputable comparative advantage in the spice and essential oil sectors, and could be very competitive on the South African market, especially in light of low shipping rates, if Malagasy exporters could respect high quality standards for exported goods.

**LDI teamed up with JSI and Voahary Salama to submit a request to the David and Lucile Packard Foundation for funding a new project entitled “the Madagascar Green Healthy Communities”.** This project will promote integrated population/health and environment activities, mainly in LDI’s zones of intervention, and will contribute to control population growth while helping farmers manage their natural resources in a more sustainable manner. Activities will be oriented towards four objectives: i) increasing use of modern contraception; ii) improving natural resource management; iii) increasing of farmer’s income and food security; and iv) improving the population’s health status. “Overall, the expected result is measurable improvements of the living conditions of the communities, reduction of population pressures and preservation of biodiversity. We are pleased to initiate this project which is perfectly in line with the basic assumptions of LDI, clearly stated in our first work plan: “Over the long term, a more conducive legal, institutional and regulatory framework must be set up, the pace of rural development must be considerably accelerated, and a more dynamic demographic policy must be carried out to induce a progressive reduction of population growth ».

## 1.2 LDI success stories

### Fianarantsoa

#### Relaunch of the coastal southeast economy

The long term conservation of the Ranomafana – Andringitra forest corridor ultimately depends on the reversal of human migration toward these last intact tropical forests. Migration towards the corridor emanates from two sources – the densely populated High Plateau to the west of the corridor and the mobile populations of the coastal southeast. Following the collapse of the commercial cash crop economy of southeastern Madagascar, rural populations have been attracted to the agricultural frontier represented by the lush lowland forests of the corridor. As a way to stimulate initiatives to slow down out-migration, LDI Fianarantsoa has worked closely with the Société AGROMAN to relaunch commercial export oriented agricultural production. AGROMAN is a consortium of business interests who hold a long-term lease to a former colonial plantation near Ampasimanoro still well endowed with infrastructures and tree crops.

Last year LDI commissioned technical studies to determine the export potential for organically certified coffee, pepper, and other cash crops. Following these studies, this year LDI provided technical assistance to the farm through two *experts* juniors, an agronomist and a financial manager. The agronomist has built over 6500 m<sup>2</sup> of nurseries and planted 40,000 pepper plants. Six metric tons of ginger was outplanted along with the establishment of 2000 slips of vetiver. Rehabilitation of existing clove, coffee, and cinnamon trees

commenced. The accountant has set up a computerized financial system and put in place management systems. As the farm begins to flourish from the investment of capital and technical assistance, the expert juniors have begun to work with farmers in the surrounding communities to introduce improved cash crop farming techniques with the intention of eventually purchasing and processing locally coffee and pepper from small farmers. LDI Fianarantsoa also obtained *Fonds de Contre Valeur* from USAID to rebuild a feeder road and bridge damaged extensively by cyclones and heavy rains. The gradual rehabilitation of this farm is reviving hope from the Manakara export sector. Through the demonstration effect of the AGROMAN initiatives, economic operators are now exploring ways to restore their farms to their former productiveness. In the face of this progressive relaunching of the coastal cash crop economy, pressure is now mounting to rehabilitate the Manakara port and to convert existing wharf facilities to containerized services. LDI commissioned technical and economic studies by internationally recognized port specialists to determine the feasibility and costs of port rehabilitation in the context of a broader regional transportation study.

### **A synergy of actions between LDI, FCE Rehabilitation and ReCAP**

The ecoregional conservation and development approach presumes the creation of effective synergies between actors sharing common visions and objectives at multiple levels. Cyclone recovery activities initiated by LDI Fianarantsoa but carried out by a wide variety of actors were dramatically illustrated this past year through the FCE rehabilitation initiative. Following cyclones Eline and Gloria in February and March 2000, LDI and its partners in Fianarantsoa quickly recognized that rates of deforestation and its associated ecological and social consequences along the forest corridor would dramatically increase if the FCE railway and the Ifanadiana – Ikongo RIP 4 remained permanently closed. By feeding information and analysis into government, donor, and private sector circles LDI contributed to the infusion of USAID cyclone recovery funds into rehabilitation of the FCE and the RIP 4. This in turn sets the scene for the new FCE Rehabilitation Project and the ReCAP project to attract further complementary funds from the World Bank, the Japanese development agency, the UNDP, the European Union, and several other donors. Donor and government of Malagasy support for the FCE encourages European private railways to continue to contribute materials and equipment to the rehabilitation of the railway at highly reduced costs.

These investments of millions of dollars of supplemental funding will assure the rehabilitation of the Fianarantsoa transportation network – the foundation so essential for the recovery of market oriented agriculture and conservation enterprises. The LDI Fianarantsoa staff launched the long-term recovery of the FCE railway by securing cyclone recovery funds. Supplemental Congressional funds enabled LDI to open quickly the FCE after the cyclones and over the past year stabilize embankments and tunnels while at the same time commence work with farmers to restore the ecology of the land immediately adjacent to the railway. Soil stabilizing techniques such as the planting of over 800,000 slips of vetiver and 2000 fruit trees on farmer's fields at critical points along the railway will increase farmer's yields of cash crops and thus higher transport revenues for the FCE. At the same time, the rehabilitation of the Ifanadiana – Ikongo RIP 4 and other secondary roads by ReCAP will feed agricultural produce toward the railway for export into the regional economy or toward the port of Manakara.

### **Mahajanga**

#### **Gas is Green**

Though Charcoal's still queen  
of Mahajanga cuisine,  
they've starting to wean  
on a fuel that's more green  
- Anonymous (and wants to stay that way)

Charcoal is the cooking fuel of choice in Mahajanga town, where 75% of households use only charcoal and another 15% use charcoal in combination with another fuel (wood, kerosene, or gas). Mahajanga's 32-thousand households consume over 16-thousand tons of the stuff yearly. To satisfy the demand, one hundred thousand tons of wood is harvested from the dry forest; more than 4000 hectares of forest lost per year.

Recognizing the threat to the dry forest, and that increasing the supply through artificial tree plantations and introduction of more efficient charcoal ovens could never satisfy this huge and growing demand for charcoal, LDI decided to tackle the demand-side directly by promoting an alternative cooking fuel. The choice fell to gas (butane).

In collaboration with the private company Vitogaz that was just starting up in Madagascar, LDI launched a campaign in April 2001 to promote gas as a friendly, efficient, clean and affordable cooking fuel. The campaign comprised 4 elements:

1. A consumer credit scheme to spread out payments for the deposit on the first bottle over 6 months, at 15% p.a. interest;
2. A click-on burner and pot-support (fatapera), plus the first charge of gas thrown in as a bonus;
3. A door-to-door and market-place promotion in all 26 quarters of Mahajanga town; and,
4. A mass media campaign including television/radio spots, and billboard posters.

At the start of the campaign, less than 5% of the households in Mahajanga used gas at all. After 1 month, and 1000 buyers, that figure had risen to over 8%. Most of these households will continue to use charcoal along with the gas, but at a reduced rate.

The subsidy for the burner and gas-charge ended with the first 1000 sales; and the resulting price increase to the consumer is expected to slow the rate of adoption. However, the interest in gas evinced by the population during the early months of the campaign is such that the target of 4500 gas-users in Mahajanga town by the end of PY4 would appear to be well within reach.

### **Farmers pitch to business-folk and score a hit.**

Over the past 2 years, LDI has been helping village farmers diversify their agriculture while increasing productivity, by introducing new cash crops and diffusing improved seed and sound agronomic practices. Structures were put into place to buttress these diffusion efforts including a credit program and a Center for Agricultural Intensification (CDIA). At the same time, farmers were encouraged to organize into village associations (Koloharena or KH) and subsequently into federations of village associations, with resident socio-organizers in each zone providing support and training in organizational and management skills.

Thus the direction and means were provided for producing more produce: rice, corn, peanuts, cassava, black-eyed peas, vegetables, cashews, lemons, and others. A market was needed for these products.

LDI anticipated the need and worked with selected enterprises in Mahajanga (young and old businesses) over the same 2-year period to develop markets for KH products. An example is EXOFRUIMAD, a startup fruit juice factory. LDI conducted a study of fruit supplies in the Boina region and a demand study for natural juices in 3 cities in Madagascar, as well as preparing a financial dossier for EXOFRUIMAD in support of a loan request. The factory began test operations in March 2001, and had its first products (lemon and pineapple juice) on the shelves of Mahajanga shops in May.

The next step was to bring the 2 sides, KH-federations and businesses, together to negotiate sales-purchase agreements. This happened for the first time on June 8<sup>th</sup> 2001 at the Piscine Hotel in Mahajanga town. Fifteen representatives of the 5 federations of KH met with representatives of 12 enterprises. The former were prepared for the encounter during a 2-day training session 3 weeks earlier that concentrated on understanding market fundamentals (prices, minimum quantity requirements, contracts) and negotiating skills. They were then sent home to collect the information needed from farmers in the zone.

A day before the meeting, the federation representatives were guided in organizing their product information and polishing their presentations. The next day, following introductory talks, the business representatives were divided by commodity interest and seated at tables for rice, corn, peanuts & coconuts, cashew nuts & raffia, fruits, and vegetables. The negotiations began.

At the end of the day, the two sides had signed 4 contracts for immediate commodity purchases and 16 agreements for the next cropping season. Both sides expressed satisfaction with the encounter and a hope that it becomes a regular event (institution) in future.

### **Moramanga**

#### **Cooperative agreement between the Ministry of Water and Forests, ANGAP, Regional Government and LDI**

Realizing the importance of not only agricultural intensification, but also the sustainable use and management of natural resources within the Moramanga region, the LDI team undertook the task of linking

the efforts of regional natural resource management stakeholders, to provide an example of a “win-win-win” situation. Working with MEF, ANGAP and the President of the *Faritany*, LDI Moramanga recently formalized a four party cooperative agreement whereby the parties agreed to work together to better address urgent natural resource conservation and management issues in the Toamasina region.

In this agreement, all parties have committed to defining a common vision for the protection of the Mantadia-Zahamena corridor and the creation of an annual work plan for the implementation of this vision. Signature of the cooperative agreement on May 14, 2001 activated the agreement and annual workplan, allowing LDI Moramanga to begin providing technical and financial assistance (per diem) to the other three concerned parties. Recognizing the fact that MEF, ANGAP and regional government staff lacked knowledge of recent developments in natural resource management transfer mechanisms, LDI began by organizing several sub-regional workshops and local training sessions to reinforce their technical capacity.

The next step was to actually get out into the field and begin to collaboratively accomplish some of the goals and objectives set forth in the annual work plan. The first collaborative action, defined in the annual work plan, was to deal with an illegal village installation in the Zahamena National Park. LDI field agents, MEF foresters and ANGAP park guards collectively met with the community in question, and after much negotiation arrived at a settlement that was satisfactory to all stakeholders. This small intervention, which allowed MEF to actually get into the field and play the role that they are suppose to play, has been an incredibly large step forward for natural resource management and conservation in the region.

### **Increased Kolo Harena membership leads to the first signs of farmer empowerment**

During this year over 3,800 Kolo Harena farmers (121 *Kolo Harena* farmer associations, 8 partnership associations, 4 water user associations and 3 Comités de Base - COBA) benefited from access to improved, sustainable agricultural intensification techniques designed to help farmers diversify and intensify their farming systems. This number represents a 240% increase in coverage of the LDI Moramanga region when compared to last year’s number.

This significant increase is due to the creation of new *Kolo Harena* associations in the recently opened strategic zones of intervention (Brickaville/Vatomandry and Fenerive-Est) and a considerable effort on the part of existing *Kolo Harena* Federations in Antanandava and Ambatovy to share the *Kolo Harena* experience with other farmers in their areas. Kolo Harena farmers are beginning to understand the value of a landscape approach and the necessity of grouping themselves into associations to better be able to negotiate contracts and effectively protect their traditional natural resource base. Kolo Harena Federation members from both of these ZSIs have experienced a significant agricultural commodity surplus resulting from intensification activities. Realizing that they lacked proposal writing, business management and negotiation skills to sell the surplus, they asked LDI to put together a special training session to cover these topics. This independent, collective analysis of economic opportunities, obstacles and possible solutions to the obstacles is a major step forward towards sustainable development. It has also been very exciting to watch Kolo Harena farmers come to the conclusion (on their own) that a Farmer-to-Farmer system of extension was the only way to assure continued and wide-scale spread of agricultural intensification and environmental protection techniques. They have committed themselves to defining this system in the context of their Federations, and to this end have already, with the assistance from LDI Moramanga staff selected a “farmer leader” for each associations who will be responsible for sharing the information he/she will receive from attending LDI technical monthly training sessions.

### **Synergies between Cyclone Relief and Regular Intervention Fund activities**

The most noteworthy example of synergies between LDI Regular Intervention fund activities and Cyclone Relief activities occurred in the SZI of Antanandava. The rehabilitation of two perimeters in the SZI, Lovoka and Antsahambary, where hundreds of hectares of rice paddies were either properly irrigated, or completely restored to production after many years of non-use, represented a major investment on behalf of LDI (using **Cyclone Relief funds**) and Kolo Harena farmer associations. In this area 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 (**Regular Intervention funds**). The Kolo Harena farmer federation is participating by helping to rehabilitate and maintain the irrigation system, as well as by adopting the rice intensification, off-season crop and watershed protection techniques necessary to increase the quantity and quality of their agricultural production.

For these two irrigation systems, Madrigal (a local agri-business) has agreed to advance through the mechanism of the farmer managed Agricultural Input Supply Centers 30 Kg/Ha of urea to each *Kolo Harena* farmer. Farmers that participate in this system will then reimburse this loan in kind or cash at harvest time. Madrigal 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.

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.

### **1.3 Performance Compared to Second Year Objectives**

LDI met or exceeded all performance indicators, except for the micro-credit component which did not reach its target. This disappointing result is mainly due to the less than satisfactory performance of our institutional partners who did not take the necessary steps to reach out and provide effective support to targeted farmer associations.

## LDI Principal results during the second year (July 2000 – June 2001)

First year targets: July 1999 to June 2000	First year results July 1999-June 2000	Second year targets July 2000 to June 2001 <sup>1</sup>	July 2000 to June 2001 results
1. 600 households assisted (60 associations of 10 members)	- 144 Kolo Harena associations - 2,275 members	- 280 Kolo Harena associations - 6,000 members	- 442 Kolo Harena associations - 10,223 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 \$56,336 in rural credit. \$20,976 of which are new credit disbursement 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 20% and maximum of 235% augmentation of yields and 20% augmentation of 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	- 80 villages are doing community conservation (dina controlling bushfires, forest management, eucalyptus afforestation,...) - 310 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	- 5 participatory forest management signed in Mahajanga and Fianarantsoa. Continue to process with 10 other participatory natural resources management (5 in Moramanga, 3 in Fianarantsoa and 2 in Mahajanga)
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 16 themes are implemented (Journal Kolo Harena, film, slides, papier mache models, training, reforestation, puppet shows, Fanoitsa gazette, fairs, posters and brochures) - Regional communication plan is fully implemented in LDI 3 regions.
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 45 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	- Six 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	- Seven projects have been submitted to the bank for \$1,051,518 investment amount. Of which, \$534,945 from FIEFE - Disburse \$67,692 in FIEFE for Biosave and MonDesir

<sup>1</sup> Targets depend on each regional progress. Details are shown in the regional section.



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	- 681 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	- 442 Kolo Harena with 10,223 members  - 14 federations of Kolo Harena associations are formalized (4 in Mahajanga, 4 in Moramanga and 6 in Fianarantsoa) - 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 80 governmental institutions, NGOs, private businesses and other projects - 10 NGOs and associations (MICET, ADA, AFED, Ankarana Mandroso, ETN, partners and DIREF's agents, Kolo Harena associations, ) are trained by LDI
14. Number of conservation enterprises in key sectors, in LDI region: ecotourism, essential oil and produits biologiques	0		- 24 EFES are involved in ecotourism sectors - 16 EFES involved in essential oils production - 4 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 July 15th 2001.

## 2. Antananarivo Office

The technical and administrative staff in Antananarivo provides important support, facilitating and accelerating the work of regional offices in the field. The regional offices also benefit from agreements with NGOs or other partners, from interregional and intra-project coordination, and from the technical, logistical and material support provided by the staff in Antananarivo in acquiring goods and materials needed for the normal progression of field activities. Our priority is to coordinate communications, thereby ensuring effective support that is consistent with the intentions of the project.

Accomplishments in LDI's four areas of intervention are organized below by activity.

### 2.1 Agricultural Intensification

LDI provided assistance to 442 Kolo Harena with a total of 10,250 members. These Kolo Harena should adopt more efficient and sustainable agricultural techniques to protect their natural resources. Recommendations were tailored to suit each region, the wishes of members, and the needs of the environment. The results of the 2000/2001 campaign have been very encouraging, especially in comparison with the goals originally set in July, 2000. In order to guarantee sustainability after LDI's program ends, the project will focus on making structures more official, and on building Federations' capacities.

Tangible results from the past year are:

- **Kolo Harena Associations** : 442 Kolo Harena associations with 10,250 members receive support from LDI. The original goal of 6000 members was met in December, 2000.

	Targets July 2000 – June 2001	Fianarantsoa		Mahajanga		Moramanga		Situation as of June 2001	
Number of Kolo Harena associations	280	237		69		136		442	
- Kolo Harena LDI regular program		44		62		121		226	
- Other Kolo Harena LDI regular program*		193		8		11		212	
- Kolo Harena AUE CRP						4		4	
Number of members		Men	Women	Men	Women	Men	Women	Men	Women
- Kolo Harena LDI regular program		459	141	733	216	1342	822	2534	1179
- Other Kolo Harena LDI regular program		1660	573	158	18	685	NA	2503	591
- Kolo Harena AUE CRP		2420	NA	-	-	916	80	3336	80
	<b>6000</b>	<b>5253</b>		<b>1125</b>		<b>3845</b>		<b>10,223</b>	
Total									
Number of villages involved in community based natural resource management	45	20		11		11		42	
Number of villages involved in sustainable use of natural resources	200	139		51		120		310	

\* These Kolo Harena are farmer associations supervised by partners subcontracted to LDI, and are financed by funds budgeted under regular activities.

- Increase of agricultural production and farmer revenue : Production has exceeded estimates by at least 20%, as have agricultural revenues. On average, rice yields have increased from 1.06 tons per hectare in 1999 to 3.265 tons in 2001. Maize yields have increased from 0.55 tons/ha to 2.19 tons/ha, potatoes from 1.5 tons/ha to 10.5 tons/ha, beans from 0.46 tons/ha to 0.87 tons/ha. Depending on speculations, results have varied greatly by region.
- Adoption of improved techniques : Improved techniques are been adopted in all regions; 52% of farmers have used improved techniques, and 16% continue to adopt them.
- Rural Credit : 709 beneficiaries have received \$67,326 of credit, of which \$39,412 was in micro-credit and \$27,914 was credit for the purchase of inputs from the agricultural input supply centers. The total amount of grants for the year have exceeded the projected total of \$60,000 for 2000-2001. The following table summarizes rural credit distribution and repayment.

Situation as of June 30, 2001

		1999/2000					2000/2001					Evolution
		Amount	\$	Ben.	Amount Rec.	% Reimb.	Amount	\$	Ben.	Amount Rec.	% Reimb.	
FIA	Credit	14,237,075	2,190	57	14,237,075	100%	101,020,241	15,542	264		non éch	610%
	AISC	8,770,350	1,349	49	8,770,350	14%	82,812,803	12,740	61	82,812,803	62%	844%
MOR	Credit	133,219,040	20,495	193	133,219,040	68%	112,767,900	17,349	234		non éch	-15%
	AISC	47,170,399	7,257	320	47,170,399	57%	91,344,295	14,053	351	19,113,727	33%	94%
MAH	Credit		0				42,391,250	6,522	90	17,327,000	97%	
	AISC	17,882,459	2,751	157	14,692,470	86%	7,283,750	1,121	60	3,512,500	82%	-59%
<b>Total</b>	<b>Credit</b>	<b>147,456,115</b>	<b>22,686</b>	<b>250</b>	<b>147,456,115</b>	<b>71%</b>	<b>256,179,391</b>	<b>39,412</b>	<b>588</b>	<b>17,327,000</b>	<b>97%</b>	<b>74%</b>
	<b>AISC</b>	<b>73,823,208</b>	<b>11,357</b>	<b>206</b>	<b>70,633,219</b>	<b>62%</b>	<b>181,440,848</b>	<b>27,914</b>	<b>121</b>	<b>105,439,030</b>	<b>54%</b>	<b>146%</b>
<b>Grand total</b>		<b>221,279,323</b>	<b>34,043</b>	<b>456</b>	<b>218,089,334</b>	<b>68%</b>	<b>437,620,239</b>	<b>67,326</b>	<b>709</b>	<b>122,766,030</b>	<b>58%</b>	<b>98%</b>

In addition, in Mahajanga, energy credit was distributed amongst 999 beneficiaries for an amount totaling \$14,754. This activity helped to promote the use of gas as fuel instead of charcoal in order to preserve the dry forest of Ankarafantsika.

Several institutional and organizational problems arose in carrying out the micro-credit sector activities.

**a) Micro credit**

- Refusal of financial institutions to cooperate with LDI in providing investments in materials and labor costs for extending markets in the strategic zones;
- Bureaucracy involved in transferring the money between LDI and the partners, which in turn causes delays that often reduce the grant amount, and in the case of missed deadlines, cancel it completely;
- Refusal of financial institutions to cooperate with LDI in staging public information campaigns on the subject of rural credit in the strategic zones; most notably, BTM/BOA and Entreprendre à Madagascar in the corridor east of Fianarantsoa, because they do not consider it to be profitable.
- Confusion over the respective roles of the financial institutions' agents and the LDI field agents, which in turn creates confusion at the Kolo Harena level and impacts negatively on the operation of the credit system and repayment rate.

**b) Agricultural Input Supply Centers**

- Poor management of agricultural input supply centers by partner NGOs with whom LDI is in the process of terminating contracts (SAF/FJKM, GRP and BEST);
- Trainings for members of the Kolo Harena federations to enable them to take over responsibility for the centers have not yielded expected results.

LDI has outlined objectives aimed at revitalizing this sector. At the level of micro-credit, (1) steps will be taken in collaboration with the partners to shorten institutional delays in releasing credit to the lendees, (2) the responsibilities of LDI, partners, Federations, etc. will be more clearly defined so that each individual fully understands his or her role in the micro-credit process.

At the level of the Agricultural Input Supply Centers, a wider range of products will be offered to the Kolo Harena through the input supply centers for two reasons: (1) to further support the Kolo Harena Federations and help them assure the sustainability of the centers after the end of the program; (2) to assure a better correspondence between agricultural inputs that are needed and those that are offered.

## 2.2 Community Management of Natural Resources

LDI chose the "Participative Forest Management" plan as the most feasible method of management transfer.

There were two main difficulties transferring management:

- The procedure for establishing 'communautés de base' at the local level;

- Methods of participative forest management newer than GELOSE.

The method used for transferring management was designed for Fianarantsoa and Mahajanga based on techniques for managing sustainable natural resources.

The annual goal of transferring five forests to community management was met. The Eaux et Forêts service signed participative forest management contracts with five communities.

The first three were signed on December 14, 2000, in Mahajanga. The signing took place within the Anosimijoro forest itself, in the rural commune of Ambalakida. The contract covers:

- One 572 ha lot, with 20 members;
- One 245 ha lot, with 21 members,
- One 922 ha lot, with 21 members; all three lots are now in the next phase;
- The Marosely forest in the Port Bergé area, a 680 ha lot with 45 members; the contract was signed June 28, 2001.

In Fianarantsoa, 1500 ha of forest at Miarinarivo were transferred to community management on June 30, 2001.

Together these contracts have placed 3,919 ha of primary forest in the Fianarantsoa and Mahajanga ZSIs under the management of 907 members.

Ten other contracts are being prepared: three in Fianarantsoa, 2 in Mahajanga, and 5 in Moramanga.



*Now demand is growing rapidly to transfer natural resources management rights and responsibilities from the state to local communities. Festivity during the signature of the contract in Miarinarivo*

### 2.3 Environmental Education and Communication

The most important work the Environmental Education and Communication section (EEC) does in the community is awareness raising. They produced the first *Gazety Kolo Harena*, an important means of communication between the Kolo Harena and the LDI regional offices. It was printed in Malagasy on A4 format newsprint, and is intended to promote communication among the Kolo Harena about sustainable techniques that respect the environment.

Flyers were printed to inform partners and potential beneficiaries about LDI's program of technical support and its results: "The Kolo Harena Association"; "Ecotourism"; "Energy Alternatives to Charcoal"; "Building Production Infrastructure in the Alaotra Lake Region"; "Rehabilitation Activities in the Toamasina Region".

Other media, such as videocassettes, targeted LDI beneficiaries - particularly Kolo Harena - and discussed themes such as SRI and fish farming. LDI Antananarivo continues to publish a trimestrial newsletter distributed to partners, public services, and businesses. Issue no. 6 appeared in June, 2001. LDI has also set up a web site at <http://www.LDI.mg>.

LDI's principal achievements in the Fianarantsoa region are:

- Environmental education about small-scale agricultural intensification, run by 81 young Kolo Harena members with the help of MICET. The environment *fady* DINA is working in 6 communes. Young Kolo Harena have established nature reserves; "Classes Vertes" have been organized in various primary and secondary schools.
- Environmental communication using a variety of tools (puppet shows, film screenings, and educational games). The newspaper *Fanoitsa* received financial aid for the publication of its 12<sup>th</sup> issue, which discussed fish farming.
- Health/environment integration activities with Voahary Salama, an organization promoting health through environmental activities. Field agents were trained in basic family planning and mother and child health.

In Moramanga, MIRAY is helping to apply the Regional Communication Plan (PCR); environmental messages have been broadcast on local radio stations. Animators are being trained for two new village cultural centers (CCV).

LDI celebrated World Women's Day in October, 2000 in Beforona, by offering technical and organizational support to women Kolo Harena members who organized activities. In attendance were the Ambassador from the United States and several Ministers of the Malagasy Government.

LDI helped Kolo Harena organize the *fetin'ny zetra* at Alaotra Lake, and used World Tree Day as an opportunity to plant 9,130 coffee and 936 pygëum saplings at Ambatovy.

In Mahajanga, 1,500 *lambahoany* were distributed to Kolo Harena members who had been active in environmental issues (best reforestation, members of the associations managing the Amboromaika forest). The *lambahoany* sport environmental messages about the destructive effects of slash-and-burn. Messages were also broadcast by radio, and discussed by Kolo Harena 'listening groups' in the Mahajanga ZSI.

As Environmental Education and Communication is a lateral component, its relations to national and regional media encouraged coverage of such events as inaugurations and partnership agreements with State agencies.

## 2.4 Promotion of Conservation Enterprise (EFE) and FIEFE

- The South African trip which took place in March, 2000, was a great success for LDI's Environmentally-friendly Businesses program. About 20 Malagasy businesses participated. The trip's main goals were 1) to find new markets for Malagasy materials and products; 2) to nurture potential partnerships; and 3) to create closer relations between Malagasy and South African businesses.

The target products were spices, coffee and tea, fresh and dried fruit, grains, dried nuts and beans, essential oils, and oleoresins.

Participants met with counterparts in Johannesburg, Durban, and Cape Town. The trip had a positive effect on long-term thinking among Malagasy participants, who became aware of the need to work together to enter the South African market, and have already made plans based on their South African experience.

- After the first Kolo Harena-conservation enterprise meeting took place in Moramanga, Fianarantsoa and Mahajanga organized similar meetings promoting the commercial sale of Kolo Harena products, in November, 2000, and June, 2001, respectively. In Fianarantsoa, four agreements were signed between farmers and private operations (TIKO, BIOSAVE, and SOTRAMEX) for the supply of fruit and essential oils. In Mahajanga, purchase orders for rice (Nouraly), corn and peanuts (PRO-BO), and fruit (EXOFRUIMAD) were even finalized. In total, 1913 farmers are engaged in commercial relations with the EFE to sell agricultural products like rice, fruits and vegetables, or export products like coffee, essential oil, ginger, cinnamon and grains. FIEFE was launched this year with the goal of making banking accessible to EFE. FIEFE was able to refinance two small loans to essential oil projects.

### 2.4.1 Support for Environment-friendly Businesses

The program received 12 new requests for EFE support. The number of EFE projects supported by LDI is now 70, among which are:

- Feasibility studies (23)
- A business trip to promote sales (South Africa)

**Gazety Kolo Harena**  
Seraseran'ny Kolo Harena manerana ny nosy

Kolo Harena: Fikambanan'ny Tantsaha manaraka ny teknikam-pambolena nohatsaraina sy mikajy ny Tontolo Iainana  
Kolo Harena: Association des Paysans qui pratiquent des techniques agricoles performantes et protègent l'environnement

Laharana : - Volana : Jolay 2001 Vidy : Ariary Zato na 500 fmg

**Teny fanolorana**  
Antim-pifaliana tokoa no anolotana etoana ny laharana 1 amin'ity Gazety ity ho antsika Kolo Harena tsy an-kanavaka.  
Araka ny vialaza eo amin'ny lohateny dia natao hifandraisan'ny samy Kolo Harena izy ity.  
Isika Kolo Harena araka izany no tompon'ity gazety ity.  
Koa alao hery ary, fa fitaovana natao hampandroso sy ampifandray antsika Kolo Harena manerana ny Nosy ity.  
Koa mazotoa mifampizara fa ny fampandrosoana tsy efan'olon-drery.  
Tsarovy mandrakariva fa amin'ity dia :  
Ny fahaizako ambarako  
Ny traikefako zaraiko  
Ny an'ny namako ianarako  
Ny harenako koloiko  
Ny lovako dia ifotorako  
Antenaina fa hitondra soa sy fahalalana ho antsika mpamaky hajaina ity gazety ity koa dia mirary anareo hahazo fahafinaretana eo am-pamokiana ny gazetintsika.  
Nitsoa Ramanana

**HO HITANAO ATO :**

	Pejy
• Teny avy amin'ny Talen'ny LDI.....	2
• Seraseran'ny Kolo Harena.....	3
• Teknika.....	6
• Mahaso sy mahafinaritra.....	7
• Résumé.....	8

**FANTATRAO VE NY KOLO HARENA ?**  
Ny Kolo Harena dia avy amin'ny teny hoe « mikolo ny harena »  
Fikambanan'ny tantsaha miara-miasa amin'ny Programa LDI izy ity.  
Misy fianakaviana 10 ka hatramin'ny 20 ny fikambanana iray izay manana tanjona iraisana sy afaka miara-miasa tsara.  
Nifanaiky tamin'ny dina ny mpikambana ao fa hiady ho amin'ny fiarovana ny tontolo iainana.  
Vonona koa izy ireo hanatanteraka fambolena sy fiompiana manaraka ny teknika nohatsaraina sy mirindra amin'ny fitantanana maharitra ny Tontolo Iainana.  
Araka izany dia mikajy ny Tontolo Iainana ny Kolo harena ary manatsara ny velon-tenan'ny mpikambana ao aminy.  
Raha mila fanazavana fanampiny ianao dia manatona ny fikambanana koloharena nampita taminao ity gazety ity.

**AZA-ADINO!**  
**FIFANINANANA SARY FAMANTARANA NY KOLO HARENA**  
**AHAZOANA LOKA MITENTINA 100.000 ariary ! Jereo Pejy faha-7**

- Research (6)
- Environmental impact studies (3)
- APD irrigation equipment (1)
- Architectural studies for ecolodges (2)
- Market research (12)
- FIEFE financial support (23 requests received)
- Requests for Junior Experts (3)

During this year, six EFE have invested in essential oil networks and fruits and vegetables for a global amount of \$753,793. The breakdown is as follows :

- For Mahajanga	
Exofruimad	USD 153,846
- For Fianarantsoa	
AGROMAN	USD 262,106
Mac et Frères	USD 2,615
Delta informatique	USD 1,538
Total	USD 266,259
- For Moramanga	
Phael Flor	USD 118,073
Les Plantations de Mondésir	USD 215,615
Total	USD 333,688

The next stage will be to consolidate different initiatives according to subject.

Details of all EFE supported by LDI can be found in Annex 2 to volume II of the annual report

#### 2.4.2 Investment Funds for EFE (FIEFE)

In its first year, FIEFE has already opened 15 application dossiers totaling over \$1,000,000. Seven of the requests concern essential oils, and five concern ecotourism.

Seven applications are in the process of being reviewed by the banks, representing an investment of USD 1,051,518 for financing needs on the FIEFE of USD 534,945.

Three applications have been granted by partner banks and at present, \$68,000 has been released for the two first projects:

- Phael Flor, to produce essential cinnamon oils in the Brickaville area. The loan was refinanced for \$28,000.
- Les Plantations de Mondésir, for an essential oil and spice production site in the Fénériver Est area. The loan was refinanced for \$40,000.

The third application was for Nature Lodge, an investment in ecotourism in Antsiranana, and was refinanced at \$86,200 in July 2001.

An expert junior has been assigned to CEM in order to reinforce its capacity to manage the operation of refinancement.



*With Vitogaz company, LDI launched a campaign to promote gas as a friendly, efficient, clean and affordable cooking fuel*

## TABLE OUTLINING FIEFE APPLICATIONS

Name or Organization	Region	Network	Purpose of Investment	Total Cost of Project (kFmg)	Total Money Requested (kFmg)	Partner for Completing the Application	Financial Institution Partner	Application Status
Phael Flor	MOR	HES	Acquisition of production equipment (stills, storage facilities...)	767,474	227,300	Consultants : Sylvain RAMANANARIVO et Andrin'iranto RANDRIAMANA NTENA	BNI-CLM	Refinanced at 181,840 kMGF
Domaine Nature	FIA	ECO	Groundbreaking for the installation, monitoring and supervising the work	245,971	197,145	Jary, Mamokatra	Investco, BNI	Waiting to hear from Investco and BNI-CLM
Mendri	MOR	ECO	Building construction and material acquisition	1,021,509	532,070	Actuel Entreprise	BMOI, BTM-BOA	Application rejected by BMOI; currently being considered by BTM-BOA
Camp Catta	FIA	ECO	Building Construction and equipment acquisition	1,000,000	260,000	Abraham Elison	BNI-CLM, BOA or Investco	Application being considered by BOA
Vatomanga	MOR	IAA	Acquisition of equipment and production materials (irrigation, dryers...)	983,096	523,589	ECR	Investco, BNI-CLM	Application rejected by BNI-CLM and Investco
Biosave	MOR	HES	Acquisition of materials and production equipment, storage facilities	1,306,198	914,339	Fanja Rakotondrainibe	Investco, BTM-BOA	Application being considered by Investco and BOA, revised total cost
Ranomanitra	MOR	HES	Acquisition of equipment and production materials + BRF startup for a new geranium production method	591,433	350,000	Promoteur	FIARO, BOA	Application being considered by BOA et FIARO
Les plantations de mondésir	MOR	HES	Investment in equipment and production materials + BRF startup	1,401,500	325,000	Le promoteur	INVESTCO	Refinanced at 260,000 kMGF
Alasoa Ecotourisme	MOR	ECO	Construction of a restaurant	506,911	342,411	Solofo Randrianavony	BNI-CLM, BTM-BOA	Application finalized at LDI; waiting for documents from the developer
Le dama	MOR	HES, PMED	Investment in equipment and production materials + BRF startup	4,000,000	1,000,000	the developer	Fiaro	Application in the process of being modified
Nature Lodge	DIE	ECO	Finalization of investments in materials and equipment for the eco-lodge.	1,686,663	700,000	the developer	BNI-CLM	Release of 560,000 kFmg from BNI-CLM
Tsara Aromatika	MOR	HES	Expansion of a geranium plantation in the Lake Aloatra region	475,840	210,000	the developer	BTM-BOA	Application being completed; modifications are necessary
Cap du poivrier	MOR	POI	Expansion of a pepper plantation	789,000	612,000	MCS	BTM-BOA	Application being completed
SPIC	MOR	FRU	Establish a litchi processing plant	7,123,440	1,000,000	committee for study selected	not yet determined	Application being completed; total cost being reevaluated
Plant sun International	MOR ?	HES	Regualtions for the acquisition of materials and production equipment	1,000,000	600,000	eventually will be turned over to a consultant	not yet determined	Application not complete due to reaction of the developer
<b>TOTAL (Fmg)</b>				<b>2,899,035</b>	<b>7,793,854</b>			
<b>TOTAL (USD 1 USD=6500 Fmg)</b>				<b>3,522,928</b>	<b>1,199,054</b>			

Projects already or in the process of being negotiated at LDI Projects in the identification phase	POI : Pepper HES : Essential Oil ECO : Eco-tourism	FRU : Fruits BIO : Organic Agriculture PMED : Medicinal Plants
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## 2.5 Partner Capacity Building

LDI works with more than 80 partners (NGOs, Associations, research bureau, and construction companies), whether to give technical assistance, training, or to renovate the rural infrastructure for Kolo Harena. There are 46 partners in Moramanga, 11 in Mahajanga, and 29 in Fianarantsoa.

LDI stresses capacity building for Kolo Harena and LDI's partner organizations.

Regional cooperation workshops took place in Fianarantsoa, Mahajanga and Moramanga. The intention was to instill a greater sense of ownership and responsibility for Kolo Harena among members. The main topic of discussion was "Development and Sustainability for Kolo Harena". More than 130 members of regional Kolo Harena Federations took part. Each region also considered other topics, including how best to promote the Kolo Harena process.

Workshops were organized bringing together Kolo Harena and the private sector in all three LDI regions. The objective was to improve the business negotiation skills of Kolo Harena farmers.

Contracts for sales were signed during this workshop, and LDI is working actively to help Kolo Harena respond to market demands for quantity and quality. In Mahajanga, four purchase orders and 16 agreements were drawn up. In Fianarantsoa, there were three sales agreements, as well as other signs of interest. In Moramanga, Madrigal agreed to buy rice produced by Kolo Harena in the Alaotra Lake area.

LDI has also made Experts Juniors available to help Kolo Harena associations with natural resource management (the producers' association that manages the forest at Amboromaika, the Mahajanga Kolo Harena Federation), supply centers in Mahajanga and Fianarantsoa, and organizational management (CCD Namana, Ankarana Mandroso, and ETN in Antsiranana). Partners such as Easta Iboaka, Entreprenre à Madagascar, SAF/FJKM, as well as actors from the private sector, such as Agroman in Manakara and Phael Flor in Brickaville, also benefit from Experts Juniors advice.



*Kolo Harena Federation and private sector met together to improve negotiation skill of Kolo Harena farmers and have commercial relation*

LDI trained Ankarana Mandroso, ADA in Ambohitra, and AFED in management for ecotourism projects and sales of artisanal products. Members of Eco-Tourisme Nord (ETN) also received training.

## 2.6 LDI Partnership with Other Institutions and Organizations

LDI has developed a productive cooperation with key institutions and organizations that have a significant contribution to the successful implementation of our activities and benefit from our technical assistance:

### 2.6.1 Ministry of Eaux et Forêts (MEF).

We signed in November 2000 a memorandum of understanding with the Ministry of Eaux et Forêts, which sets the general framework for a closer cooperation between LDI and the MEF. It was agreed that the MEF would provide technical support to rural communities and partners assisted by LDI to improve their skills in forest management end exploitation. One major issue targeted through this MOU was the transfer of natural resource management to village associations and communities. LDI committed to pay lodging expenses and per diem to MEF agents working in our ZSI with our staff, partners and members of Kolo Harena associations



### **2.6.2 Ministry of Tourism**

The Ministry of Tourism officially created the "Réserve Foncière Touristique (RFT)" of Isalo in December 2000 on the basis of the master plan developed by LDI. A web site was set up to auction properties for ecolodges that must strictly comply with architectural and environmental norms defined by specialists hired by LDI. Unfortunately, the first round of bids didn't allow any sale of land and the Ministry decided to relaunch the process or to directly deal with interested people. In the meantime, LDI has been requested to start building road infrastructure and small irrigation systems that will enable rural communities in the Isalo area to fully take advantage of new opportunities created by the RFT.

### **2.6.3 Ministry of Transport**

The Ministry of Transport signed in December 2000 a memorandum of understanding with LDI to speed up the "mise en concession" of FCE and took serious measures to improve the management of the southern railroad. Since then, LDI has been constantly working, jointly with the FCER project, to promote the privatization of the management of FCE in order to complete the whole process by December 2002, as foreseen in the strategic agreement between the GOM and the US Government. A major breakthrough was the official announcement by SNCFI of their interest to be part of the "mise en concession" of FCE. SNCFI is the international subsidiary of SNCF, the French railroad company, and could be an excellent partner for local firms willing to invest in FCE.

### **2.6.4 Equipe Permanente de Pilotage du PADR (EPP)**

LDI actively participated in the design of the PSDR, the World Bank Rural Development Support Project, and issued a paper in January 2001 which highlighted some weaknesses of the project and made recommendations that were also useful to the mission. One key recommendation, which was adopted by the Bank, stipulates that access to productive investment grants will be subject to commitment from farmer associations not to engage in practices that harm the environment, especially slash and burn agriculture

### **2.6.5 JSI and Voahary Salama**

Over the past year, LDI and JSI have worked together in Moramanga and Fianarantsoa to develop public health and family planning service programs for remote rural communities in the forest corridor. Through a grant to MICET's health component, rural communities in some of LDI's strategic zones of intervention now have access to public health and family planning services. It is hoped that this integrated approach will relieve demographic pressure on primary ecosystems. LDI field agents attended when JSI trained local Basic Health Center (CSB) animators in family health, and they will work to make basic family planning information more accessible to Kolo Harena members.

### **2.6.6 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 helping SAGE-AGERAS/CMP in its ecoregional planning process, based on the "Document for Strategic Management of the Ranomafana-Pic Corridor at Ivohibe", which, once revised, will serve as CMP's program planning guidelines for government, donors, and local communities.

In Moramanga, LDI support the AGERAS eco-regional planning process continued through a joint venture to produce an economic and natural resource pressure analysis study for the Moramanga eco-region

### **2.6.7 ANGAP**

In Antsiranana, ANGAP helped LDI study the environmental impact of constructing "cases villageoises" to be used by the Ankarana Mandroso association. USAID approved the study in October, 2000.

In Fianarantsoa, ANGAP and LDI have placed a Junior Expert with the Isalo Development Committee for the residents of Ranohira. LDI is also providing, with the ANGAP regional office, technical assistance, logistical support and the production of 5000 brochures and flyers encouraging visitors to respect Isalo's natural beauty during the Eclipse Solaire 2001 period. LDI also helped to organize guides for important sites intended for developing viable ecotourism activities outside the national park in Isalo.

Summary of LDI Partners

Region	Antsiranana	Fianarantsoa	Mahajanga	Moramanga
Activities				
<b>Agricultural intensification</b>		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
<b>Community based natural resource management</b>		CIREF, Cellule GELOSE, CAF, CDC, EASTA, Communes, ONG Soafihiasina, CORANIR, RTM, Groupe d'accompagnement, Cabinet TJTT, Hanta Rabetaliana, Jacquot Randrianasolo, MinE&F	CANFORET, Communes, BEST, PACT, CLB, SOATEG, Cabinet TJTT, MinE&F	CIREF, TOPO, Domaine, Local authorities, DURELL, Cabinet TJTT, MinE&F
<b>Environmental education and communication</b>	WWF MIRAY	MICET, Mass media, artists, editors, producers, FCE, ADIFCE, AGEX PEII, CJPM, Suisse, SOCOFIMA, Vaniala, MYE, AGECE, 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
<b>Conservation enterprises promotion</b>	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
<b>Capacity building</b>		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

In Mahajanga, LDI 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. LDI signed a partnership agreement with ANGAP/Ankarafantsika and renewed an earlier agreement with FENU/PDRAB. A strategic coordination workshop was organized to initiate active collaboration; various groups active in Ankarafantsika attended. In light of the continuous degradation of the region's watersheds by erosion, LDI contributed to the work being done to stabilize the Androtra watershed. Feasibility studies are already underway, and vetiver nurseries have been planted.

In Moramanga, LDI signed a four-party agreement between MEF, the province of Toamasina, ANGAP, and LDI to define a common vision for the protection of the Mantadia-Zahamena corridor and the creation of an annual work plan for the implementation of this vision

### 2.6.8 PACT Madagascar

PACT Madagascar provides support for LDI at two important levels:

- As provided in their contract with Chemonics International, PACT has used a number of techniques to help LDI assess and evaluate the program, including: creating maps for the six month report; interpreting aerial photographs of the ZIE to identify sites that could be used for tourism; writing the manual for *tavy*, bush fire, zetra fire, and charcoal production procedures, and conducting the follow-up.
- The PACT/LOVA partnership led LDI partners in capacity-building training sessions. 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.

At Antsiranana, for example, PACT/LOVA offered partners information for associative management and organization for their work in Ankarana (Ankarana Mandroso), and helped improve marketing capacity at ADA and AFED in Joffreville, specifically for artisanal products and ecotourism. In Mahajanga, PACT/LOVA trained CCEE in environmental education for adults.

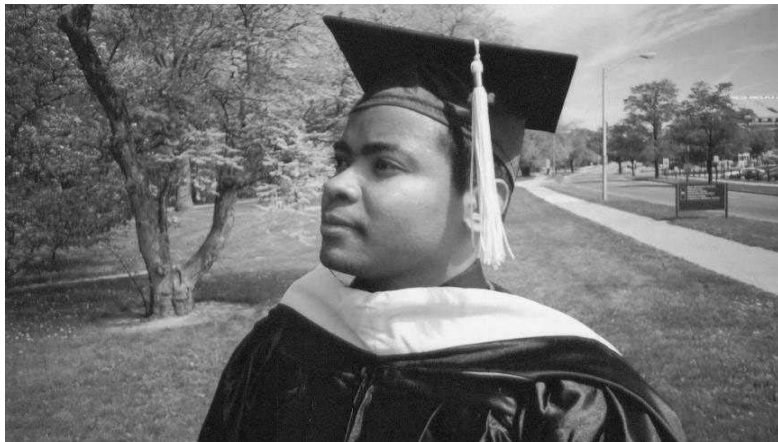
## 2.7 Training and research

### LDI scholarship Program

These are preliminary Results of Academic Training for 7 Madagascar LDI Participants. The sources used included the following:

- direct feedback from evaluations of the participant's scholarship administration
- Academic Enrollment and Term Reports (AETR) forms
- Comments from the advisors of the participants (AETR's)

Back in 1999, seven top individuals in Madagascar were nominated by their organizations to receive a two-year master's degree scholarship in the United States. The candidates went through a rigorous application process and were finally chosen by the USAID selection committee to begin their programs in January 2000. It has not always been an easy process for them but, for those who have worked with them during the two years, it has always been an inspiring process to watch these seven individuals succeed so well in an American academic context.



*Freddie Mahazoasy was the first academic LDI participant to complete his graduate degree*

The seven academic trainees should be viewed as a success story for not only the LDI project but for USAID-funded academic training in general. Most of the participants started their programs with less than the required English language level. Most were required to take additional language training courses and in those ESL courses the first glimpses of the participants' drive, motivation and academic excellence became apparent to the home office staff.

Knowing the stakes at hand, the participants worked tirelessly and determinedly until they all managed to qualify for acceptance into rigorous academic programs, some a bit faster than others.

The LDI students have given proof to the theory that IET staff members have suspected to be true for a long time. Preliminary language testing is not always the best indicator of future academic success when dealing with a highly motivated individual who has been given a chance of a lifetime. In the case of Michele Andrianarisata this was especially apparent.

Michele was the last student approved by USAID and her English language skills were considered to be the weakest of all seven students. Both her TOEFL and GRE scores were below the acceptable level for unconditional acceptance into the graduate program of Forest Resources and Conservation at the University of Florida. Fortunately, the department at the University of Florida took a chance on Michele and agreed to admit her on a conditional basis in January, 2000. The University has never regretted that decision because Michele will graduate with her M.S in Forest Resources and Conservation in August with an overall cumulative GPA of 4.0. Her advisor, Dr. Henry Gholz, wrote on her last AETR form, "*Excellent student. Very conscientious*". Dr. Ghotz stated to an IET staff member that he had not worked with an international student as promising as Michele for a very long time.

**Freddie Mahazoasy** was the first academic LDI participant to complete his graduate degree. Throughout his two years at Michigan State University, Freddie consistently worked hard to succeed and finished his program with an outstanding cumulative GPA of 3.80. In addition to maintaining this high GPA, Freddie was able to do more than many international students studying in the United States. Freddie made it his mission to "*understand America and Americans*". He joined campus clubs and made scores of friends from not only within the international student population but also from the American student population on campus. Before coming to the United States, he was a relatively known musician in Madagascar and through his music he was able to enter another part of the American university culture. He played his Malagasy musical arrangements at parties and campus gatherings and through this outlet he became known and recognized on the campus of Michigan State University. Freddie well understood that his acceptance by American students and professors contributed to not only his academic success but also towards his overall ease, comfort and happiness in America.

Only time will tell what kind of "results of training" the entire academic training program of LDI will have and the contributions these seven individuals will make upon their return to Madagascar. However, based on their outstanding academic work during these last two years, it is certain that they will all play critical roles in the protection of Madagascar's unique and rich natural resources.

### **Students and LDI Staff capacity building**

Students from Cornell University and Malagasy graduate students from the Agronomy School undertook relevant research and activities are carried out at regional research and training centers in Moramanga and Mahajanga regions. Detailed of students report are shown in Annex 4 to volume II of the annual report.

LDI stresses also its local staff capacity building. This year, Eddy Raharison has participated to the workshop which involved the cashew sector in India, Voahangy Rajoharison was in Canada to attend the International Ecotourism workshop, Soloarisoa Ranoromalala and Verosoa Raharivelo attended the agricultural workshop organized by Cornell University in USA, Andry Rasoanaivo has participated to the business study tour in South Africa, Martine Catry and Princia Ratrimo to the Government audit norms – AID obligations in financial audit – training in Antananarivo

Some Freddie's comments include:

- *"The program at MSU had a good mix of theory and practical training and I had a valuable opportunity to work with professors and researchers who discussed the latest developments in my field of study."*
- *"I learned so much about America and Americans that I will always value. I was made to feel very welcome by the American students on campus".*
- *"I have learned so much more than just the technical/academic information while being here. I believe that I will always be an "ambassador" for the U.S. culture in my future positions back in Madagascar over the next 30 years of my profession, wherever that will be".*

Dr. Dennis Propst, Professor in the Park, Recreation and Tourism Resources Department and Freddie's academic advisor wrote his final comment on Freddie's AETR form:

*"He was an outstanding asset to our program here at MSU and we will greatly miss him."*

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## 2.8 Evaluation and Monitoring

In addition to the regular monitoring and evaluation activities, an important initiative was launched this year to assess fire-related pressures in our ZSI. This is a pilot assessment that LDI is carrying out in collaboration with PACT at three sites chosen for their proximity to primary ecosystems within LDI's areas of intervention. LDI working hypotheses are linked to the Mission's results framework, and mainly cover activities that LDI can realistically undertake, given the short life of the program and the limited amount of available resources. Hypotheses at the sub-result level are:

**Agricultural extensification, or the expansion of agricultural lands threatening priority ecosystems, can be limited by:**

- **Agricultural intensification**, which will:
  - Allow farmers to meet their needs with less lands, and thus will reduce the needs for new lands that could encroach on priority ecosystems;
  - Increase household incomes and thus encourage farmers to shift towards sustainable systems;
- **Community-based natural resource management**, which will empower and motivate local communities to protect priority ecosystems from local and outside encroachments;
- **Environmental education**, which will improve the awareness of the importance of natural resources, and motivate people to protect the environment.

Despite technical difficulties gathering data (problems with area photography and the hostile climate), PACT has assessed the extent of primary *tavy* in the target areas, Andohanisoa in Fianarantsoa, Ambalavero in Moramanga, and Belaitra in Mahajanga, using mapping and the data base on each *tavy*. The detailed report will be submitted to USAID during the first semester of the year.

## 2.9 Counterpart Funds

### 2.9.1 Public Investment Program 2000 (PIP 2000)

LDI benefited from two sources of counterpart funding:

- FCV Japan
- FCV USAID

#### FCV Japan

The Government of Japan granted LDI 650 million Fmg for the renovation of the infrastructure at Isalo, following which 350 million Fmg were written into the "loi de Finances 2000" in chapter 4-219-001-B: FCV: JAPON/Etat as part of section 2141: Routes (Roads).

The PLAN Ministry did not write the remaining 300 million Fmg into the "loi de Finances rectificative 2000" as requested; FCV Japan funding for that year was therefore 350 million FMG.

As of June 30, 2001, the Japanese Embassy had not yet approved the use of granted funds (300 million Fmg).

Payment for works funded by FCV Japan stand as follows:

TABLE 1: STATUS OF WORKS FINANCED BY FCV JAPAN IN 2000 AND 2001

Works N°	Goal	Incumbent	Amount (without tax)	Program estimate (DP) n°	DP	Paid
MinENV/LDI/FIA/00/01	Ranohira-piscine and Ranohira-Namaza trail improvement	Entreprise ARR	300.009.450	01	125.479.808	01 March 2001
				02	34.923.149	05 March 2001
MinENV/LDI/FIA/00/02	Ranohira-Ranohira Bas trail improvement	Entreprise DIMBY	267.451.427	01	81.992.095	ok
				02	55.006.208	ok

## FCV USAID

The United States Government conceded counterpart funding worth 500 million Fmg to improve irrigation. This amount was written into the "loi de Finances 2000" in chapter 4–204–001–C FCV: USAID, as part of section 2141: Routes (Roads).

LDI's contract with USAID does not provide funding for road works. In fact, the law should be moved to section 2124: Irrigation Works.

This has been noted and approved by the PLAN Minister.

The following shows the status of works in the Antsahamby Madiorano area of Moramanga.

**TABLE 2: STATUS OF WORKS FINANCED BY FCV USAID 2000**

Works N°	Goal	Incumbent	Amount (without tax)	DP n°	DP	Paid
MinENV/LDI /MOR/00/01	Improvements to the dam at Antsahamby Madiorano	Entreprise EGEORAM	236.087.204	01	218.269.408	Ok
				02	10.785.140	Ok
MinENV/LDI /MOR/00/02	Improvements to the CPRD* at Antsahamby Madiorano	Entreprise GROUPEMA	261.847.969	01	240.637.454	Ok
				02	10.785.140	ok

\* CPRD: Primary Right Bank Canal

### 2.9.2 Public Investment Program 2000 (PIP 2000)

#### FCV Japan

Following a request for more PIP inscriptions in 2000, the "loi de Finances 2001" includes the inscription for using the FCV Japan grant. The program estimate for use of these funds has been presented to the Japanese Embassy and should soon be signed. This will allow the continuation of improvements agreed in 2000 for trails at Isalo.

#### FCV USAID

According to the "loi de Finances 2001", LDI received a 3 billion Fmg inscription, but this was reduced by 650 million Fmg following a technical audit carried out by the "Aménagement du Territoire et de la Ville" Ministry. The program estimate is being revised based on the new funding situation.

### 2.9.3 Value Added Tax

As of December 31, 2000, the payment of VAT and DTI were as follows:

Technical materials:	50.000.000 Fmg
Water, electricity, phone, rent:	2.048.921 Fmg
Goods and services:	130.196.661 Fmg
Transport and travel:	2.800.600 Fmg
Upkeep and repairs:	21.461.429 Fmg
Construction or renovation of roads:	30.074.175 Fmg.
In total,	236,581,786 Fmg.

The file has been submitted to the Treasury.

## 2.10 Intervention Fund

### Organization

After the Financial Controller left in August, 2000, his duties were shared between the Director of Administration and Finance and the Assistant Comptroller. The latter became Intervention Funds Director, overseeing fund management. An Intervention Funds Unit was created in response to the new situation. During the second half of the year, the Unit was restructured in order to accelerate the contracting process and also to improve the Unit's assessment capabilities.

The restructuring added a new member to the Unit, and created the position of Financial Auditor, which increased the Unit's responsibilities.

In practice, the new Unit offers monthly technical support visits to each regional office, and carries out special tasks such as audits, accounting support, and designing and applying procedures.

### Procedures

Most Intervention Fund activities are carried out with subcontracting and purchase orders. Notably, purchase orders do not permit payment except upon delivery of an acceptable product.

While no major changes have been made in procedure, certain measures were taken to assure that partners efficiently executed their subcontracts, and delivered acceptable products.

These measures include:

- Late fees;
- Changes to subcontracts (calendar and product revisions);
- Partial payments in keeping with the consistency of the product;
- The annulment of subcontracts.

Since payment can only take place after product approval, a waiting period has been added to payment schedules.

This waiting period is based not on the date of reception of goods, but on the date of approval. The waiting period has been made a part of subcontracts. This encourages subcontractors to submit consistent goods as of the initial delivery, and also facilitates Intervention Fund financial planning.

Despite these measures, production schedules are not always respected. Subcontracts must be followed up more aggressively.

#### 2.10.1 Contracts and Grant Agreements:

The table below shows the number of new subcontracts and grant agreements signed over the past year.

In all, the regular Fund signed 83 subcontracts and grant agreements. Eleven subcontracts were annulled, 2 for reasons of non-performance by subcontractors, and the rest for budgetary reasons. Four subsidy agreements were annulled. Fifteen contracts were met and fulfilled.

#### Number of Contracts and grants signed and completed July 2000 – June 2001

REGION	CONTRACTS		GRANTS	
	Signed	Completed	Signed	Completed
Moramanga	21	3	1	0
Fianarantsoa	30	10	3	0
Mahajanga	16	2	3	0
Antsiranana/ Antananarivo	8	0	1	0
<b>TOTAL</b>	<b>75</b>	<b>15</b>	<b>8</b>	<b>0</b>

The amount of subcontracts and grant agreements signed during the past year by the Intervention Fund reached \$758,000. The details are as follows:

**Amount of subcontracts and subvention agreements signed  
July 2000 - June 2001**

REGION	CONTRACTS	GRANTS	TOTAL
Moramanga	\$145,319	\$25,000	<b>\$170,319</b>
Fianarantsoa	\$244,521	\$18,000	<b>\$262,521</b>
Mahajanga	\$129,051	\$55,000	<b>\$184,051</b>
Antananarivo/Antsiranana	\$41,944	\$100,000	<b>\$141,944</b>
<b>TOTAL</b>	<b>\$560,835</b>	<b>\$198,000</b>	<b>\$758,835</b>

\$1= 6,500 Fmg

### 2.10.2 Payments

The following table shows payments made during the last year. The reference budget was included in the Work Plan approved by USAID.

Expenses are in order of actual rates at the time of incurrence. Please note that for counterpart fund, payment as such will be made through Banque Centrale de Madagascar, and the figures shown represent signed contracts.

<b>INTERVENTION FUND</b>														
<b>LDI Year 3 : July 00 through June 01</b>														
<b>BUDGET CATEGORIES</b>			<b>ACTIVITIES</b>											
			Agricultural Intensification	Community Mgmt of Nat Resources	Environmental Education	EFE Promotion	Reinforcement of partner capacity	FCE Railroad	Road construction	Other infrastructures	Agricultural Infrastructures	TOTAL	percent of budget expended to date	
<b>REGULAR BUDGET</b>	Technical Assistance	Budgeted	\$170,036	\$26,557	\$52,340	\$80,777	\$98,753	\$26,000				\$454,463		
		Spent	\$184,352	\$36,580	\$56,840	\$97,906	\$203,512	\$28,904				\$608,095	133.81%	
	Credit	Budgeted	\$51,741	\$0	\$0	\$228,923	\$0	\$0				\$280,664		
		Spent	\$53,320	\$0	\$0	\$83,083	\$889	\$0				\$137,292	48.92%	
	Direct Material Support	Budgeted	\$63,305	\$2,600	\$17,150	\$33,699	\$22,419	\$38,000				\$177,173		
		Spent	\$87,495	\$729	\$2,097	\$45,120	\$8,346	\$37,764				\$181,551	102.47%	
	Research	Budgeted	\$44,200	\$4,000	\$2,000	\$2,500	\$5,000	\$0				\$57,700		
		Spent	\$69,930	\$1,203	\$23	\$33,141	\$110	\$0				\$104,406	180.95%	
<b>Total</b>	<b>Budgeted</b>	<b>\$329,282</b>	<b>\$33,157</b>	<b>\$71,490</b>	<b>\$345,899</b>	<b>\$126,172</b>	<b>\$64,000</b>				<b>\$970,000</b>			
	<b>Spent</b>	<b>\$395,096</b>	<b>\$38,512</b>	<b>\$58,960</b>	<b>\$259,251</b>	<b>\$212,857</b>	<b>\$66,668</b>				<b>\$1,031,344</b>	<b>106.32%</b>		
<b>USAID FCV</b>	Technical Assistance	Budgeted												
		Spent									\$0			
	Direct Material Support	Budgeted						\$0	\$207,691	\$146,153	\$73,529			
		Spent									\$73,226			
	<b>Total</b>	<b>Budgeted</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$207,691</b>	<b>\$146,153</b>	<b>\$73,529</b>	<b>\$427,373</b>	
		<b>Spent</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$73,226</b>	<b>\$73,226</b>	17.13%
<b>JAPANESE FCV</b>	Technical Assistance	Budgeted												
		Spent								\$0				
	Direct Material Support	Budgeted							\$95,588					
		Spent							\$68,744	\$0				
	<b>Total</b>	<b>Budgeted</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$95,588</b>	<b>\$0</b>	<b>\$0</b>	<b>\$95,588</b>	
		<b>Spent</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$68,744</b>	<b>\$0</b>	<b>\$0</b>	<b>\$68,744</b>	71.92%

### 2.10.3 Expenditure



**Payout rates:**

For the first installment of cyclone funds, average monthly payments made through Intervention Fund grew from \$65,000 to \$185,000. This grew to \$187,000 after the second installment was made in January, 2001.

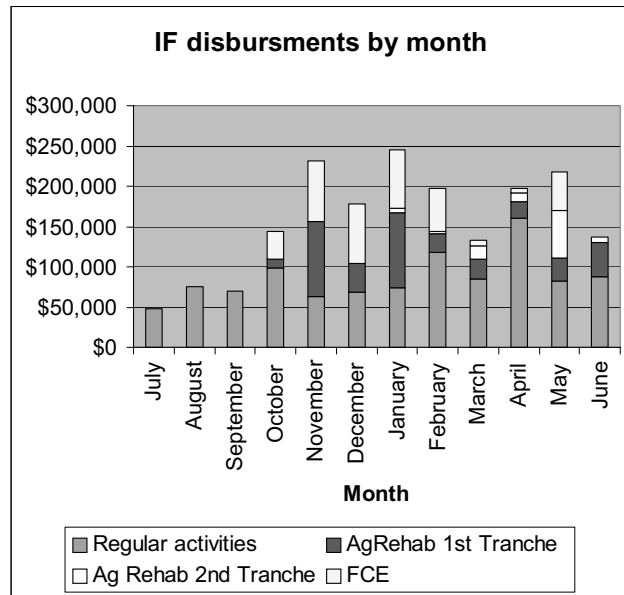
**Expenditure by activity type:**

The division of expenditure by activity type shows continuity with the previous year. Agricultural intensification and partner capacity building are still the activities on which the program spends the most. However, there was increased spending on both community management of natural resources and environmental education.

FCE Railroad spending was used to repair FCE line prior to the receipt in September, 2000, of cyclone funds for that purpose.

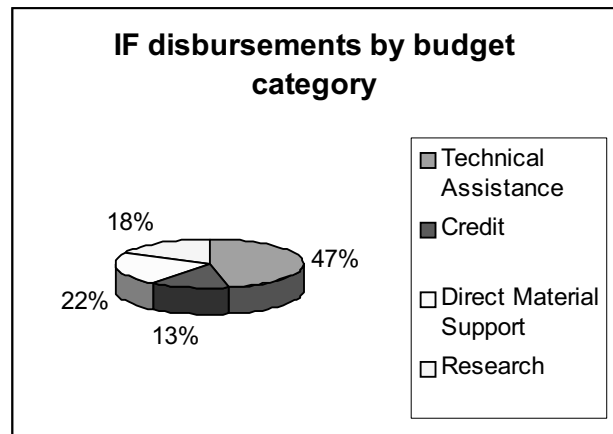
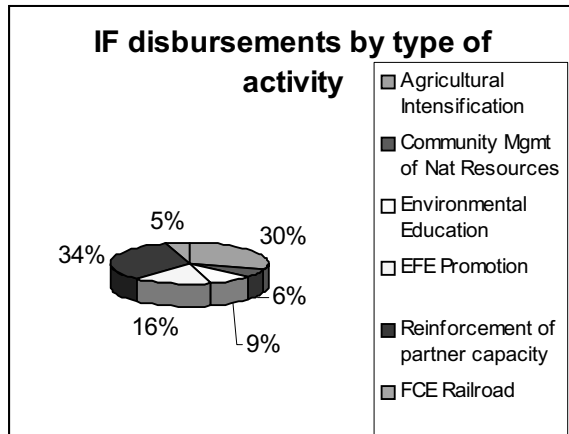
**Expenditure by budgetary category:**

After technical assistance, which represents 47% of all spending, direct material support is the second most used budget line. Please note the increased spending for credit activities.



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**2.11 Administrative support**

To accommodate the contract modification adding Cyclone Recovery Funds to our contract, it was necessary to increase our staff from 127 in July 2000 to 160 in July 2001. Staffing in a few key positions was also modified during the last 12 months. To assure good follow up on these new activities, our Senior Agronomist was appointed Coordinator of Cyclone Recovery activities. We also appointed a staff member as coordinator in Fianarantsoa and Moramanga. To assist our senior agronomist, we hired another agronomist as Agricultural Intensification specialist. Field supervisors and field agents were hired for our 2 new ZSIs in the Moramanga region as well as administrative support staff for our subregional office in Fénériver Est. We also needed increased administrative support in the regions and in Antananarivo. Our logistics Unit has been reinforced and reorganized to face the regions' demand.

We also created a new position by hiring a forester who is in charge of the community-based of natural resource management component and is actively promoting transfers of natural resources management to local communities. We also felt that the "Communication and Environmental Education" component needed to be restructured and we decided to hire a new specialist to fill that position.

Except for one car and the Fianarantsoa radio system, all necessary equipment for the Cyclone Recovery activities was purchased during the first months following contract modifications 5 and 6. A total of 2 cars, 15 motorbikes, 25 mountain bikes, 20 computers, 3 laptops, 5 printers and office furniture was purchased under the Cyclone Recovery Program.

In March, taking advantage of Ousmane N'Diaye's visit (Chemonics Accounting Department), we organized an administrative meeting in Antananarivo with the administrative officers of each region and the accounting unit in Tana. Apart from accounting issues, we reviewed some essential financial regulations and procedures.

Our Administrative unit in Antananarivo assisted newly hired staff on the new Chemonics projects FCE Rehabilitation and ReCAP by giving them temporary office space, logistical support and advice.

### 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 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*

In another hand, one Peace Corps volunteer has been installed in the village to help the local people develop this project as an example of a "Community Based Ecotourism"

- Provided cooperative management trainings for members of the villagers associations in Joffreville (ADA and AFED) to strengthen their capacity to manage their marketing artisanal products and ecotourism projects. 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 had also given technical support to ETN to produce a Tour guide for the region which will be available by End of June.
- 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.
- Eco-Tourisme Nord (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 *authorization 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.
- A community well for Ambatoharanana: a well was installed in Ambatoharanana which is a very important cultural village of the region and is a village relay between Andrafiabe where the tourist lodges has been built and the third entrance of the Ankarana National Park.
- Technical Assistance to rehabilitate the water system in Joffreville: Within the support of investment zones (ZIE), LDI will invest 700 millions Fmg from the counterpart fund to rehabilitate the water supply systems in Joffreville and Ankarana. Related technical studies are undertaken and works will begin by July 01. To prepare the local population and also to put in place a sustainable management of the water system, one socio-organisateur has been hired since April 01.



*The Fontenay Resort*



*A community well in Ambatoharanana*

### 3.2.2 Quantitative Analysis

Yearly objective	Year 2 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 Mid July 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 : <ul style="list-style-type: none"> <li>- 2 for "Ankarana Mandroso;</li> <li>- 1 for "AFED"</li> <li>- 1 for "ADA"</li> <li>- 2 for private tour operators</li> </ul>	
Technical assistance to rehabilitate the water system in Joffreville	<ul style="list-style-type: none"> <li>- 1 socio-organisateur hired;</li> <li>- Technical studies performed</li> </ul>	Works will be expected on July 01.



MONTAGNE D'AMBRE : Joffre-Ville

Activités en cours dans la région

APPUI RÉGIONAL

**Zone d'Investissement Écotouristique**

- Création de la ZIE en périphérie de la Montagne d'Ambre
- Superficie : 66 ha
- Plan d'aménagement déposé au Ministère du Tourisme le 31/05/00 et approuvé le 21/11/00

**Appui aux Entreprises Favorables à l'Environnement**

**MDA Nature lodge** : Construction d'écologes à Antsakoamasina dans le Sud de MDA.

Appui LDI : Etudes architecturales et EIE

**Appui aux Associations villageoises :**

**Association pour le Développement d'Ambohitra (ADA)**

- Date de création : 1994
- Nombre de membres : 15
- Appui LDI : Partenariat avec PACT/LOVA pour le renforcement de capacités des membres de l'ADA

**Association Femmes et Développement (AFED)**

- Date de création : 1996
- Nombre de membres : 30
- Appui LDI : Partenariat avec PACT/LOVA pour le renforcement de capacités des membres de l'AFED - formation en gestion associative

**Associations des Consommateurs d'Eau Potable à Ambohitra (ACEPA)**

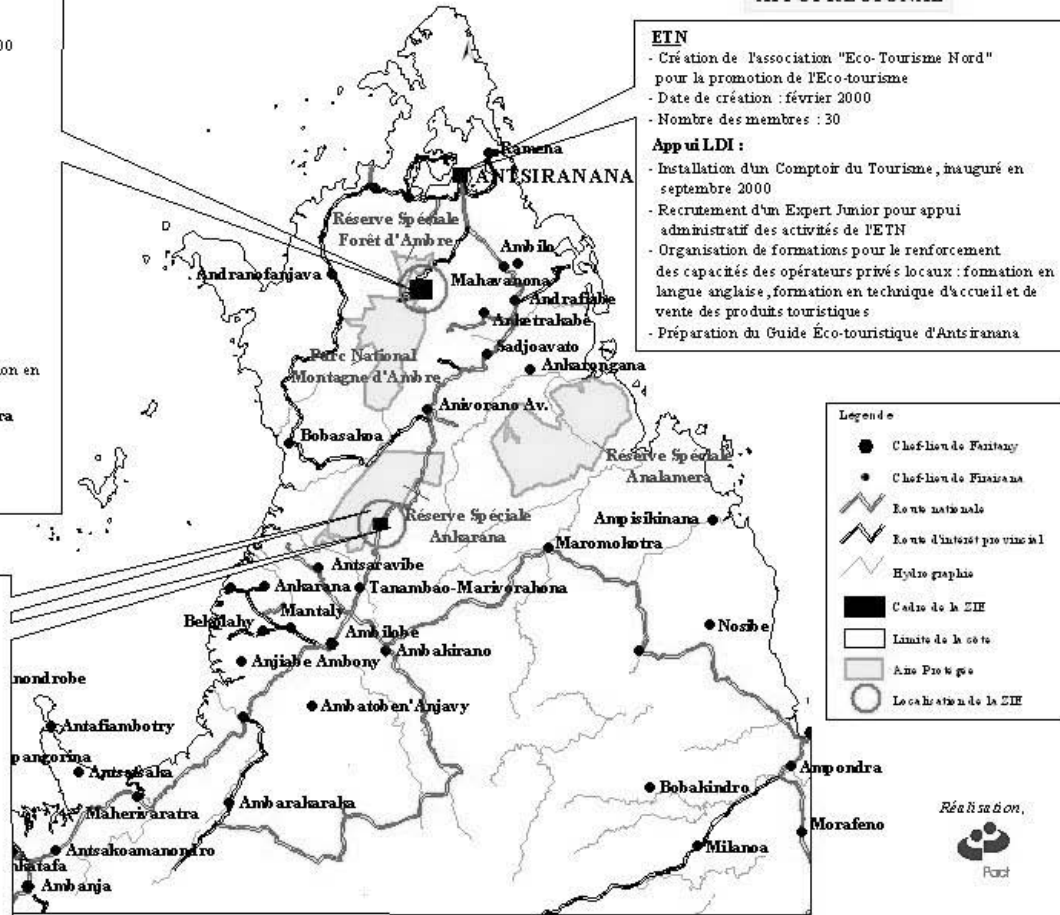
- Date de création : Avril 2000
- Appui LDI : Partenariat avec ANGAP pour la création de l'Association

**ETN**

- Création de l'association "Eco-Tourisme Nord" pour la promotion de l'Eco-tourisme
- Date de création : février 2000
- Nombre des membres : 30

**Appui LDI :**

- Installation d'un Comptoir du Tourisme, inauguré en septembre 2000
- Recrutement d'un Expert Junior pour appui administratif des activités de l'ETN
- Organisation de formations pour le renforcement des capacités des opérateurs privés locaux : formation en langue anglaise, formation en technique d'accueil et de vente des produits touristiques
- Préparation du Guide Éco-touristique d'Antsiranana



ANKARANA

**Zone d'Investissement Écotouristique**

- Création de la ZIE de Mahamasina-est, en périphérie du Parc National de l'Ankarana
- Superficie : 87ha

**Appui à l'Association Ankarana Mandroso : Projet Cases villageoises**

- Construction de 2 cases villageoises
- Mobilisation d'un Socio-Organisateur de PONG LALANA pour la création de l'association;
- \* Partenariat avec l'ANGAP pour la réalisation de l'EIE du projet-EIE approuvée par l'USAID en octobre 2000
- \* Etude de faisabilité technique et financière du projet effectué en novembre 2000
- \* Cases villageoises construites et finalisées en avril 2001
- Partenariat avec PEACE CORPS pour la mobilisation d'un volontaire afin de développer le projet et les projets environnementaux annexes
- Partenariat avec PACT/LOVA pour la formation des membres : formation en gestion associative et en gestion des cases villageoises.

Juin 2001.

Sources : FTM, ANGAP, LDI, MEF



## 4. LDI FIANARANTSOA

### Context

The central mission of the LDI Fianarantsoa program is to reduce human pressures on the Ranomafana – Andringitra forest corridor through ecoregional conservation, agricultural intensification, conservation enterprise, community-based resource management, and capacity building activities. This mission remained unchanged throughout the second full year of the program despite the enormous additional efforts expended in implementing cyclone recovery activities. The wide range of LDI interventions in the Fianarantsoa rural economy were consolidated and in some cases expanded through the additional influx of cyclone relief funds. LDI Fianarantsoa staff were gratified by the rapidly growing interest and commitment to program activities by rural communities – a marked contrast to the previous mistrust and suspicion encountered at the outset of the program. The key challenge for next year – how to meet the demand from rural communities to expand the number of Kolo Harena associations and its associated provision of services.

### 4.1 Main Results

#### 4.1.1 Eco-regional support

The conservation of the intact blocks of tropical low, medium, and high altitude forests in the narrow Ranomafana – Andringitra forest corridor remained throughout the year the central programmatic thrust for ecoregional activities. Over the past year, the LDI staff and its partners have come to appreciate even more the critically important role the forest corridor plays in the hydrological regimes of the region. This deepening understanding of the ecological and economic role of the forest corridor to the future of the Fianarantsoa province is increasingly shared by partners from villagers to regional political and administrative authorities. LDI Fianarantsoa worked consistently with the Comité Multilocal de Planification (CMP) and member institutions to consolidate a vision for the future of the forest corridor. The impacts of these initiatives were expressed throughout the year in forums leading up to the creation of the donor mandated *Plan d'Action pour le Développement Régional*. The advent of the *Province Autonome* and the associated regional planning processes linked to the national poverty reduction strategy drew LDI Fianarantsoa into the PADR, GTDR, PSDR, and other policy-making bodies. LDI invested considerable staff and financial resources to assure the integration of rural voices and private economic interests into the policy and planning discussions. This struggle to insert the environmental discourse into regional and local policy making bodies will continue with vigor in the years to come. The messages emanating from the *Groupe de Travail pour le Développement Rural* (GTDR) were clear - the forest corridor is important to conserve and manage for largely economic reasons. Forums held throughout the year showed a deep commitment from rural leaders, the business sector, and government to conserve the forest corridor intact because fragmentation and loss of forest cover are now better recognized as the key factor that leads to the collapse of a hydrological systems so essential for providing assured supplies of water to irrigated rice culture on both sides of the corridor as well as the urban water supply of Fianarantsoa.



**Fragmentation and loss of forest cover lead to the collapse of hydrological systems**

LDI Fianarantsoa and its partners in the government, non-governmental, and private sector worked well together to articulate more effectively the vision for the conservation of the forest corridor and rural development along its fringes. As a result of the completion of the rapid biological inventory financed in part by LDI but carried out by WWF, MICET/ICTE and ANGAP biologists, preliminary results conclusively show that the Ranomafana – Pic d'Ivobe forest corridor is indeed a biological treasure. The team leader, Dr. Steve Goodman of WWF and the Chicago Field Museum, concludes that genetic similarity exists between species

located at the southern tip at the Pic d'Ivohibe and those of the northern reaches of the Ranomafana national park. This implies that gene flows occur between the northern and southern reaches of this 200-km long portion of the eastern tropical forest ecoregion and that fragmentation of the corridor would lead to species extinction in evolutionary time.

Other regional support activities 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 management of the farm and stimulate production of non-traditional cash crops under the “green” label in collaboration with the Kolo Harena in the coastal Manakara region. Support for AGROMAN and other initiatives to promote the revitalization of the coastal cash crop economy is part of the long-term strategy to reduce migration from the coast towards the last agricultural frontier of the corridor.
- Support to the SAGE-AGERAS/CMP ecoregional planning process through a joint venture by Miray and LDI Fianarantsoa to prepare the “Document d’Orientation Stratégique pour la Gestion du Corridor Ranomafana-Pic d’Ivohibe.” This preliminary “vision” for the future of the corridor will be revised and used by the CMP as a set of program planning guidelines for government, donors, and local communities.
- Regional transportation and port of Manakara rehabilitation study that analyzed from a strategic perspective the costs and benefits of improving various transportation modes.

#### 4.1.2 Agricultural Intensification

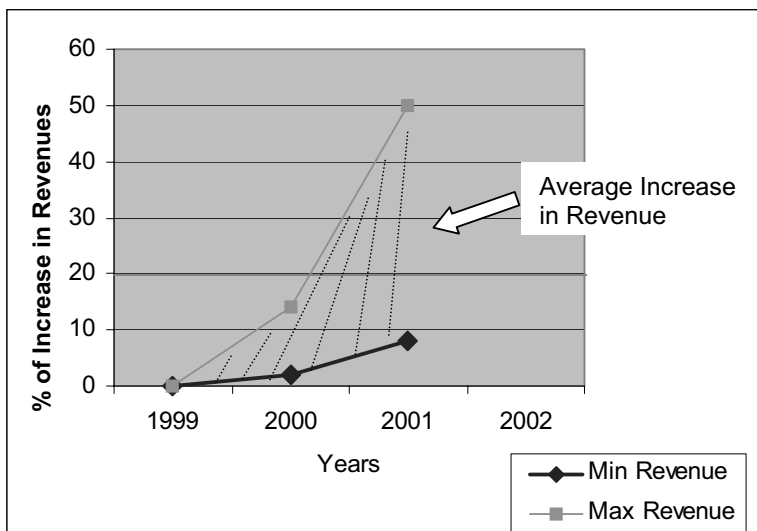
The agricultural intensification component continued to expand dramatically as NGO partners working in LDI strategic zones of intervention found their stride with the Kolo Harena associations. NGOs partners were particularly effective in expanding the adoption of improved food cropping techniques. Faithful to its belief in working closely with the technical services of government ministries (CIRAGRI, *Service de Pêche*, CIREL, FOFIFA ...), LDI Fianarantsoa is currently working with 237 Kolo Harena associations composed of 2,833 members throughout the 3 SZI. In general, this year’s results greatly surpassed those of last year in terms of adoption rates and total area affected by program interventions.

##### a) Intensification in Agricultural Niches

Through the promotion of key technical package like small husbandry and tanety rehabilitation, the agricultural intensification component succeed much better this year in launching the *gestion de terroir* approach. The following statistics portray the performance of the Kolo Harena associations:

- **Rice fields in the low-lands:** 286 ha of rice fields were placed under cultivation using SRA/SRI techniques by 1008 farmers (up to a 39 % adoption rate); 61 ha of land were placed under off-season production by 866 farmers (up to a 32% adoption rate). The production of potatoes is estimated to 400 tons during this campaign.
- **Hillside:** 422 ha of tanety fields were planted with food crops following improved techniques by 1554 farmers (up to a 57% adoption rate); 227 ha of hillside were placed under contour farming by 1019 (a 39% adoption rate); 991 farmers are practicing organic fertilization (a 36% adoption rate)
- **Small animal husbandry :** 488 farmers practice Beekeeping and fish farming (704 hives and 10 ha of fishponds in full operation). 5 farmers in 5 sites were trained in producing fingerlings and sold more than 30 000 fingerlings generating 7.5 million Fmg. Fish production attained 13 metric tons of which 80 % was sold in local markets to generate approximately 100 million Fmg income.

Average yields and income 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).





## b) Material and credit support

This year was marked by the expansion of GCV credit in collaboration with Entreprendre à Madagascar (EAM) and the BOA bank. LDI launched the *faisance-valoir* credit system in all of its sites as a way to support the adoption of new agricultural techniques such as SRI/SRA rice farming and fish farming. The *faisance-valoir* system allocates credit for Kolo Harena members to pay expenses in labor hired for rice farming or for building fishponds.

Thanks to the supplementary funds of the USAID Cyclone Recovery Program, 4 new agricultural supply centers will complete the existing credit and supply system. Via the Expert-junior program, GRP (Group of Rural Promotion) and EAM currently are providing technical assistance for the management of the 6 centers whose functions will be entrusted completely to the Kolo Harena federations in the near future. Despite the great popularity of the agricultural supply centers, those managed by GRP are encountering financial and management difficulties. Services provided by two centers have been unfortunately halted for the time being.

Situation of credits on 30 June 2001

	Credits granted in 1999/2000			Credits granted in 2000/2001		
	Allocated \$	# Beneficiaries	Reimbursement rate	Allocated \$	# Beneficiaries	Reimbursement rate
Community Granary Credit	2,190	57	100%	13,150	241	Not due
Faisance-valoir credit	0	0		2,392	23	Not due
Credit from Input Supply Center	1,349	49	14%	12,740	61	62%
<b>Total</b>	<b>\$ 3,539</b>	<b>106 farmers</b>		<b>\$ 28,282</b>	<b>325 farmers</b>	

- *Agricultural Supply Centers* : Credits were granted to Kolo Harena members for the purchase of seeds, fertilizers and materials for bee keeping. The total sales of the 6 centers has reached 130 million fmg which represents 65% of LDI's \$5,000 subsidy for each center. The federations of Kolo Harena receive 5% of these sales to insure the resupply of inputs for the centers. Kolo Harena are interested in opening new supply centers such as among the Tanala of the eastern side of Ranomafana National Park but this will depend on budget availability next year.
- *Community Granaries Credit* : In spite of the length and complexity of the credit transfer procedures associated with the GCV (*Grenier Communautaire Villageois*), 67 GCV were able to generate credit equivalent to 142 tons of paddy rice. The system will allow member families to alleviate their hunger period and to insure a better price for staple goods. The credit from the GCV were used to buy off-season potato seeds, fertilizer, and small tools. The total credit reimbursement rate reached 100% thanks to the investment of the funds in lucrative activities such as fish farming and off-season crops.
- *Faisance-valoir credit* : In this beginning phase of the *faisance-valoir* credit, 26 million fmg in credit was granted to 23 members of Kolo Harena to help them pay the labor expenses of rice farming, bee-keeping, and fish farming.

### 4.1.3 Community-based Natural Resource Management

The community-based natural resource management program expanded considerably this year despite confronting a wide range of complex institutional hurdles associated with implementing community resource management contracts. LDI Fianarantsoa worked closely with partners like Pact/Miray, the WWF Dette Nature Project, and PAGE to reinforce the capacity of the Eaux et Forêts agents to carry out Forest Management Contracts (GCF). As forest agents and local communities were not familiar with procedures to transfer management responsibilities to local institutions like the COBA (Communauté de Base), considerable resources were invested in training actors in the new legal mechanisms. These training programs reduced considerably suspicions and confusions among local community leaders as well as forestry service agents, about each party's responsibilities. Now demand is growing rapidly to transfer management rights and responsibilities from the state to local communities.

The results at the end of this second year are the following:

- LDI staff and partner organizations participated in training and workshops on Forest Management Contracts in Fianarantsoa and at Mantasoa in order to better grasp the procedures and implications of transferring forest management rights and responsibilities to the community.



*There is a growing interest of villagers to see their natural resources managed in a more sensible and transparent manner*

- LDI supported master's degree research of an ESSA Forêt student to set up a community forestry management scheme in the Ikongo site. This thesis served as a baseline study to determine the feasibility of resource transfer among the Tanala ethnic group of the eastern side of the corridor. Currently, the COBA is well organized and the delineation of the community forestry is well underway
- A forest management contract of 1500 hectares was negotiated and signed in Miarinarivo commune. LDI staff worked closely with the forestry service to delineate the forest perimeters, draft a forest management plan, and prepare resource use covenants. A socioeconomic study of the communities engaged in the process was conducted to determine the roles of stakeholders and the interest in the agreement. The management contract applicable to this forest zone was signed by the COBA, the commune and the DIREF forestry service on 30 June, 2001. This successful negotiation has stimulated community demand throughout the length of the corridor for enactment of similar contracts.
- With financial and technical support from LDI, the DIREF organized a village training program in Alatsinainy-lalamarina on forest legislation and the GCF transfer process. Steps are underway to set up a new forest management agreement with the first stage successfully set up of creating a COBA. Next, the US Forestry Service will contribute technical advice on the most efficient way to set up natural forest management plans during a mission in July 2001.
- In the Ambohimahamasina SZI site on the western flank of the corridor, LDI sponsored a participatory baseline ecological study and supported rapid rural appraisal assessments in 5 fokontany around community forests in key watersheds. On the basis of these studies, LDI will continue to work with CCD Namana, SAGE-AGERAS/CMP, Rainforest Foundation and the other partners to involve the local community in the process of contractual management of the forests.
- LDI continued to finance the work of an "expert junior" seconded to EASTA Iboaka to set up a community management scheme for the eucalyptus plantations found in the commune of Ambohimahamasina. Training programs were held with the community to demonstrate improved techniques of sustainable wood harvesting and charcoal production.

#### **4.1.4 Promotion of Conservation Enterprises and FIEFE**

The conservation enterprise component continued to expand on many fronts. This program provides the support to the agricultural intensification component by developing market linkages for the surplus product that is starting to be produced by the Kolo Harena members. But at the same time it expanded its role in starting up new conservation enterprises in LDI's strategic zones of intervention.

##### **a) Beekeeping and Fish Farming**

The conservation enterprise component set up marketing systems for surplus agricultural products like potatoes, garlic, beans, and fingerlings. Soon to be added to these "filières"



*LDI supports strive to promote non-traditional cash crops as a market diversification strategy*

will be honey. With the help of the NGO Haoña Soa and R-Conseil Cabinet, LDI organized a conference that brought together 32 Kolo Harena producers and private operators like fish and foodstuff wholesalers. **Four agreements were signed between Kolo Harena farmers and private operators such as TIKO, BIOSAVE, SOTRAMEX, and CORANIR.** The regional workshop introduced the Kolo Harena to the market demand for high-quality agricultural products at competitive prices. The conference led to the preparation of several draft producer-buyer contracts. The first tangible result occurred when Kolo Harena of Sendrisoa delivered 1000 fingerlings to CORANIR's new fish production center.

## b) Essential Oils and other products

Growth of production of non-traditional export cash crops in the Fianarantsoa region has been hampered by difficulties confronted by economic operators in penetrating new markets. In response to the uncertainties surrounding overseas market development, LDI organized a business trip to South Africa for ten businessmen specializing in spices, essential oils, coffee, pepper, clove, tea, litchis, and aloe. These business people represented production and market capacity in the region; four of them are important produce collectors coming from Fianarantsoa region (AGROMAN, SOGEP, MG Frères, SIDEXAM). A turnover rate for each company participating is at least one billion Malagasy francs per year.

Upon returning from the study tour to South Africa, the participants clearly recognized the need to organize themselves to better enter into market relations with South Africa. In order to improve market access, the group banded together to form PRONABIO, a professional association specializing in essential oils. PRONABIO's first contract is for the sale of 4 tons of spices to a South African client.

LDI continues to finance the expert junior working with Mac & Frères to test-plant 1600 young Bulgarian roses destined for the production of essential oil. The roses continue to grow well and it is hoped that the research conducted by the expert junior and ESSA Agro-Management department will lead to large-scale production and extraction of rose oil not only by Mac & Frères but also by neighboring farmers. **The technical assistance provided by the program to boost this filière led to an investment of \$2,615 from Mac & Frères.**



*LDI works with private sector to introduce genetically improved cash crops through a decentralized system of nurseries operated by small farmers.*

The LDI Fianarantsoa program worked closely with CCD Namana to develop a business plan for the Ambalavao silkworm center and it financed training for another group of young women. Despite these contributions, the center encountered technical difficulties because a virus ravaged the silk worms. With the assistance of the SDL consulting firm, it is hoped that the feasibility study will go a long way toward assuring the financial viability of the center.

As in the past years, LDI continues to work closely with the AGROMAN firm situated along the Faraony river near Manakara. LDI is working with the company to improve its production capacities. With the help of two experts junior, AGROMAN is investing **\$262,106** in new farming technology. Their plantation now covers more than 60 hectares of land farming given to non-traditional cash crops like pepper and banana. There is also a 40 m<sup>2</sup> of germination facilities, 500 m<sup>2</sup> of woodlands, 12

grafting facilities, and a 6000 m<sup>2</sup> nursery. The farm has now planted over 40 000 pepper vines, 3 tons of ginger on 6 hectares, and 4000 potted cloves. The farm has gone to considerable lengths to restore the soil by planting 2 000 tree seedlings and 70 m<sup>2</sup> of land has been transformed into a vegetable garden.

## c) Ecotourism

The conservation enterprise component continued to invest staff and financial resources in the development of ecotourism facilities around national parks. The expansion of ecotourism facilities should generate employment and sustainable economic growth while serving as an incentive for local populations to conserve the ecosystems around the parks.

### *Ranomafana National Park*

The Domaine Nature hotel benefited from two technical studies. The first study analyzed the possibility of expanding the size of the enterprise; the second looked at the feasibility of installing a mini hydroelectric power plant to serve the energy needs of the hotel. The studies determined that hotel expansion is not appropriate at this time but that investment of 197 million FMG is merited to develop an autonomous small-scale hydroelectric plant. This second study served as the basis for a loan request which was submitted to the BNI-Crédit Lyonnais bank. Unfortunately, the loan granting process was slowed down by the fact that banks remain skeptical about the viability of ecotourism ventures which are indeed new investment niches in Fianarantsoa.

#### *Andringitra National Park*

LDI has supported two projects in the area around the National Park.

To the west, LDI financed the construction of a hiking trail from the Sahanambo valley to the western entrance at Pic Boby. In Tsaranoro, LDI undertook a feasibility study concerning the possible extension of Camp Catta. The consultant involved used the study as the basis for a 230 million FMG loan application to the BOA bank. The process is slow, however, and camp promoters have grown discouraged; not only were no funds available for the low season, but the application has now been put on stand-by until next November.

After having placed a Junior Expert with the Comité de Pilotage at Namoly to investigate the possibilities for developing ecotourism in the region, LDI continued its support by organizing the 'legalization' of the association through legally required statutes and structures, as well as by helping the Comité de Pilotage gain title to a 20 hectares area intended for ecotourism. Once this land tenure situation is clarified, the intention is to lease out the land to a professional hotel operator.

#### *Isalo National Park*



*LDI helped the Regional Comité Eclipse 2001 to organize guides and set up ecotourism facilities to welcome hundreds of visitors on the 21st June event.*

LDI continued to work with the Ministry of Tourism to establish and consolidate the Isalo ZIE (Zone d'Investissement Ecotouristique). After several LDI-financed studies over the last two years, the ZIE will now cover 3 270 hectares (rather than 7 200, as originally intended). All legal and financial requirements for use of the land have now been completed. LDI will pay to mark the territorial boundaries of the ZIE. This will guarantee the legal status of the land and its future use. This process of establishing land use planning controls has nevertheless been very slow and arduous. Considerable care has been exercised by LDI Fianarantsoa to assure that all stakeholders are aware of the legal processes.

With funds obtained from Japanese FCV (*Fonds de Contre-Valeur*), LDI helped to finance the improvement of 22.3 kilometers of national park roads providing access to four

tourist attractions. The work is now entering its second phase, pending the receipt of further financing. LDI, in cooperation with ANGAP, has seconded an Expert Junior to work with the Isalo Comité de Développement to help this organization promote economic development with communities in the ZIE.

#### *Other Activities*

The LDI Fianarantsoa program continued to work with private ecotourism and hotel operators to expand tourism to the regions wonderful attractions. A contract was signed with Delta Informatique to refine the web site *fianarantsoa.com*. The improved site was posted prior to the June, 2001 eclipse as a way to publicize hotels and tourist attractions. This site will be updated periodically through a small fee levied on participating companies.

LDI extended much appreciated technical assistance to the Environmental Protection committee of the Comité Régional de l' Eclipse Solaire 2001. Along with logistical support and the production of 5000 brochures and flyers encouraging visitors to respect Isalo's natural beauty, LDI also helped to organize guides for important sites intended for developing viable ecotourism activities outside the national park in Isalo.

**d) FCE railway rehabilitation initiatives**

The LDI Fianarantsoa program invested an enormous amount of effort to support the rehabilitation of the FCE railway following the damage occasioned by cyclones Eline and Gloria. This large and complex program received supplemental Congressional cyclone recovery funds of \$500,000 to carry out an emergency program to re-open the railway and stabilize the track before the arrival of the 2000-2001 rainy season. This railway rehabilitation effort is reported in greater detail in other reports.

Suffice to say that LDI Fianarantsoa succeeded in achieving a wide array of results ranging from keeping the line open following the exceptionally heavy rains of January, 2000 to working with the FCE railway and the RNCFM to advance the privatization/concession process. The program launched many innovative ways of working with local communities to protect the length of the railway. Resource management agreements set up by the ADI-FCE railway users association are now leading to the reduction of shifting cultivation along the line – a major cause of the 280 landslides that occurred during the cyclones. Enormous strides were made in improving the management efficiency of the FCE such as setting up computerized financial and payroll accounting systems. All of these initiatives shaped the design of the new FCE Rehabilitation project. In the midst of this cyclone recovery effort, LDI worked with the FCE to help rehabilitate the Michelin train car for ecotourism use. This should spur considerably the growth of ecotourism along the railway.

**4.1.5 Communication and Environmental Education**

Communication and Environmental Education activities fall into three broad categories: environmental education through local agricultural intensification activities carried out by Jeunes Kolo Harena (JKH) in collaboration with MICET; the creation of appropriate tools to communicate LDI's key messages to villagers; and population - environment integration initiative with Voahary Salama.

**a) Environmental education with MICET**

- MICET worked with Kolo Harena to employ indigenous knowledge to conserve natural resources. MICET set up village-to-village information exchanges around such themes as "Crayfish and Forests" and in collaboration with EASTA Iboaka taught a module on "Eucalyptus forest management."
- MICET has inventoried environmental taboos and conducted a census of environmental *dina* within 6 communes along the forest corridor. These *dina* are the foundation for expanding dialogue on ways to use traditional resource management practices to protect and regenerate forest resources.
- The *Jeunes Kolo Harena* (JKH) created 6 nature reserves in the SZI Northern and Central Corridors.
- Environmental education program started at school level included "green classes" and sponsorship of the national Reforestation Day in primary and secondary schools in 4 sites (Tolongoina, Miarinarivo, Sendrisoa, and Alatsinainy-lalamarina). In collaboration with local administrative authorities and parents, students planted 15 600 young eucalyptus, cypress, phyllartron and orange trees in order to regenerate denuded areas and to provide flowering plants for bee keeping.
- MICET worked with 81 Jeunes Kolo Harena to introduce vegetable and off-season agricultural techniques along with techniques to restore tanety crops. The objective of these initiatives was to associate formal environmental education training with practical examples of alternative income generating activities. The young Kolo Harena had adoption rates of 61% - an indication of the dynamism and interest of these youth groups. Average revenues from improved agricultural practices have reached more than 50% of increase.



## b) Environmental communication

The environmental communication program continued to expand with the production of a number of key communication tools transmitting key messages on the type of support given by LDI. 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 videos on fish farming, coffee and SRI at 4 sites
- Design of educational games, sketches in book format, and a talk show recorded on audiocassette, in order to communicate environmental messages in forms and methods adapted to the target groups.
- Editing and distribution of 150 copies of brochures explaining the rural credit system and agricultural supply centers
- LDI provided financial and technical assistance to the Fañina association, which produced the twelfth issue of a farmers' publication, *Fañointsa*. Themes focused on SRI/SRA, and fish farming as a profitable alternative income source that relieves pressure on forest resources.
- A technical study on the possibility of putting in place a rural radio in the Manampatrana area of the eastern part of the Corridor. A radio station may be built with partial contributions from the USAID Cyclone Recovery Fund. This station will allow communities to receive information about impending cyclones but also serve as a medium to spread environmental, agricultural, and public health messages.
- Development of 2 documentaries on the FCE (*Un Train dans la Falaise*) shown to 6 million European viewers and over 800 people in Fianarantsoa. These films have educated the public to the link between the FCE rehabilitation effort and the conservation of the forest corridor. They contribute greatly to generating national and international support for the FCE rehabilitation efforts

## c) The integration of health and the environment.

Over the past year LDI and JSI have worked closely together to develop joint programs to provide public health and family planning services to the remote rural communities of the forest corridor. Through a grant by JSI to MICET's health component, rural communities in some of LDI's strategic zones of intervention are beginning to obtain access to public health and family planning services. The main objective of this program is to integrate strategies for relieving demographic pressures on primary ecosystems. LDI field agents took part in sessions organized by JSI and MICET training local animators for Basic Health Centers (CSB) in family planning techniques. The goal was to ensure that Kolo Harena learn about basic family planning methods. LDI Fianarantsoa hopes that the Voahary Salama network will receive a grant from the Packard foundation to carry out integrated population-environment programs linking potable water, family planning, and child health with agricultural intensification and natural resources management. If a grant is obtained from Packard Foundation, JSI and LDI through the Voahary Salama program will carry out test population-environment initiatives in communities along the eastern side of the forest corridor.

### 4.1.6 Capacity building

LDI Fianarantsoa focused a large part of its capacity building efforts on ways to strengthen the 237 formalized Kolo Harena associations. Six Kolo Harena federations are now functional and are supported by expert-juniors seconded to Entreprendre à Madagascar to assist in the management of 6 agricultural supply centers. The bank accounts of the federations are supplemented by 5% of sales originating in the supply centers. This fund assured the operational charges and the resupply of the centers. LDI's socio-organizers conducted intensive training for the committee members in management and accounting in view of reinforcing the autonomy of existing structures in the long run. In sites like Miarinarivo, the Kolo Harena management committee plans to take in charge of the price prospection task and the resupply operation in the center.

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 current ratio of 1 agent to supervise 100 villagers appears to have reached its limit in terms of quality of service. Due to budget limitations, for the time being LDI Fianarantsoa plans to put into practice a farmer-to-farmer apprenticeship system that requires the continuous reinforcement of the pilot farmers in the first place. The categorization of Kolo Harena according to their level of adoption of the improved techniques has already begun in each site. The LDI and partner agents have focused their supervision efforts on more advanced Kolo Harena members who will, in turn, transfer their knowledge to Kolo Harena spring-off.

The LDI program is particularly concerned about the long-term viability of interventions financed through its partners. In collaboration with EASTA, CIRAGRI, Miray Mahefa and other specialized consultants, LDI finances practical training on such various subjects as small-animal husbandry, integrated pest management, cattle raising, potato and coffee farming. These training programs have been much appreciated by the Kolo Harena and the NGO field partners and they have contributed most directly to the increased yields and revenues obtained at the local level. Even though this capacity building work has taken much time and investment of resources, LDI must gradually direct its interventions towards the transfer of skills to intermediate structures in a context where little direct reinforcement of NGO duties is necessary; the sustainability of activities is essential.

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 thesis concerned:

- Economic viability of railbike operations on the FCE by two ISTE students
- Forest management options in Ikongo-Ambalagoavy with a master's degree student of ESSA Forêt of the University of Antananarivo
- Feasibility study on the marketing of forest products in the western side of the corridor near Tolongoina
- Planting and fertilization tests for *Roses de Bulgarie* with two ESSA Agronomique students of the University of Antananarivo
- Technical study of crayfish production on the high elevations of the western side of the forest

Staff training continued with senior staff participating in international conferences in the United States and Europe. The associate director for agricultural intensification traveled to the United States to attend conferences at Cornell University and at the Society of Agronomy on fallow and rotation systems. The associate director for conservation enterprises attended a conference in Switzerland on market opportunities for organic produce. Field staff profited by numerous on-site training programs in agricultural intensification techniques.

#### **4.1.7 Support for AUP Road User's Associations**

The linkage between the AUP and the Kolo Harena is progressively expanding as hoped for at the outset by LDI. 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. In Sendrisoa, the production and marketing of potatoes and fish is facilitated by the ease with which products can be dispatched to the Ambalavao market. LDI Fianarantsoa continued its contract with NGO Lalana to provide technical and organizational assistance to road user's associations. Several AUP sold vetiver for FCE rehabilitation activities. This supplemental income greatly assisted the AUP in capturing funds for cyclone recovery work on the roads.

Considerable support was offered to the AUP to help them define strategies of response to the cyclones that buffeted the region this year. LDI and ONG Lalana worked extensively with the AUP to assist them to qualify for the Fonds d'Entretien Routier (FER). Funds were received by the majority of the AUP and a preliminary rehabilitation by FER was carried out during the rainy season of 2001. LDI has taken over the rest of the rehabilitation work along the CAP roads and will invest \$75,000 for road rehabilitation activities within the USAID Cyclone Recovery program.

## **4.2 Performance Analysis**

### **4.2.1 Qualitative Analysis**

#### **SZI North Corridor : Ranomafana National Park Buffer Zone**

After two years of testing, off-season agriculture, especially potato production, is an established practice among farmers living next to the Ranomafana National Park. Besides the increased income and greater productivity arising from off-season potato production, farmers are able to make valuable use of fields between two rice culture seasons. In response to rapidly expanding commercial potential, other food crops are also being grown using improved farming techniques.

Continued support by LDI and their partners in the field through follow-up and coordination is necessary, however, if these encouraging results are to be turned to the lasting benefit of forest conservation. In fact, lack of supervision in the field, aggravated by the dispersion of sites, reduces the project's impact, and hinders attempts to relieve pressure on the eastern side of the corridor near the national park. A culture of charity has made it difficult for LDI to introduce participatory technical packages requiring the active cooperation of recipients. Partnership with other NGOs in the same areas of intervention has shown that, although they are often engaged in related work at several levels, little is done in concert with such institutions as ANGAP and ANAE.

Given that there is insufficient farmland to meet the region's fast-growing population, LDI is hoping to undertake activities, such as the introduction of cash crops and small-scale husbandry, which will not require extending farmland. The high altitude zone in Ranomafana could benefit from the market access provided by the opening Ranomafana road. Medium-term perspectives for further developing the program in the area surrounding the park point to the large-scale promotion of ecotourism with greater attention paid to the impact on local communities.



*Potato production is the most adopted improved practice among Kolo Harena farmers because of the high income generated from this activity*

### **SZI Central Corridor: Alatsinainy-lalamarina, Tolongoina, Ikongo and Ambohimahamasina**

Off-season potato production has been rapidly adopted among both Kolo Harena and non-Kolo Harena along the western side of the corridor. While only 200 kg of seed were purchased across the entire zone in 1999, Alatsinainy-lalamarina now alone requires 8 tons. Even the most remote villages, such as Ranomena in Alatsinainy-lalamarina, are eager to start potato production. It is important to stress the role played by the supply centers in seed distribution, particularly by allowing Kolo Harena to purchase seed on credit. This is also a clear demonstration of effective cooperation by the Cyclone Recovery program with LDI's Agricultural Intensification component; seed purchased with Cyclone Recovery funds allowed us to keep pace with ever-growing demand.

The EFE activities in the Central Corridor are starting off with the relaunching of coffee production, ginger, peanuts, soybean, essential oil, fish farming, beekeeping and citrus fruit in Alatsinainy-lalamarina, and silkworm production of Ambohimahamasina. In Betsileo areas, bee keeping and fish farming are now as accepted as any other farm activity. The active role of women in these income-generating activities is far from negligible, notably in silk weaving, the feeding and care of fingerlings, and the maintenance of hives. The issue of marketing agricultural surpluses is now becoming of critical importance to LDI Fianarantsoa. Through a regional workshop bringing Kolo Harena producers together with potential buyers, it is now known that a market exists for surplus products. The challenge is to turn good intentions into contracts for the purchase of potatoes, vegetables, fruit, fish, and other surplus products produced by the Kolo Harena. A newly hired marketing specialist will help to broker these relations in the next year. But the critical problems of reliable and affordable transport remain. The FCE railroad service is increasingly reliable thanks to cyclone recovery funds, but feeder roads remain damaged and in disrepair. For instance, the Ikongo to Ifanadiana RIP 4 is now closed due to collapsed bridges and re-opening must await the fortuitous arrival of the ReCAP road rehabilitation project.

LDI initially met with some resistance when it began its activities in the Tanala area east of the Corridor. Thanks to awareness-raising and technical training provided by agents, LDI's agricultural intensification strategies are starting to pay off. For the first time in their history, the Tanala are growing potatoes in rice fields valorized all year-round. Important behavioral change can be seen in the new professionalism of Tanala farmers, who now see themselves as agriculturists, whereas previously they were essentially harvesters and gatherers. Thanks to efficient work by such NGOs as ATEI and FIFAMANOR, Tanala farmers have been able to test such new techniques as SRI, which proved that while agricultural production can be demanding and labor-intensive, it can also be profitable. Based on this initial success, SRI has become extremely popular among farmers from the east, where the landscape offers little opportunity to extend rice fields. Since cultivable low-land is limited, and the uneven landscape hinders agricultural intensification, LDI has launched other EFE activities such as bee keeping, fish farming, and cash crops other than coffee (e.g.,



clove, ginger, vanilla, and litchis). LDI's greatest hope of success lies in successful partnership with organizations, such as CEP and CIADRM, specialized in non-traditional cash crops.

In future, the program should work towards strengthening cooperation - often insufficient - between LDI, partner organizations, and the forest management project, CAF. The challenge is to transform cooperation and diversification into tangible results for the target population, bearing in mind such external influences as the fluctuating price of coffee or the rapid population growth.

Meanwhile, efforts to target rural credit to Tanala farmers remains frustratingly difficult. LDI's efforts to channel credit through the Bank of Africa and the *Entreprendre à Madagascar* have not yet yielded widespread adoption by farmers because of inefficiencies in delivery of credit and the unwillingness of financial institutions to work in the remote and peripheral parts of the regional economy where LDI works. Yet, those farmers who do use LDI's credit systems reimburse at very high rates and are keen to continue the program.



*The SRI/SRA techniques allows farmers in Ikongo to save some parcels destined to more profitable cash crops*

### **SZI South Corridor: Sendrisoa and Miarinarivo**

Results obtained in this SZI prove what can be done when LDI and efficient NGOs collaborate successfully. Beside bee keeping and fish farming, which have increased here at rates far above those of other sites, tany rehabilitation has also experienced a vast expansion in a short period of time. In Sendrisoa, SRI/SRA rice production goals were greatly exceeded (more than 80 ha). Once again, the affordability and accessibility of seed obtained with Cyclone Recovery funds and distributed through supply centers helped boost adoption rates for improved farming techniques.

It is in production and food security that the effects of this change are most tangible. Tobacco is a good example: while it is more profitable than potatoes, many Kolo Harena are drawn instead to the increased rice yields that result indirectly from the organic residue left in fields by off-season potato farming.

LDI activities have also impacted on land use and management. In Miarinarivo, some farmers started reducing farm sizes when they noted that through improved farming techniques a smaller field could produce the same crop size at similar cost. The extra land could then be used for more lucrative activities such as cash crops. New techniques have thus brought about a change in behavior: farmers are now more systematic about land management.

A rapid rural appraisal evaluation in Miarinarivo has shown that such factors as climatic variables make farming a 'risk venture.' Many factors can undermine program achievements. Failure to deliver credit on time, heavy rains, or locusts can completely undermine program achievements in a very short period of time. When credit arrives late, for example, funds are no longer invested in off-season farming but is rather used to meet daily expenses. People in the 'average' and 'poor' classes fell quickly into debt to agricultural supply centers when damages to crops after heavy rains in January were coupled with late input delivery by the supply centers. Activities funded by agricultural supply centers occurred late in relation to the cultural calendar, and creditors had to suffer the consequences in terms both of production and repayment. Furthermore, in a traditionally subsistence economy it is difficult for off-season crops, bee keeping, or fish farming, to replace traditional crops known to provide short-term food security in times of hardship, however unprofitable and damaging to the soil they may be.

## 4.2.2 Quantitative Analysis

### Description of LDI Fianarantsoa results

LDI Indicators for July 2000 to June 2001	Fianarantsoa Situation in June 2001	Observations
<b>Indicators for Activities</b>		
<b>Agricultural Intensification</b> <ul style="list-style-type: none"> <li>- increase in yields: 20%</li> <li>- increase in revenues: 20%</li> <li>- Credit granted</li> </ul>	<ul style="list-style-type: none"> <li>- 30 to 200% augmentation of yields</li> <li>- 5% to 50% increase of revenues depending on the SZI</li> <li>- Credit granted: \$28,282</li> </ul>	
<b>Environmental Education</b>  Minimum of 20 environmental education/communication activities	8 categories of activities including 16 themes related to <ul style="list-style-type: none"> <li>• films projections,</li> <li>• training for 14 <i>Jeunes Kolo Harena</i>,</li> <li>• reforestation and 6 natural reserves managed by the <i>Jeunes Kolo Harena</i> associations,</li> <li>• puppet shows on the key messages of LDI Fianarantsoa,</li> <li>• the edition and distribution of brochures on the credit system and input supply centers,</li> <li>• the inventory environmental taboos</li> <li>• technical and financial support to the Fañina association for the publishing of <i>Fañoitsa</i> Journal No 12 destined for the farmers.</li> </ul>	Valorization of indigenous knowledge of around such themes as “crayfish farming and forest”, or “the management and regeneration of eucalyptus plantation”.  Focus on topics related to the SRA/SRI techniques and fishculture as alternative to slash-and-burn agriculture.
<b>Conservation Enterprises</b> <ul style="list-style-type: none"> <li>- Number of EFE supported : 10</li> <li>- 2 new EFE investment projects</li> <li>- Total investment of \$50,000 in the EFEs</li> <li>- 100 villagers supported by LDI having commercial relations with the EFEs</li> </ul>	<ul style="list-style-type: none"> <li>- 8 EFE supported</li> <li>- Promotion of Rose de Bulgarie plants and relaunch of the production of non-traditional cash crops. Total investment : \$266,259</li> <li>- 2 EFE (Domaine Nature and Camp Catta) in study and negotiation to be eligible in the FIEFE program will invest about \$ 63,000.</li> <li>- 78 members of Kolo Harena associations</li> </ul>	Domaine Nature, Centrest, Camp Catta, BIOSAVE, Delta Informatique, Mac & Frères, CORANIR, AGROMAN. In collaboration with the AGROMAN farm and the Kolo Harena in the coastal Manakara region, exports of pepper, cloves, ginger, etc. are promoted under the “green” label The fund release from the bank is expected as soon as the hotel companies regularize their administrative and fiscal situation  With the rapid expansion of fish farming and beekeeping activities, an increase of the number of Kolo Harena in relation with the EFEs is expected in September.
<b>Local Capacity Building</b> <ul style="list-style-type: none"> <li>- 165 Kolo Harena associations created</li> <li>- 2 200 household members working with LDI</li> <li>- 2 Federations of Kolo Harena associations legally constituted</li> </ul>	<ul style="list-style-type: none"> <li>- 237 Kolo Harena</li> <li>- 2 833 members</li> <li>- 6 federations formalized</li> </ul>	Objectives surpassed as a result of strong demand by Kolo Harena members

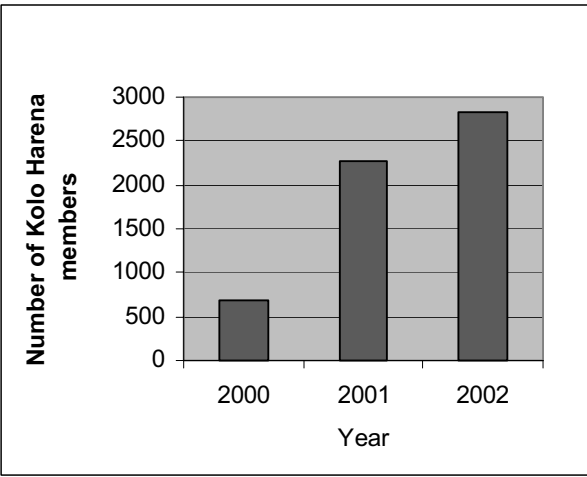
Indicators for Sub-Results		
Reduction of the expansion of agricultural lands within priority ecosystems - follow-up of the human pressure trends in the SZI	1 pilot site in Andohanisoa, Miarinarivo (SZI South corridor)	
Increase of commercial benefits from sustainable use of natural resources - inventory of new EFE projects developed by other EFE in the region	AGROMAN farm relaunched commercial export oriented agricultural production and introduced improved cash crop farming techniques with the intention of purchasing and processing locally coffee and pepper from small farmers	
Reinforcement of Kolo Harena associations to undertake sustainable development - 50% of targeted families have adopted improved practices. - Number of Kolo Harena participating in conservation and development activities	- 57% of Kolo Harena members  - 70% of Kolo Harena members	
Indicators for Intermediate Results		
Sustainable use of natural resource  - Incidence of tavy	Constant increase rate of tavy in the pilot site of Miarinarivo (6%).	According to recent studies in 2 SZI (Southern and Central corridor), the main root causes of tavy evolution in the last five years are the cyclone damages to crops, high inflation rate in 1991 and low yields from traditional agricultural system.

## Analysis of the indicators

### Indicators of Agricultural Intensification Activities

The growing number of Kolo Harena over the two years of the program show that farmers have understood the value of joining forces through associations. The graphic shows the number of associations trained by LDI since 1999, a number that tripled over two years. This increase reflects how rural communities have come to see the benefits of working with LDI field agents and partner organizations. Some of the suspicions and fears of the first year have been largely dissipated.

Fifty percent of all farmers introduced to new agricultural techniques adopt the practices. This high rate of adoption is however not uniform. Dry season agricultural like potato production and vegetables growing continue to be very popular and represent an interest by farmers to generate off-season revenues. Beekeeping and fish cultures in ponds and rice fields continue to grow rapidly with more than 250 farmers now practicing these techniques. High adoption rates occur for SRI/SRA techniques, particularly in the eastern region of the forest corridor where limited low lands give incentives to adoption of rice intensification techniques. Experiments with farmer-to-farmer exchanges demonstrated how rapidly agricultural adoption could occur when farmers see successful examples of new agricultural practices.



One of the factors limiting agricultural adoption is the sheer number of new techniques with which farmers are faced. Labor and on farm time management becomes a problem when a farmer practices traditional farming techniques while also attempting to adopt new techniques with different labor and time requirements. The time frames between the LDI project concerned with meeting results oriented indicators and farmers concerned with reducing risk and guaranteeing livelihoods are sometimes quite different. The program tries therefore to begin with techniques that require little extra work or expenditure, such as 'zero labor' techniques for cash crops and soil improvement.

Difficulties have been encountered on the eastern side of the corridor in setting up rural credit systems. This has impacted rates of adoption for such activities as bee keeping and off-season crops. Few farmers from the area can afford to accept credit, despite the flexible payment scheme and subsidized prices offered by the supply centers. To ensure that micro-credit does not become a tool available only to the wealthiest members of the community, the program must, in the coming year, find a credit system more appropriate to the circumstances of the eastern side of the corridor.

The highly variable spread of revenue increases and yields reflected the different ways in which cyclone damage affected crop production. Most farms using improved agricultural techniques and new crops like potatoes saw a 30% increase in production over traditional harvests. While this led to marketable surpluses, the multiple effects of revenue on the household global budget were not enough to compensate for damage caused by cyclones to traditional annual crops which remain the principal source of income for a large percentage of the target population.

#### CBRNM Indicators

LDI Fianarantsoa invested considerable resources in advancing the CBRNM component through building rapport and trust with the DIREF forestry service and local communities to embark on the transfer of management control from the state to local communities. Two years of awareness raising were repaid when the Miarinarivo *Communauté de Base* (COBA) signed a Forest Management Contract for 1500 hectares. At the same time that this negotiation process was unfolding, two other contracts were undertaken in Alatsinainy-lalamarina and Ikongo. An increasing number of requests for management transfers attests to the growing interest of villagers to see their natural resources managed in a more sensible and transparent manner.



*The commune, the COBA and the Eaux & forêts Department signed the first GCF contract transferring the management of 1500 ha to the local community*

To meet the accelerating demand for firewood and to replenish plantations providing wood for commercial use, reforestation (using local and improved species, including eucalyptus, pine, and citrus trees) was extended to a much larger area than previous years (10 ha). In its next phase, the program will concentrate on repopulating native species. As with any program, the critical issue is not how many trees are planted

each year, but what percentage remains alive after two years. A census needs to be conducted this coming year to determine the longer-term survival rate.

### Communication and Environmental Education Indicators

The environmental communication component expanded considerably during the second year of the program. As confidence grew in the use of a variety of communication tools, the program gradually developed two distinctive orientations – 1) communication of environmental messages and information to actors at various scales ranging from rural communities to the national level, 2) communication of technical information on specific themes ranging from improved agricultural techniques to provision of information on marketing opportunities for Kolo Harena. Experience over the past year shows that this twin thrust brings about complementary policy and programmatic support at the regional and national level for the local agricultural and conservation enterprise activities carried out by the Kolo Harena.

The environmental communication activities launched along the FCE railway corridor yielded enormous benefits to LDI. LDI produced numerous posters, technical pamphlets, tourist brochures, and Power Point presentations for village viewing. New insights were gained on ways to communicate effectively with rural communities. Low cost brochures and pamphlets can be developed by LDI staff to serve the demands from farmers for technical information. Communication tools, however, work best when villagers are interested in promoting a particular program like the preservation of the FCE railway.

### EFE Indicators

The staff invested a large amount of time and financial resources in trying to set up credit arrangements for ecotourism ventures. But despite the good efforts made by all parties, the banking system has not yet provided credit to the Camp Catta, Domaine Nature, and Centrest ecolodge operators. Obstacles exist on many fronts, but one of the more interesting challenges is to convince operators to provide legally required information to government authorities. Economic operators remain skeptical of government intentions to enact fair and efficient tax collection. The failure to provide needed financial data slows down the process of unblocking credit.

The conservation enterprise staff increased this year with the addition of a specialist in rural marketing. This should assist LDI greatly in building linkages between the Kolo Harena sellers of agricultural surpluses and the buyers. Often information lacks on prices, interested buyers, and quality requirements. This additional staff member should help the team understand better the dynamics of the various agricultural sectors served by LDI.

### Capacity-building Indicators

The many participatory initiatives to build the capacity of Kolo Harena associations has begun to change the attitude of rural populations who once left all decision making in the hands of traditional leaders. Women are starting to be involved to a much greater extent in Kolo Harena, particularly in income-generating activities such as small-scale husbandry. With the exception of the Ranomafana area (SZI Northern Corridor), Kolo Harena groups are also leaning slowly towards undertaking management of their supply centers. There has been a successful division of responsibility within the different commissions that make up the management committees. Meetings between different Kolo Harena associations have demonstrated the vital role they play in the farmer-to-farmer training program, an important tool for building the long-term sustainability of the project.

The many partnerships set up by LDI with NGOs to provide services to the Kolo Harena have highlighted technical and organizational weaknesses in these organizations. It is often difficult to keep up with the growing number of Kolo Harena while the NGO staff needs training. Capacity building activities begun by LDI Fianarantsoa concentrated at first on practical training in agricultural and conservation enterprise activities to ensure the technical competence of NGO field agents. It is undeniable that a capacity-building program that is more consistent and coherent with NGO's objectives and LDI's "sustainability" concept can produce effective results in rural development. However, these training programs are expensive and very time consuming.

Activités en cours dans les zones stratégiques d'intervention



**APPUI RÉGIONAL**

**Renforcement de capacités des partenaires :**

- 11 partenaires dans la planification éco-régionale avec SAGE/CMP
- Élaboration de Plan Directeur Forestier Régional
- Réseau d'information régionale
- Inventaire biologique rapide
- Appuis aux G TDR et D SRP

**Écotourisme :**

- Isalo, Raihiko, FCE, Andringitra, Forêt Zafimaniry,
- Site Web Fianarantsoa.com
- Comité Régional de l'Ecluse 2001

**Entreprise Favorable à l'Environnement :**

- Appui aux filières litchi, café, banane, poivre, rose de Bulgarie, Aloès.
- Appui à 9 EFEs
- Nombre d'EFE : 10

**Communication Environnementale :**

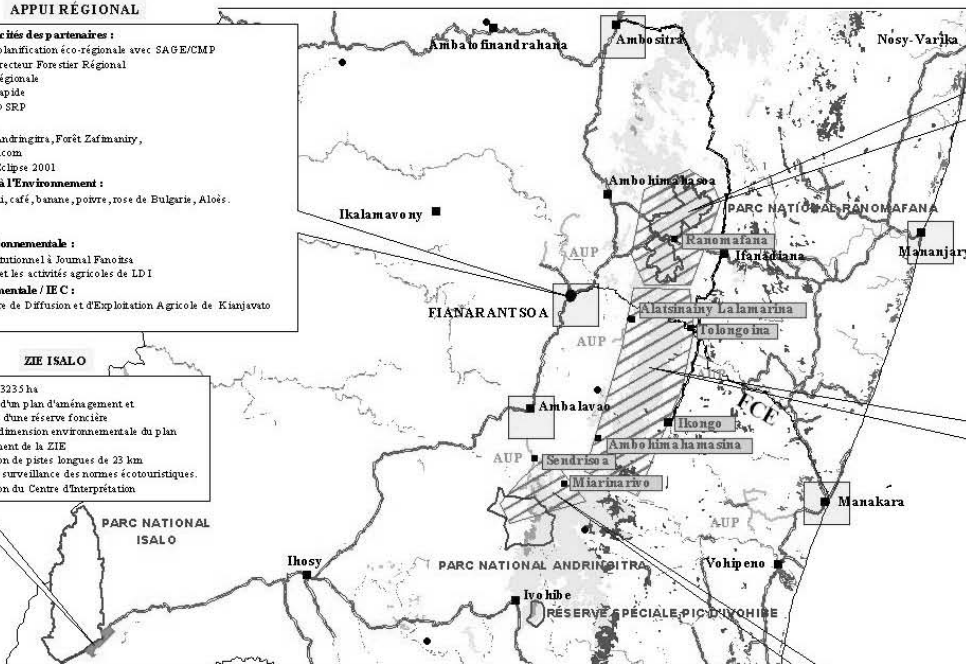
- Appui financier et institutionnel à Journal Panaïria
- Film sur l'écotourisme et les activités agricoles de LDI

**Éducation Environnementale / IEC :**

- Réhabilitation de Centre de Diffusion et d'Exploitation Agricole de Kinjavato
- IEC régional

**ZIE ISALO**

- Superficie : 3235 ha
- Élaboration d'un plan d'aménagement et constitution d'une réserve foncière.
- Étude de la dimension environnementale du plan d'aménagement de la ZIE
- Réhabilitation de pistes longues de 23 km
- Structure de surveillance des normes écotouristiques.
- Réhabilitation du Centre d'interprétation



**ZSI CORRIDOR NORD**

Nombre de villages : 47  
Nombre de Kolo Harena : 100 associations et 1 Fédération Kolo Harena  
Nombre de bénéficiaires : 1248 paysans dont 321 femmes

**Principales activités :**

- **Intensification agricole :** Cultures vivrières (281.35 ha), cultures de contre-saison (39.71 ha), SRI (150.68 ha), maraichage (15.3 ha), compost (538 adoptants), aménagement des tanety (89.21 ha).
- **Centres d'approvisionnement en intrants :** Cré dit de 25 197 000 Fmg et vente au comptant 12 973 740 Fmg, taux de remboursement de 96%
- **Infrastructures de production :** 600 ha à irriguer avec 171 bénéficiaires
- **Éducation environnementale :** 2 Réserves naturelles, inventaire de Fady environnementaux, brochure des centres d'approvisionnement, affichettes et albums sur les Dina, classes vertes
- **EFE :** Écotourisme avec Domaine Nature
- **Renforcement de capacités :** Appuis technique et financier à 5 partenaires

**ZSI CORRIDOR CENTRE**

Nombre de villages : 67 y compris ceux de Manakara  
Nombre de Kolo Harena : 86 associations et 3 Fédérations de Kolo Harena  
Nombre de bénéficiaires : 903 paysans

**Principales activités :**

- **Intensification agricole**  
SRUSRA (22.69 ha), autres cultures vivrières (25.09 ha), cultures de contre-saison (6.08 ha), cultures maraichères (5.36 ha), café (19 pépinières), vétiver (880 m), courbes de niveau (61.29 ha), compost (190 familles)
- **3 centres d'approvisionnement en intrants :** Vente à crédit de 10 920 595 Fmg et traités au comptant 3 372 983 Fmg, taux de remboursement 100%, 19 GCV (120 familles), Faïssance-valoir : 15 915 460 Fmg
- **Infrastructures de Production :** 2 barrages de 140 ha de 132 familles, 2 AUE
- **Éducation environnementale :** 9 Clubs de Jeunes Naturalistes, montage et projection de film (300 personnes, 34 Kolo Harena), théâtre, marionnettes (28 Kolo Harena et 450 personnes), pépinières de reboisement, brochures des centres d'approvisionnement, reboisement de 12 600 plants, projection de film (pisciculture), publication des Fady environnementaux, 4 réserves naturelles, reboisement de 3000 plants, classes vertes, affichettes et albums sur les Dina
- **EFE :** Apiculture (239 ménages), pisciculture (76 ménages), sericiculture (45 femmes)
- **CCRN :** 3 Contrats GCF à finaliser, reboisement communautaire (11 Villages), gestion participative des plantations d'Eucalyptus (3 Villages)
- **Renforcement de capacités :** Appui à 3 fédérations Kolo Harena, CDC, 2 AUE, et 2 COBA

**ZSI CORRIDOR SUD**

Nombre de villages : 25  
Nombre de Kolo Harena : 51 associations, 2 Fédérations Kolo Harena  
Nombre de bénéficiaires : 606 paysans

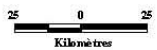
**Principales activités :**

- **Intensification agricole**  
SRUSRA (111.19 ha), autres cultures vivrières (82.80 ha), cultures de contre-saison (8.71 ha), maraichage (2.20 ha), café (27 pépinières), autres cultures de rente (1.25 ha), vétiver (1.6 ha), courbes de niveau (73.26 ha), compost (191 familles)
- **2 centres d'approvisionnement en intrants :** Cré dit de 45 467 538 Fmg, vente au comptant 14 480 746 Fmg, taux de remboursement 29 %, 35 GCV (197 familles)
- **Infrastructures de production :** barrage pour 250 ha de 240 personnes (1 AUE)
- **EFE :** Apiculture (146 ménages), pisciculture (112 ménages)
- **Éducation Environnementale :** Reboisement de 12 600 plants, projection de film (pisciculture)
- **Renforcement de capacités :** 2 Fédérations de Kolo Harena, CD C, 4 partenaires ONG
- **CCRN :** Reboisement de 3000 plants Eucalyptus, suivi du tanety, un contrat GCF signé

**LÉGENDE**

●	Chef-lieu de Fariany	Hydrographie	Écosystèmes prioritaires
■	Chef-lieu de Fivondronana	Limite de fariany	Forêt littorale
■	Chef-lieu de Firaïsona	Aire Protégée	Forêt dense humide de basse altitude
—	Route Nationale	Zone Stratégique d'Intervention	Forêt dense humide de moyenne altitude
—	Route d'Intérêt Provincial	Conservation Entreprise	Forêt dense humide de montagne
—	Association des Usagers de Pistes	Zone d'intervention	Maraîchage
—	Chemin de fer FCE		Plan d'eau

Juin 2001.



Sources : FTM, ANGAP, LDI, MEF

Réalisation : Pact

## RÉGION DE FIANARANTSOA Réhabilitation cyclonique

### RANOMAFANA

**Village concerné :**

- Ambatandrano amont (Ranomafana ouest)
- Ambatandrano aval (Ranomafana est)

**Périmètre à irriguer :**

Surface : 600 ha  
 Nombre de bénéficiaires : 1478, y compris les Kolo Harena (4 terroirs)  
 Entreprise de construction : Entreprise La Précision et Entreprise Hanitra  
 Entreprise de contrôle : CNEAGR  
 Coût de la réhabilitation : 230,8 millions Fmg  
 Date début de construction : novembre 2000  
 Date de réception provisoire : 12 janvier 2000

### AMBOHIMAHAMASINA

**Village concerné :**

- Ampiamaro

**Périmètre à irriguer :**

Surface : 20 ha  
 Nombre de bénéficiaires : 240  
 Entreprise de construction : Entreprise Hanitra  
 Entreprise de contrôle : BE MIKAJY  
 Coût de la réhabilitation : 133,5 millions Fmg  
 Date début de construction : 25 septembre 2000  
 Date de réception provisoire : 11 décembre 2000

### SENDRISSA

**Villages concernés :**

- Amboararibe

**Périmètre à irriguer et correction de lavalas**  
 Surface : 250 ha  
 Nombre de bénéficiaires : 120  
 Entreprise de construction : Entreprise ECGF Rakotozandry  
 Entreprise de contrôle : BE MIKAJY  
 Coût de la réhabilitation : 58 millions Fmg  
 Date début de construction : 25 septembre 2000  
 Date de réception provisoire : 6 décembre 2000

### TOLONGOINA

**Villages concernés :**

- Tsimbahambo
- Malazamasina

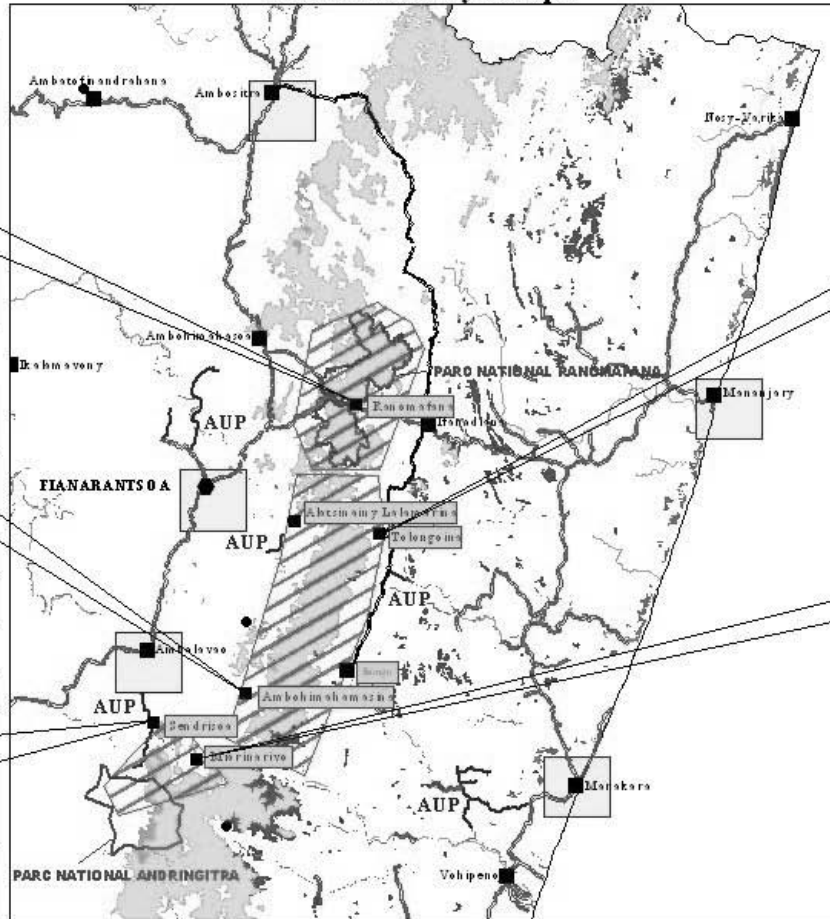
**Périmètre à irriguer :**  
 Surface : 90 ha  
 Nombre de bénéficiaires : 104  
 Entreprise de construction : Entreprise SOSA  
 Entreprise de contrôle : BE GERCO  
 Coût de la réhabilitation : 83,5 millions Fmg  
 Date début de construction : novembre 2000  
 Date de réception provisoire : 10 janvier 2000

### MIARINARIVO

**Villages concernés :**

- Andranavo
- Isaho
- Ampahiranobe
- Andangovato
- Angodogodona

**5 Périmètres à irriguer :**  
 Surface : 490 ha  
 Nombre de bénéficiaires : 175  
 Entreprise de construction : La PRECISION, GRO UPEMA, EGECORAM  
 Entreprise de contrôle : CNEAGR  
 Coût de la réhabilitation : 577 millions Fmg  
 Date début de construction : 6 juin 2000  
 Date de réception provisoire : août 2000



### LEGENDE



Sources : STM, AFIGAP, LDI, M&R



Réalisation :



## 5. Mahajanga Region

### 5.1 Principal Results

#### 5.1.1 Achievements at the regional level

##### Regional plan

LDI continues to collaborate closely with various partners in the region, has participated in a number of regional planning workshops, and helped establish a regional evaluation and follow-up system.

- In the area around Ankarafantsika, LDI signed a partnership agreement with ANGAP/Ankarafantsika and renewed an earlier agreement with FENU/PDRAB. A strategic coordination workshop was organized to initiate active collaboration; various groups active in Ankarafantsika attended. In light of the continuous degradation of the region's watersheds by erosion, LDI contributed to the work being done to stabilize the Androtra watershed. Feasibility studies are already underway, and vetiver nurseries have been planted.
- To support the movement for an autonomous province, LDI participated in a workshop to finish communal questionnaires which will help INSTAT improve its regional per-household data.
- LDI also helped create a new communal development plan for the Port-Bergé region.
- In keeping with PACT's Poverty Reduction Strategy Document (DSRP), Kolo Harena Federations from the Ankazomborona, Tsararano, and Ankijabe ZSIs participated in a workshop which brought together representatives from various development groups active in the autonomous province of Mahajanga.

##### Regional Communications Plan

As part of the Regional Communications Plan, 3500 lambahoany with the slogan, "Burnt forest means less water and famine" ("forêt brûlé entraîne le tarissement de la source d'eau et la famine") were produced in collaboration with MIRAY. Of these, 140 were offered to the 4 Kolo Harena from Anosimijoro and Marosely at the management transfer ceremony for the Anosimijoro and Marosely forests.

A six-month test contract for the production and diffusion of radio broadcasts was signed with M3TV. Five radio stations in the region broadcast four programs twenty times. Groups of listeners were engaged to measure the impact of the broadcasts.

##### Support for UAUPs

This program, supporting the NGO Lalana, ended in December. Principal results from the period of LDI involvement are as follows:

- Support and follow-up in AUP administration and accounting for office staff, and help estimating maintenance costs.
- Support to UAUP managerial staff and directors in the creation and management of maintenance cases underwritten by the FER (Fonds d'entretien routier).
- Follow-up maintenance (terracing, [profilage], repairs and improvements of roadways, cleaning drains, etc.), for which UAUPs paid 10% of FER financing.  
Cost of works and audits: Bealanana = 100 Million; Bekobay = 60 Million; Marovoay = 40 Million.
- Follow-up of water barriers to protect roads during the rainy season.

The program's two main approaches at the regional level are shown in the following table:



<p><b>Agricultural intensification</b>  Creation and application of a CDIA improvement plan:  Digging of two wells, renovation of 4 buildings, construction of one hut in the local style, construction of a compost site [étaube fumier], and the planting of a nursery.  <u>Planting rice, corn, peanuts, manioc, hibiscus, cashews, combava, etc., extension</u>  -Peanuts  Harvest and storage  -Hibiscus  Harvest and drying of flowers from the Egyptian variety  Harvest of the X variety  -Rice  Harvest and storage in ricks  Threshing and winnowing underway  -Aloes  Maintenance of nurseries  Preparation of compost and pots for transplanting  - upkeep of firewalls</p>	FOFIFA
<p><b>Community-based Natural Resource Management</b>  Signing of 4 contracts transferring forest management in Anosimijoro and in Marosely Port Bergé  The 3 CLBs continue to apply Improvement and Management plan recommendations through PTA 2001 activities.  Creation of a fourth Basic Local Community (CLB) to oversee management of the remaining Anosimijoro forest.  Official recognition by the faritany of the Kolo Harena Federation that unites the four Anosimijoro forest associations.</p>	CANFORET Mahajanga II
<p><b>Environmental Education</b>  Production of 3500 lambahoany and four radio broadcasts.  Local stations (M3TV and RTK), in collaboration with Grand Angle, broadcast 33 television ads raising awareness about the use of gas this month.  With the help of Mahajanga's three radio stations, 150 ads about the advantages of gas were broadcast in the Mahajanga region.  An environmental education assistant was hired.</p>	MIRAY M3TV
<p><b>Entreprises Favorables à l'Environnement</b></p> <ul style="list-style-type: none"> <li>- Fruit  The EXOFRUITMAD juice factory is operational. They have already made sales of pineapple and lemon juice. Exofruitmad also asked FIEFE to extend investment.  The Vonona association has dried 50 kg of ginger for TRANSEXPORT.</li> <li>- Ecotourism  . MIKAJY, an NGO, has filed an improvement plan and financial dossier for the Anjohibe site.  . The Direction du Patrimoine has been contacted concerning plans to explore the grottos.  . Coquereli Loge has requested assistance building an ecotourism complex in the area around Ankarafantsika National Park. A site has been chosen in Andranofasika, and the owner is willing to cede the property. The property now need only be registered.</li> <li>- Raffia  EC Plus have concluded their evaluation of the project and submitted their report.</li> <li>- Credit  The subsidy contract with SAF/FJKM has been broken in light of their financial management problems. EAM provided 12,496,250 Fmg in credit to 29 members of the 3 Amboromaika CLBs.</li> <li>- Energy  The signing of a partnership agreement with VITOGAZ took place on February 13; following which gas went on sale in Mahajanga.  Vitogaz delivered the first 200 gas jets and fata-pera, in the use of which field agents from LDI, EAM and CRS have been trained.  The search for credit to buy fata-pera gas is continuing very successfully. So far 934 credits worth 112,080,000 Fmg have been collected. As AFD did not agree to extend credit to Vitogaz, we are now considering at-cost credit for each fata-pera (316,500 Fmg).</li> <li>- Cashews  Calls were made for tender for an LDI study to examine the advantages and disadvantages of transforming forest cashews into cash crop.  Harson Development answered with a bid, and negotiations are under way.  A call was also made and bids returned for the creation of a business plan for a cashew-processing unit. The plan should be ready by the beginning of June.</li> <li>- Fish  The Malagasy Seafood Company has given no further signs of life, and can be removed from EFE's list.  In terms of our search for fish farming equipment, the placement by BCPA with KH EZAKA MIRAY in Ankijabe has been pushed back to June.</li> <li>- Paka  FITIM SA from Mahajanga will outline a paka distribution program for the ZSIs. The issue should be raised again at the Kolo Harena-Enterprise meeting.</li> </ul>	

<p>- Hibiscus MCS has completed a study of local interest in hibiscus processing. Homeopharma requested assistance for a marketing study and for help processing hibiscus.</p> <p>- Aloe David Fox, a Nouraly partner, visited Mahajanga to evaluate the aloe nursery and to discuss the project, as well as to visit the future plantation, which should be planted in July.</p> <p>- Dry grains There is new interest in developing this aspect of the project. SODEXA is working on a business plan that will form the basis of a funding request to FIEFE.</p>	
<p><b>Local capacity building</b> Help organizing a development strategy workshop for the Ankarafantsika area. Meeting of the "cashew club". Training of cashew club members in agricultural techniques. Regional gathering of Kolo Harena Federations examining the regional impact of the KH, sustainability, and improved quality of life for KH members. Training for representatives from the 5 Federations in business negotiation techniques. Kolo Harena – private sector meeting.</p>	ANGAP

### 5.1.2 Achievements at the ZSI level

#### Agricultural intensification

At the time of writing, certain ZSIs had finished harvesting, while others had barely begun. Cashews have been planted over 123 ha, the largest part of which falls within the Ankazomborona ZSI. For food crops, there are 103.48 ha of rice, of which half is in ZSI Ankijabe; there are also 24.18 ha of manioc; 36.38 ha of peanuts; and 12.72 ha of corn. Kolo Harena in Tsarahasina have already begun harvesting hibiscus. 0.75 ha of hibiscus were planted in 4 ZSIs. 0.2 ha of combava and 02 ha of banana were also planted by Kolo Harena in Ankijabe. In order to fight erosion, Kolo Harena in Tsararano planted 0.16 ha of sugar cane

The dam at Bemilolo, part of the drive for improved agricultural infrastructure, is finished and provisionally verified. Two sites have been chosen for new dams.

Kolo Harena from Ankijabe and Tsararano have submitted rural credit requests in *faisance-valoir*. Kolo Harena Taratra has sold its produce at a 4,047,813 Fmg profit. Kolo Harena in Ankijabe have repaid 98.22% of their 1999-2000 debt to SAF/FJKM; Kolo Harena in Tsararano have repaid 62.06%. Kolo Harena Fanilo in Bemilolo has repaid its 2000-2001 debt in full; Kolo Harena Vonjy in Malaiboka has repaid 76.5%; and Kolo Harena Mitsinjo in Antanamiandra has repaid 82.6%.

EAM gave 40,903,250 Fmg in credit for raising ducks, planting peanuts, rice, and manioc, and the costs of running the Kolo Harena Taratra GCV. The number of beneficiaries has risen from 68 members belonging to 11 Kolo Harena, to 90 members belonging to 17 Kolo Harena.

#### Community-based Natural Resource Management

The contract transferring forest management of the Anosimijoro forest to the three charcoal making association was finalized on December 14, 2000. Transfer of the Marosely forest took place on June 27, 2001. The 4 CLBs are now official recognized by the Mahajanga Faritany.

The CLBs are following the application of the management plan through PTA 2001 activities. Plaques have been made and hung identifying the Ankijabe ZSI raffia farming zone. Borders have been marked at (Andohan'i Belalitra, Andavatsiotra and Tsiandroraha) by the Lovasoa Fanantenana CLB.

#### EFE activities

- The EXOFRUITMAD fruit juice factory is operational. They have already made sales of pineapple and lemon juice.
- The Vonona association dried 50 kg of ginger for TRANSEXPORT.
- David Fox, a Nouraly partner, visited Mahajanga to evaluate the aloe nursery and to discuss the project, as well as to visit the future plantation.  
The search for credit to buy fata-pera gas is continuing very successfully. So far 934 credits worth 112,080,000 Fmg have been collected. As AFD did not agree to extend credit to Vitogaz, we are now considering at-cost credit for each fata-pera (316,500 Fmg).

## **Environmental Education and communication**

Local stations (M3TV and RTK), in collaboration with Grand Angle, broadcast 40 television ads raising awareness about the use of gas this month.

With the help of Mahajanga's three radio stations, 150 ads about the advantages of gas were broadcast in the Mahajanga region.

68 village animators and 43 groups of listeners were in place in the 4 Mahajanga ZSIs for the launch of radio broadcasts to educate Kolo Harena members. Seven screenings followed by discussions on environmental themes were held in seven villages. In total, 107 members of 13 Kolo Harena took part, as well as 204 non-Kolo adults and 56 children. Attempts were made to collaborate with local radio stations. Recordings were abandoned because equipment could not be found in Mahajanga; another attempt will be made in August.

Eighteen schools from all four ZSIs took part in a reforestation campaign that covered 15.39 ha of school land with cashews. School FRAMs are overseeing the management and up-keep of these parcels.

## **Local capacity building**

2 Kolo Harena Federations were given socio-organizational support, and subscription recovery follow-up continues.

5 Kolo Harena Federations were created and legalized.

Following the decision to renovate the Ambonara-Ambohimahabibo trail located in the Ankazomborona ZSI, the Federation undertook the renovation of the Ampatika bridge as well as of the most difficult trail. Work began this month. The federation cut and transported trees (banty) which will be used to fix the bridge.

Rural participation is at about 60%, with 150 banty already cut. A regional Kolo Harena meeting and a business negotiation training session for Federation members both took place in Mahajanga.

The table below shows the achievements of each ZSI:

Zone of Intervention (ZSI)	Achievements	Partners
Tsararano - Area: 300 Km2 - Population: 7 810 - Density: 26 hab./km2 - #Villages/hamlets: 60+ - #Fokontany: 7 - Ethnic composition: 15 group, mostly Antaisaka	<i>Agricultural intensification</i> Plantation of 20.77 ha of rice, 4.49 ha of corn, 18.32 ha of peanut, 6.14 ha of manioc and 0.16 ha of hibiscus for the test phase. Realization of 39.72 ha of cashews and 0,16 ha of sugar cane. Realization of 41.2 ares of vegetables. Identification of irrigation source on the Ambatomainty river. Credit Number of beneficiaries: 21 members from 4 Kolo Harena The release of 15,191,000 Fmg by EAM for Kolo Harena Fanilo, Vonjy, Aina, Rindra, Tantely, Ezaka and Taratra [Collecte de 12.26 t de paddy par le Kolo Harena Taratra a déjà, apport des members: 1 549 t de paddy] Repayment of 62.06% of debts, including payment for TOKY machinery. Infrastructure Establishment of a GCV for Kolo Harena Soaniarahana.	EAM
	<i>GCRN</i> Establishment and legalization of the Imitsoanala CLB, which includes 32 families. Creation of texts for the regulation of the CLB. Fixing of boundaries around the Antahialava forest with the help of Canforêt in Marovoay and the placement of natural markers. Inventory and mapping of the site. Communal reforestation: 1.28 ha of eucalyptus.	CANFORET
	<i>Environmental education</i> Education of children and teachers Creation of 13 village animators and 12 groups of listeners 3.19 ha of reforestation for schools	
	<i>Local capacity building</i> Creation of 16 Kolo Harena, of which 13 have achieved legal status, in 13 villages. Creation of the "Tanjona" Federation. Training Kolo Harena in phytosanitation for crops worked in Tsararano.	MAROTIA SINHA
Ankazomborona - Area: 1950 Km2 - Population: 22 731 - Density: 11.6 hab./km2 - #Villages/hamlets: 50+ - #Fokontany: 10 - Ethnic composition: 17 groups, mostly Tsimihety and Bara	<i>Agricultural intensification</i> Plantation of 28.98 ha of rice, 0.62 ha of manioc et 0.82 ha of corn. Realization of 43.50 ha of cashews. Placement of 0.23 ha of lemon, 0.19 ha of combava and 0.08 ha of hibiscus for the test phase. Installation of 500 m of firewall to protect cashews. Credit Debts repaid in full. Infrastructure Two dam sites chosen. Dam feasibility study by ERM.	EAM  ERM
	<i>GCRN</i> Legalization of the wandering zebu dina in 9 villages. Successful placement of the zebu-caused crop deterioration dina in the hands of a follow-up committee. Creation of an inter-community dina on carbonization/logging/clearing/raffia management and bush fires for 9 Kolo Harena Community reforestation: 0.27 ha of eucalyptus.	
	<i>Environmental education</i> Creation of 18 village animators and 9 groups of listeners. 2.27 ha of reforestation for schools.	CCEE
	<i>EFE</i>	
	<i>Local capacity building</i> Creation of 11 Kolo Harena, of which 9 have legal status, in 11 villages. Training of leaders in internal organization and in the responsibilities of elected officials, with practical application. Meeting about the sustainability of the KH and their actions (agricultural intensification, credit...).	
Ankijabe - Area: 600 Km2 - Population: 6 618 - Density: 11 hab./km2 - #Villages/hamlets: 47+ - #Fokontany: 8 - Ethnic composition: 9 groups, mostly Sakalava	<i>Agricultural intensification</i> Plantation of 51.20 ha of rice field with improved varieties and replanted young plants, 6.57 ha of manioc, 0.52 ha of corn and 15.10 ha of peanut. These fields were also [arclées]. 20 .140 m increase in the amount of kizozu planted. Plantation of 21.21 ha cashews. Realization of 0.19 ha of hibiscus, 0.05 ha of lemon, 0.01 ha of combava and 0.20 ha of banana trees for the test phase. Vaccinations of 104 ducks. Credit Number of beneficiaries: 35 members from 7 Kolo Harena. 76.5% of debt repaid. Release of 10,486,000 Fmg to 34 members from 8 Kolo Harena. Infrastructure	EAM

	Dam site chosen.	
	GCRN Community reforestation: 1.50 ha of cashews and 3.14 ha of eucalyptus. Creation of an improved management dina for 24 ha of raffia in 4 village communities. Creation of a committee to fight bush fires. Creation and legalization of the "Lovasoa Fanantenana" CLB. Border creation and inventory of the raffia forest at Belalitra. Creation of management tools (contracts, cahier de charges and dina) in preparation for forest management transfer.	ANGAP  Canforêt
	Environmental education Creation of 23 village animators and 11 groups of listeners. 6.78 ha of reforestation for schools.	CCEE
	EFE Technical training for members of the association Vonona (drying fruit). Creation of a Kolo Harena to keep bees. Management strategy studies for the raffia initiative. Organization of Kolo Harena Ezaka to plant hibiscus (test phase).	ANGAP
	Local capacity building Training FENU agents in agricultural techniques for cashew farming. Training Kolo Harena in agricultural techniques for cashew farming. Creation and legalization of 18 Kolo Harena in 17 villages, of which 13 have legal status. Creation of a Federation of Mahasoa Kolo Harena. Training Kolo Harena in the use of the plow and harrow.	FENU
Tsarahasina - Area: 922 Km2 - Population: 13 165 - Density: 14.3 hab./km2 - #Villages/hamlets: 47 - #Fokontany: 7 - Ethnic composition: 15 groups, mostly Tsimihety	Agricultural intensification Realization of 4.80 ares of parcels of brêdes morelles, tomates, Chinese cabbage and courgette squash per 10 households. Plantation of 2.53 ha of rice, 2.96 ha of peanut, 6.66 ha of corn, 1.85 ha of manioc, 5.53 ha of black eyes, 4.26 ha of lentils and 0.65 ha of beans. Realization of 31.77 ha of cashews. Credit Informational meetings held to discuss rural credit. Number of beneficiaries: 5 members of 1 Kolo Harena (2000-2001 campaign) Infrastructure Maintenance and improvement of the Bemilolo dam.	
	GCRN Creation and legalization of a Marosely CLB. Creation of boundaries and inventory of the forest to be managed. Approval of the communal dina by the district attorney at Port-Bergé. Redynamisation of the bush fire Committee at Bemilolo. Signing of the contract transferring management of the Marosely forest. Communal reforestation: 16.08 ha of eucalyptus	CANFORET MIRAY
	Environmental education Placement of 14 village animators and 11 groups of listeners. 3.15 ha of reforestation for schools.	
	EFE Study on the potential of tilapia in the Tsarahasina region. Study on the promotion of alternate energy sources.	
	Local capacity building Creation of 15 Kolo Harena, all with legal status, which form a Federation with the name Tsarakolo. Training of Kolo Harena members in the potting and planting of cashews. Training of leaders in internal organization and in the responsibilities of elected officials, with practical application.	BEST

## 5.2 Performance analysis

### 5.2.1 Qualitative analysis

Throughout the ZSIs, and even at the regional level, the program continues to promote the cashew as a cash crop, and successfully launched a campaign to promote gas as an alternative to wood charcoal. All of LDI's partners over the last year took a great interest in the cashew campaign (AGEX, NGOs, local authorities, KH, schools, and private individuals). Methods for transforming the cashew from a forest tree to a cash crop were discussed at the "Cashew Clubs", with reference to a study examining ways to accelerate development of the cashew initiative in the area.

In the alternative energy initiative, VITOGAZ accepted the partnership agreement proposed by LDI. CRS undertook an awareness raising campaign, EAM managed credit, and various merchants agreed to sell gas bottles with fata-pera. Since it is working so well, we will continue the credit system into the next semester.

In terms of our socio-organizational support to AUPs, not only did the AUPs maintain vegetable cover on open land and protect against soil erosion, but they also improved bush-fire protection and impeded deforestation along the trail. Vétiver stumps, eucalyptus, acacia mangium, and cashews were planted to protect the 111.5 km of trail renovated by Projet CAP. AUPs in Bekobay will use rain barriers to control illicit logging, including for charcoal, and the UAUP there participated in the design of texts about the Amboromaika forest. The UAUP in Bealanana planted eucalyptus along and around the trail.

After the contract transferring management of the Anosimijoro forest was signed, the 3 CLBs created a new ZSI for LDI Mahajanga, at Ambalakida. A junior expert continues to train associations in the area, and these have formed a Federation.

Across all the ZSIs, supply centers continue to show poor profits, due in good part to the failures of our partner organization SAF/FJKM. It has not been possible to find another organization capable of filling the breach. Because of this, management of supply centers has been transferred to the Kolo Harena Federations.

In terms of individual zones, we can assert the following:

#### ZSI Ankazomborona

Lack of access during the rainy season is a perennial problem in this zone. Despite that, however, this zone has been extremely active in adopting and applying new initiatives, and in working to assure sustainability. Agricultural intensification debts have been repaid in full, and members believe in the value of new agricultural practices and improved crop varieties. New credit is being arranged. More than 80% of KH members have said they are ready to apply new technical kits to their farms. Rice of course remains the most important crop.

#### ZSI Ankijabe

The Ankijabe ZSI is a model of participation and application. They have adopted improved seed, the small-scale use of agricultural equipment, weeding, and improved small-scale husbandry.

Combava, lemon, and hibiscus have the potential to spread well in this zone. There is also a lot of interest in small-scale husbandry.

After the partnership with SAF/FJKM was annulled a credit assistant was hired, which raised credit repayment rates.

Environmental education continued through the intermediate screenings and debates. Women in the Kolo Harena take a very active role in debates.

#### ZSI Tsararano

Debt repayment is still poor in this zone. The 2 KH which benefited from GCVs are, however, very dynamic, and have already begun to sell rice.

Many Kolo Harena members showed an interest in cashew farming, and women have contributed enormously to the spread of vegetable farming.

### ZSI Tsarahasina

As in Ankijabe, many Kolo Harena members showed an interest in the hibiscus test plantation. We have also finally established confidence among the population; several ODAI-created associations asked for help from LDI field agents, and thereafter joined Kolo Harena. Rural credit initiatives have begun.

The rate of participation in agricultural intensification activities has risen from 7 to 24% during the campaign. The main crops are rice, peanut, manioc, corn, and black eyes. Increased production and revenue are significant (see Table), in great part because of the energetic support the Port-Bergé Sub-prefect gave to agents' awareness raising efforts.

The active interest the population showed in the management transfer of the Marosely forest remains our best weapon in the fight against illicit charcoal production.

Local participation is much to thank for the work done on the dam at Bemilolo. The AUE received training in water management and is starting to show greater cohesion.

### 5.2.2 Quantitative analysis

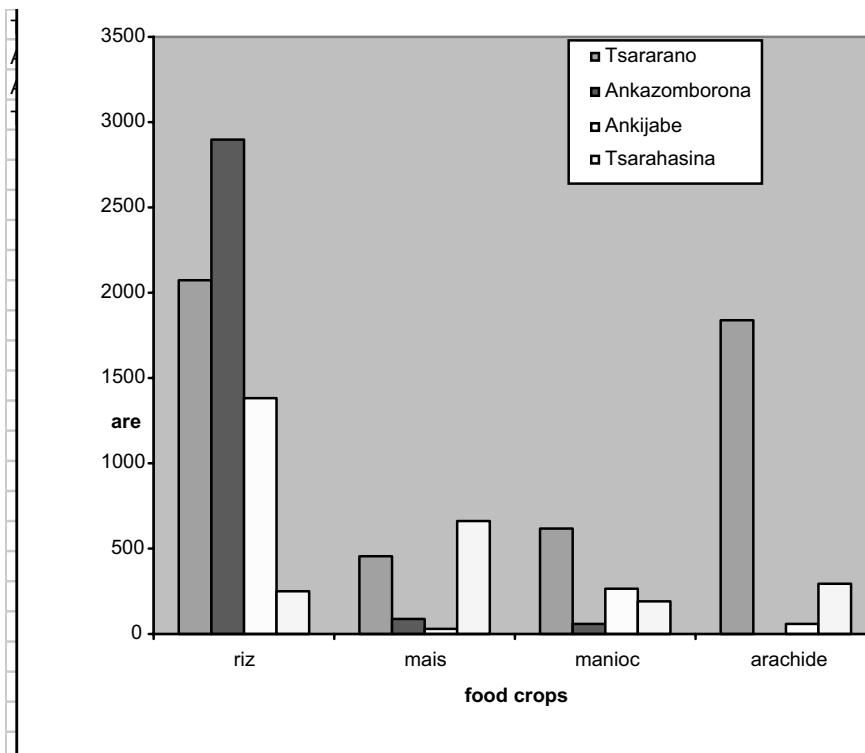
LDI Second Year Targets July 2000 to June 2001	Situation July 2000 – June 2001 in Mahajanga
280 Kolo Harena associations -6,000 member	69 Kolo Harena, organized into 4 federations 1125 members
- 20% of targeted households will adopt improved practices 50% of targeted households use improved practices	ZSI <i>Ankazomborona</i> : 48% families use improved practices ZSI <i>Ankijabe</i> : 66% families use improved practices ZSI <i>Tsararano</i> : 34 % families use improved practices ZSI <i>Tsarahasina</i> : 24% families use improved practices All ZSI : 6,2% families adopt improved practices
Disburse \$ 60,000 in rural credit. \$40.000 of which are new credit disbursement	Disburse \$ 5,476 in rural credit
20% augmentation of yields and revenues	47 % yield increase for peanuts 57 % yield increase for rice 4,2 % yield increase for cassava (harvest not complete) 56 % yield increase for mais 35% yield increase for black eyes  34,5 % increase of income
45 villages doing community conservation, Gelose or GPF 200 villages involved in sustainable use of natural resources management	2 GPF contracts in process for the forests of Antahialava (ZSI <i>Tsararano</i> ), Andohan'i Belalitra (ZSI <i>Ankijabe</i> ) 51 villages involved in sustainable use of natural resources management 51 villages involved in sustainable use of natural resources management
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 and one GPF contract signed for the forest of Marosely. Continue to support the process with 2 other participatory natural resources management
- 27 environmental education activities with communities - Fully implement the LDI and the regional communication plan	LDI and regional communication plan completed 140 lambahoany distribution as prizes for exemplary environmental conservation efforts to 4 Kolo Harena 4 radio programs on environmental protection topics 7 sessions of film projection-and-discussion were held in 7 villages with the participation of 107 members from 13 Koloharena plus 204 non-KH members, and 56 children. 68 village animators were identified and 43 listener groups constituted. 15.39 ha of trees were planted by school children.
10 new EFE supported by LDI. Continue to support and assist 23 conservation enterprises	- One new EFE supported by LDI and continuing 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	ZSI <i>Ankazomborona</i> : 1 federation, 11 Kolo Harena, 9 formalized ZSI <i>Ankijabe</i> : 1 federation, 18 Kolo Harena, 13 formalized ZSI <i>Tsararano</i> : 1 federation, 16 Kolo Harena, 13 formalized ZSI <i>Tsarahasina</i> : 1 federation, 15 Kolo Harena, 9 formalized ZSI <i>Ambalakida</i> : 1 federation, 4 Kolo Harena, 4 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, alternative energy source for cooking.	1 Disbursement of \$ 17,243 in consumer loans for the "Fatapera-gaz" operation.
Incidence of bushfires	Methodology for tavy and bushfires measurement has been developed. Aerial photos. Assessment is in progress.

In terms of **agricultural intensification**, the number of families working with LDI Mahajanga now averages 235 to 282 per ZSI, an improvement of 120% over last year. Each family belongs to one of the 69 Kolo Harena now present in 63 villages.

Kolo Harena in the Tsararano, Ankijabe, and Tsarahasina ZSIs still focus on rice, manioc, and peanut farming, while at Ankazomborona, where there is no jebly season, the main crops are rice, manioc, and corn. Tests with hibiscus, lemon, and combava were very promising. In order to make cashew more popular, posters have been hung with the help of fokontany presidents. At present, 11,889 pots of cashew have been sown. The dam at Bemilolo in the Tsarahasina ZSI is finished and provisionally verified. It will provide irrigation for 33 ha of rice paddy.

Crop diversity and agricultural production in the different ZSIs during the two agricultural campaigns are as shown below:





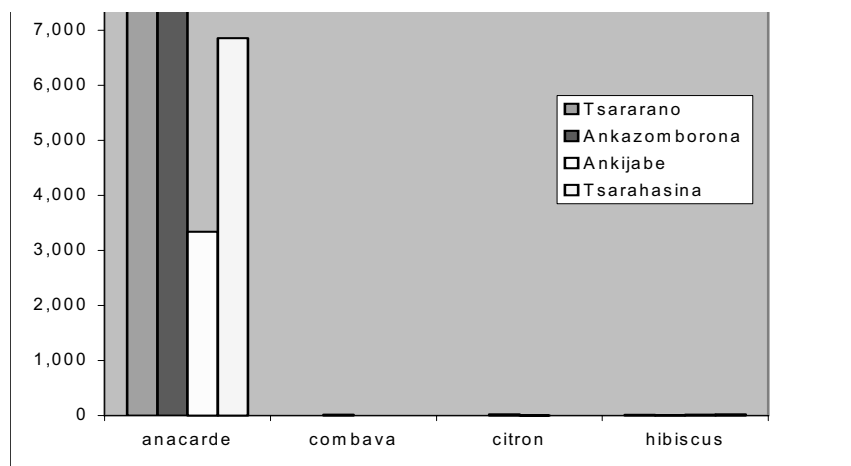


Fig. 1: Distribution of food crops and other produce throughout the ZSIs

For an inter-ZSI comparison (see preceding paragraph), 100% of KH members in the Ankazomborona ZSI are convinced in the advantages of improved seed; 100% in Ankijabe are convinced of the advantages of improved agricultural practices and duck farming. The level of debt repayment in these zones for seed bought on credit is 100%.

Rice remains the most important crop in all three ZSIs. In Tsarahasina, a poor harvest was mostly the result of the sudden halt of rainfall. This made Kolo Harena members in the area more cautious about accepting credit. Field agents are still working to raise awareness about credit initiatives while the "Asara" campaign is in preparation.

Cashew is finding its niche as a cash crop in the ZSIs. Combava, lemon, and hibiscus are still in the test phase, but have aroused a good deal of interest and seem very promising.

Cashew planting doubled in all three ZSIs compared to the previous year. Vegetable farming has also become popular in the Tsarahasina and Ankijabe ZSIs. GCVs built in two villages in the Tsararano ZSI are now operational and have their own stock.

**Community management of natural resources.** The erection of renewable resource management structures via the GPF process is heading in the right direction. 3 CLBs have been created in the Tsararano, Ankijabe, and Tsarahasina ZSIs. The physical marking of borders and inventories have taken place in the Marosely, Antahialava and Ambalafombo forests in close collaboration with CANFORET in Marovoay, Tsaramandroso and Port-Bergé, and two contracts have been signed. The CLBs are now applying plans for a management transfer through PTA 2001 activities. This GPF process involves 161 families from 10 villages. Agricultural intensification and reforestation activities will occur at the level of these three Amboromaika associations, whose members are still receiving training from a junior expert.

The bush fire and pasture management dina set up in the Sainte-Marie zone have been approved at the community level.

**"Environment-friendly business":** the fruit initiative continues in the zone. The Exofruitmad factory is operational and has put natural fruit juices on the market. The Vonona association of Andranofasika received help from Pride to attend an agro-alimentary fair in Reunion.

The energy initiative saw a partnership agreement signed with VITOGAZ and CRS. They will promote gas in Marovoay, Port-Bergé and Mahajanga. 1,000 gas rings have been subsidized through an EAM credit.

**Environmental education** activities undertaken at the regional level in collaboration with MIRAY were finalized in December 2000. With our partners, we produced 3 500 lambahoany and four radio broadcasts. LDI distributed 140 lambahoany as a prize for the CLB when 2 management transfer contracts were signed.

To strengthen the EE team, an environmental education assistant has been hired to run the screening/debate educational sessions for Kolo Harena members. The environmental education of children and teachers, LDI Mahajanga is still working in collaboration with CCEE on reforestation for schools.

**Local capacity building:** KH partners and representatives received training in theory and technique in a number of subjects at CDIA. Practical training (reforestation, composting, etc.) for Kolo Harena took place in the ZSIs. The associations created in the ZSIs have almost all now gained legal status, and form part of the Federations of their respective ZSIs. New Kolo Harena associations are in the making.



## 6. Moramanga Region

### Context

The primary objective of the LDI Moramanga program is to reduce environmental pressures on the Mantadia-Zahamena forest corridor through an eco-regional approach to agricultural intensification, community based natural resource management, environmental education, conservation enterprise development and farmer capacity building. During this second year of the program, the LDI Moramanga program spent a considerable amount of time consolidating its eco-regional conservation and development activities, and with the addition of Cyclone Relief funding expanding into two new strategic zones of intervention (Fenerive-Est and Brickaville/Vatomandry). These new strategic zones of intervention give the LDI Moramanga program a much larger area of intervention and allow us to effectively cover both the east and west sides of the Mantadia-Zahamena forest corridor. In general the program met or exceeded its anticipated objectives despite occasional setbacks due to logistical and cash-flow problems. The LDI staff invested considerable time in designing and implementing appropriate cyclone relief activities for the rehabilitation of agricultural infrastructure that complemented our regular Intervention Fund agricultural intensification activities. It is this complementarity that proved the catalyst for a rapid increase of interest and commitment, on the farmers' behalf, in program activities.

### 6.1 Principal Results

#### 6.1.1 Eco-regional support

Support to eco-regional activities continued and expanded during this year. LDI Moramanga worked hand-in-hand with the CRD (*Comité Régional du Développement*) and the CORDAL (*Comité Régional pour le Développement de l'Alaotra*) to create a common vision for the future of the forest corridor. Regular meetings with these regional planning bodies, and donors, lead to the creation of the *Plan d'Action pour le Développement Régional* pour the Toamasina region.

The process leading to regionally autonomous governments and LDI Moramanga's exceptional reputation as a competent and trustworthy development and conservation partner allowed LDI to become directly involved in the regional planning process through the PADR, GTDR and PSDR. LDI's main goal in these regional planning forums was to insure that rural farmers concerns and private sector interests were integrated into planning discussions.

LDI Moramanga also invested considerable time in establishing excellent working relationships with other donor organizations. This resulted in the leveraging of additional funds from the Malagasy governmental to be given to LDI Moramanga to use for agricultural infrastructure and road rehabilitation. It also resulted in the commitment of the Cornell International Institute for Food, Agriculture and Development to give 3 computers and a slide projector to the *Centre de Diffusion pour l'Intensification Agricole* (CDIA), which serves as our regional research, training and demonstration center. Regional support activities launched during the previous year led to the following results:

- Assisted in the organization and participated in the eco-regional planning process for the Lac Alaotra region
- Participated in CPSE (*Comité de Planification et Suivi/Evaluation*) group for the Moramanga region
- Support to the AGERAS eco-regional planning process continued through a joint venture to produce an economic and natural resource pressure analysis study for the Moramanga eco-region
- Participated in eco-regional planning process of the Moramanga CRD (*Comité Régional du Développement*)
- Provided financial and technical support to the Regional Information System that currently houses its database at CIM (*Centre d'Information de Moramanga*).
- Organized site visits and contracted with ECR to develop a management plan for the rehabilitation of what was once the primer FOFIFA coffee research center in the entire country located in Ilaka Est.
- Opened two new LDI sub-regional office in Fenerive Est and Vatomandry/Brickaville
- Reinforced the CDIA's capacity to assume its role as a regional research, training and demonstration for the intensification of agriculture through a financial and management audit that resulted in a new procedural and accounting manual for the center.
- Established a labor contract to insure sustainability of the CDIA with the *Tongalaza Kolo Harena Federation* in Beforona.
- Organized 2 Farmer-to-Farmer exchanges between ADRA and LDI farmers in the region with the expressed objective of promoting dialogue between farmers within the region.

- Organized 15 technical training sessions, on various agricultural intensification, natural resource management and health themes, for Kolo Harena farmers.
- Organized 4 regional level workshops to reinforce the capacity of Kolo Harena farmers to take responsibility for their own development

### 6.1.2 Agricultural Intensification

The agricultural intensification pallet of technologies offered to the 121 Kolo Harena farmer associations, 4 water user associations and 3 COBA (village level natural resource management committees) continued to be disseminated during this year through partner NGOs (BRL, Marotia, Tefy Saina,...), private sector entrepreneurs (MacDo, Plantation Mondesir, Phelps Dodge,...), and governmental services (CIREL, CIREF, CIRAGRI...). Institutional capacity of partners varied greatly, and thus had an effect on the results (private sector showing the best results and government services the worst), but in general, adoption rates and area put under cultivation using new techniques far-outstripped results from the previous year.

#### Agricultural intensification Highlights

During this year over 3,800 Kolo Harena farmers benefited from access to improved, sustainable agricultural intensification techniques that were designed to help farmers diversify and intensify their farming systems. The following statistics highlight some of the major Kolo Harena associations' accomplishments this past year.

- **Lowland rice fields:** 506 ha were put into production using SRI, SRA and SDA techniques by 834 families with a 55% adoption rate
- **Upland perma-culture:** 204 ha of abandoned upland fields were rehabilitated with organic food crops by 436 families with a 44% adoption rate
- **Off season crops:** 43 ha of land were put into production of off-season crops (potatoes and beans) by 328 families with a 34% adoption rate
- **Cash crop:** 124, 532 coffee seedlings were planted by 294 families, and 12, 700 mixed cash crop trees are currently being planted (litchi, clove, cinnamon, and pepper)
- **Soil fertility:** 1, 545 m<sup>3</sup> of compost was produced and used on home gardens and rice fields by 225 families
- **Small animal husbandry:** 2, 196 chickens have received all the appropriate vaccinations
- **Technical Training:** 400 Kolo Harena farmer leaders and 17 LDI field staff benefited from sessions on various topics (agriculture, small animal husbandry, plant pest and disease, GCV management, organic agriculture.....)

Average yield increases for each production activity surpassed program objectives by between 20 and 235 percent depending on the activity. Average farm level revenue increased by up to 50 %

#### Material and Credit Support

Agricultural intensification is highly dependent upon the reliable supply of agricultural inputs and access to rural credit. To help farmers directly manage their Agricultural Input Supply Centers and have access to small scale loans for agricultural intensification activities, LDI Moramanga established contracts with BEST (Agricultural input supply center technical assistance) and OTIV (access to micro-credit for agricultural intensification activities). Unfortunately, our partners in this very important area of activity are perhaps our weakest. A few centers have encountered management problems, which has resulted in the canceling of BEST's contract. Nonetheless, the remaining centers have shown a remarkable management capacity and have responded well to occasional treasury problems. In a recent regional level Kolo Harena Federation meeting, the lack of a timely disbursement of OTIV loans was sighted as the major obstacle to agricultural intensification. The replacement of OTIV's director general and a series of meetings to establish a more streamlined disbursement system will hopefully alleviate this problem. Thanks to supplemental USAID Cyclone Relief funds, LDI will be opening 4 new supply centers and continuing our micro-credit program with OTIV in the two new strategic zones of intervention.

- *Agricultural Supply Centers:* Approximately 1,000 Kolo Harena members have received loans totaling 40 million FMG for the purchase of small scale agricultural tools and fertilizer, and 222 tons of improved seeds have been purchased on credit from the supply centers. The average credit reimbursement rate for all the centers is 55% (Beforona and Antanandava show reimbursement rates of greater than 70% while Lac Aloatra and Ambatovy show reimbursement rates of less than 50%). Each of the 5 centers received an initial input of \$ 2,500 in-kind to be used as a revolving fund, and they have currently

accessed 50% of this initial stock. The Kolo Harena federations to acquire new materials and seeds for the next growing season have recycled the benefits from these sales.

- *Micro-credit:* For LDI's 2000-2001 work year, over 100 million Fmg (\$15,500) of credit was disbursed to 221 farmers from over 30 Kolo Harena associations. This amount represents 75% of revolving funds initially allocated to OTIV for disbursement in LDI Moramanga's 4 original ZSIs. For the new ZSIs of Fenerive-Est and Vatomandry, \$25,000 worth of credit was allocated to OTIV Toamasina for disbursement during the upcoming year. Overall reimbursement has reached a rate of 67%.

### 6.1.3 Community-based Natural Resource Management

Of all LDI's activities this is perhaps the most complex and difficult to move forward. LDI staff has experienced many difficulties and setbacks in establishing agreements between local communities and concerned governmental services (MEF, Domaine and MINEL) for natural resource management. Government services lack of knowledge of the procedures that govern the transfer of natural resource management has been the biggest stumbling block. To combat this problem, LDI staff has invested considerable time in building the capacity of our governmental partners. The following are highlights of LDI's efforts at the end of this second year.

- Signed a four-party agreement between MEF, the province of Toamasina, ANGAP, and LDI to define a common vision for the protection of the Mantadia-Zahamena corridor and the creation of an annual work plan for the implementation of this vision
- Completion of the first collaborative action to resolve the problem of an illegal village installation within the National Park of Zahamena
- LDI staff organized and participated in training workshops to help our partner organizations better understand natural resource management transfer procedures
- Completed the transfer of natural resource management rights to local communities for three sites in the region of Lake Alaotra, signature of the GCF contracts are expected at the end of July 2001.
- 62,300 trees, 17,200 leguminous species and over 1,000 slips of vetiver were planted to stabilize *Lavaka* (landslide) formation and protect watersheds.
- To conserve soil fertility as a natural resource, LDI helped farmers to produce and use 1,500 m<sup>3</sup> of compost
- LDI continued to work with MEF, MIRAY and Phelps Dodge to set up a community management plan for the Ambatovy forest, with the intention of transferring management rights to the local community sometime before the end of 2002
- LDI also continued to work with Durrell Wildlife Conservation Trust to promote community mapping for sustainable land use planning purposes

### 6.1.4 Communication and Environmental Education

LDI Moramanga's communication and environmental education activities are divided into three major areas: environmental education, the definition of key messages and production of communication tools to get these messages out and the integration of environmental and population/health messages. This past year has produced some very interesting results, among them is the idea that directly communicating to farmers that *tavy* is forbidden is perhaps not the best way to quickly establish a trusting and long lasting relationship. Rather more effort should be put into explaining the underlying hydrological and biophysical principles, in a "farmer friendly" manner, that will lead them to draw their own conclusions about the negative impact of *tavy*.

The following represent communication and environmental education activity highlights for the past year.

Working with CCEE, ANGAP, ADRA, Durrell, MIRAY, and MAB, LDI contributed to the Regional Communication Plan for Moramanga and Alaotra through radio emissions, creation of Village Cultural Centers and promotion of environmental education sessions within the educational system.

- In cooperation with MIRAY and CITE, LDI contributed technical assistance and helped produce a business plan that will insure the sustainability of the Moramanga Information Center (CIM).
- Working with CIM and Kolo Harena farmers, LDI contributed to the definition, evaluation and selection of key environmental and agricultural message to be used within the region
- Working with JSI, Michigan University and Kolo Harena farmers, LDI contributed to the definition, evaluation and selection of key environmental, agricultural and health message to be used within Beforona strategic zone of intervention.

- Working with JSI and SAF/FJKM, LDI contributed to and participated in a workshop on family health issues to better be able to provide Kolo Harena farm families with basic information relevant to their health
- Provide technical and organizational support for the following environmental events:
  - *Vavy Sambany 2000* : a regional fair celebrating rural women and their contribution to conservation (Beforona)
  - *Fetin'ny zetra 2000* : a sub-regional fair celebrating the importance of the Lac Alaotra marshes and the role they play in protecting the environment (12 villages around Lake Alaotra, with the participation of 4 Kolo Harena associations)
  - International Arbor Day: including the planting of 9,130 coffee trees and 936 *Pygeum Africanus* (Ambatovy)
  - International World Environment Day: a regional event celebrating the importance of protecting the environment (Moramanga and Fenerive Est)
- Provided continued technical and programmatic assistance to the farmer managed rural radio station Akon'Ambanivolo (Beforona)
- Installed BLU radios in the ZSIs of Beforona, Antanandava and Lake Alaotra to improve communication capacities
- Financially and logistically supported a workshop for the integration of Lake Alaotra and its periphery in the RAMSAR agreement.
- Technically and financially assisted in the production of a video explaining the importance of protecting the Lac Alaotra wetlands.
- Projection of films on SRI, a landscape approach to development and fish farming
- Production of two film-strip series on technical aspects of SRI and compost production for use by farmer extension agents and LDI field staff
- Production and diffusion of radio spots on companion planting techniques
- Working with JSI, Voahary Salama and Tany Meva, LDI contributed to the writing and submission of a proposal to Packard Foundation for the financing of a test program, in Beforona, that integrates environmental and health activities

#### **6.1.5 Promotion of Conservation Enterprises and FIEFE**

During the past year LDI Moramanga staff concentrated their efforts on helping private sector individuals further refine their investment ideas, develop business plans and secure funding for the creation of new businesses in the region that rely on sustainable natural resource use. Considerable effort was also put into helping Kolo Harena farmer associations link with various buyers, and establish future deliver contracts thereby assuring favorable farm-gate prices through the promotion of competition in the market.

Profitable development and expansion of non-traditional and export cash crops depends on first locating and then developing market international market shares. To assist our partners in developing links to the international market, LDI help organize and prepare regional partners to participate in an exchange visit to South Africa. Farmers and private sector operators have already begun to benefit from this activity as LDI has recently received a request from the Africa Spice company to fill an annual order of approximately 1 container per month, whose value would be about \$50,000 to \$60,000 per month of organically grown spices.

#### **Financing by FIEFE**

- Completed and presented 11 business plans and requests for funding through the FIEFE
- Acquired loans totaling 552 million FMG for 2 companies involved in essential oil production
- Identified 7 other conservation enterprise projects which will receive FIEFE funding of more than 6.5 million FMG

#### **Diversification of support networks and extension of intervention zones**

- Technically supported 25 companies (7 in Ambatovy, 4 in Brickaville, 4 in Fenerive-Est, 3 in Beforona, 3 in Antanandava, 1 in Lac Alaotra, 3 in Fenerive-Est) that operate in 8 networks (essential oils, organic production, eco-tourism, silk production, sustainable forest product use and the production of high quality rice for export)

#### **Business relations between the Kolo Harena farmer associations and the private sector:**

- Organized a regional level meeting at which Kolo Harena farmer associations from each of strategic zone of intervention met with 10 private sector operators to help develop future delivery contracts
- Finalized 7 future delivery contracts between these private operators and the Kolo Harena farmer associations for a total of 295 million Fmg

### 6.1.6 Capacity building

During the past year LDI Moramanga dedicated most of its capacity building efforts to the strengthening of existing farmer associations and the creation of new associations to complement LDI's new areas of intervention. LDI's social organizers provided intensive training to and follow-up for Kolo Harena farmers and Federation management committee members on subjects such as farm and federation management principles and the creation of cooperative farm networks.

Due to the current budget limitations and the opening of 2 new strategic zones, LDI Moramanga has begun to shift its extension approach from a classical field agent based one to one that relies more on a farmer-to-farmer exchange of technical information. With this new approach, LDI and its technical assistance partners will focus efforts on the newly created Kolo Harena associations, while farmer identified "leaders" from each of the existing Kolo Harena associations will, with back stopping from LDI field staff, assure technical support for their respective groups.

During the month of April, LDI Moramanga in collaboration with ADRA was fortunate to be able to organize a training session for field staff that was delivered by Rolland Bunch the author of Two Ears of Corn and an internationally recognized expert on the farmer-to-farmer approach to extension. This training provided the basic framework on which LDI will develop its new approach.

The following list represents highlights of LDI activities in this sector for the past year.

- Assisted in the creation of 136 associations (121 AKH, 4 AUE, 8 partnership associations, and 3 COBA) representing a 240% increase from last year
- Assisting in the creation of new Kolo Harena associations in the new strategic zones of intervention (Brickaville/Vatomandry and Fenerive-Est)
- Contributed to the creation of 4 Kolo Harena Federations (1 for each strategic zone of intervention)
- Provided technical and financial support for management training provided to the committee members of each Federation
- Provided technical and financial support for farmer cooperative training provided to the new Kolo Harena members.
- Supported the identification of "farmer leaders" (selected by the Kolo Harena associations) to begin the transition to a Farmer-to-Farmer extension approach in all LDI strategic intervention zones.
- Provided training, in partnership with CTHT, for "farmer leaders" in Fenerive-Est and Brickaville/Vatomandry strategic zones for the "farmer to farmer" process.
- Organized and provided financial support for a Federation level annual workshop to discuss options that will assure the sustainability of Kolo Harena Federations, and get feedback on perceptions of the LDI approach
- Negotiated contracts with the NGO Mateza and CRS Toamasina that will provide technical assistance to new Kolo Harena associations in Fenerive Est and Brickaville/Vatomandry)



*One more step forward to the autonomy and the durability of the Kolo Harena by the regional federations workshop*



### 6.1.7 Monitoring and evaluation

- Revised LDI's monitoring and evaluation system by including Kolo Harena farmers in the data collection and preliminary analysis, thereby creating a truly participatory sustainable follow-up tool that Kolo Harena associations will be able to use long after the end of the LDI program
- Help design and implement a pilot project for participatory monitoring of *Tavy* in the village *Ambalavero* in the Beforona strategic zone of intervention.

## 6.2 Performance analysis

### 6.2.1 Qualitative analysis

In general, LDI Moramanga's Landscape approach is beginning to be commonly accepted by our partners and starting to show very positive results in terms of agricultural intensification. Nevertheless, the level of integration and diversification of farming systems being used varies according to topographical and climatic conditions in each SZI. In Ambatovy and Beforona, farmers are quick to adopt improved upland agricultural techniques like cash crop diversification projects and supplemental income generating activities such as small animal husbandry and BRF production, but are slow to adopt improved rice production activities. On the other hand, farmers in the ZSIs of Lake Alaotra and Antanandava are much more concerned about increasing the productivity of their lowlands through intensified rice production like SRI/SRA and off-season crops (potatoes, corn and beans), and only just now are they beginning to be concerned about the productivity of their uplands.

As everyone expected, micro-credit has proved to be a difficult component to manage. From the beginning of the program, LDI decided that management of this component should be contracted to a professional, experienced ONG. OTIV seemed to fit the bill.

Unfortunately, their performance has not been 100% satisfactory. In fact, the lack of an efficient micro-credit is currently the biggest hurdle to agricultural intensification activities. The problem is that OTIV is not disbursing the loans in a timely fashion and farmers are losing whole cropping seasons, not to speak of their confidence in LDI. For the system to work better, OTIV has agreed to let LDI staff play a much larger role in the disbursement process (something we did not want to do initially, but are left with no choice at this point in time) that will help get money into the hands of the farmers in a timely manner.



*Reinforced participation of KH member for landscape management with tavy monitoring in Beforona*

In the area of GCRNR, the use of the GCF process in the region of Alaotra (that has produced 3 contracts) has proved to be the least administratively complicated system to transfer natural resource management rights and responsibilities to local communities. The past year, LDI staff invested considerable time in identifying and preparing partners from each SZI that will assist the farmers in the coming year to get legal access to their traditional land holdings (PDM-MIRAY-LDI-CIREF in Ambatovy, DWCT-LDI-CIREF in the region of Alaotra and ANGAP-LDI-CIREF in Andasibe-Beforona). Working with these partners in the coming year LDI expects to negotiate at least 5 more contracts for the transfer of natural resource management rights and responsibilities.

In the capacity building component of the LDI program, participatory approach remains the *Ordre du Jour* for everything LDI undertakes. Only through a dynamic give and take relationship with LDI partners and Kolo Harena farmer associations can a sustainable system ever be assured. This past year has seen real empowerment of the Kolo Harena Federations. For the first time, farmer groups from all over the region are actively seeking out LDI Moramanga and existing *Kolo Harena* farmer associations to find out what it takes to become a part of this structure. It is very rewarding and exciting, to watch farmers that LDI Moramanga has been working with for 2+ years explain to newcomers the importance of intensifying their agricultural

practices while protecting their environment. Another interesting outcome is that *Kolo Harena* associations are beginning to take responsibility for their own development. Examples of this recently occurred in the Lac Alaotra and Antanandava strategic zones where LDI and *Kolo Harena* associations working together rehabilitated 2 irrigation systems. This work, combined with agricultural intensification activities (SRI and off season-crops), has resulted in a considerable increase in agricultural productivity. *Kolo Harena* associations seeing this agricultural commodity surplus and realizing that they lacked proposal writing, business management and negotiation skills to sell the surplus, asked LDI to put together a special training session to cover these topics. This collective analysis of economic opportunities, obstacles and possible solutions to the obstacles is a major step forward towards sustainable development. In the past year, LDI has relied upon the services of BEST, BRL, and SOATEG for the execution of socio-organizational activities. For the most part these partners have proved very capable in this capacity, all be it somewhat expensive. The coming year's budget limitations have forced LDI to re-negotiate contracts for socio-organization with these partners, hopefully it will not have a detrimental effect on their performance.

### **SZI Antanandava**

The most noteworthy results this year were achieved in intensified rice cultivation (SRI) and improved rice cultivation (SRA and SDA). The rehabilitation of two perimeters, *Lovoka* and *Antsahambary*, where hundreds of hectares of rice paddies were either properly irrigated, or completely restored to production after many years of non-use, represented a major investment on behalf of LDI and *Kolo Harena* farmer associations. Production goals far exceeded expectations in total cultivated area, number of farmers adopting improved cultivation methods and in yields. The percentage of farmers using SRI/SRA reached 71%. The average yield of SRI was calculated at 6.1t/ha, which represents a 3-fold increase over traditional techniques. One field even attained a remarkable 30 tons per hectare. Evaluations of the feasibility of organic and no-till production systems showed great promise for the stabilization of upland production systems. Alternative income generating activities like off-season crops, poultry and duck breeding and bee keeping also began to show promise thanks to the support of technical services such as CIREL and CIRPRH. Farmers that benefited from irrigation rehabilitation work and rice intensification technical assistance are now all growing off-season crops such as potatoes and beans to help supplement their income and maintain soil fertility in their rice paddies.

Thanks to heavy emphasis on environmental education and a very dynamic LDI field staff, community based natural resource management has also proven to be attractive to *Kolo Harena* farmers. The *Kolo Harena* Federation in this SZI has decided that protection of upland areas and *lavaka* control is a priority for them. This has resulted in the planting of more than 17,200 seedlings of *Grevillia Banksii* as a means of protecting their watershed.

Meanwhile, efforts to target rural credit and increase access to small-scale farm inputs remains difficult. LDI's efforts to channel credit through OTIV have not yet achieved widespread adoption because of inefficiencies in credit disbursement and the unwillingness of OTIV to work in remote areas, and the nearest agricultural input supply center is several kilometers away. To resolve these issues, LDI has renegotiated OTIV's contract to provide better micro-credit support, and begun construction on a new agricultural input supply center that will serve the *Lovoka* irrigation system.

### **SZI Lac Alaotra**

The highlight of LDI's work in the Lac Alaotra SZI this past year is undoubtedly the transfer of natural resource management rights and responsibilities of wetlands surrounding the lake to 3 communities. The negotiation of 3 GCF contracts has proven that there is a relatively efficient and expedient administrative process for natural resource management transfer. However, MEF's continued lack of knowledge concerning this process is always a major problem. LDI staff invested considerable effort in making sure MEF staff were aware of this process and its implications. Hopefully, this will accelerate future negotiations for GCF contracts in the other ZSIs.

EFE activities in this SZI are centered on the cultivation of onions, production of silk and production of latex (from papayas). With support from the private sector and NGO's, *Kolo Harena* farmers' enthusiasm for conservation enterprise development has greatly increased. The active role of women in these income-generating activities is of utmost importance, notable in



*Off-season culture of onion by KH member in Alaotra to increase income*

silk weaving and caring for the papaya seedlings while they are in the nursery.

For agricultural intensification, the Kolo Harena associations benefited from the same technical assistance all the other ZSIs; Kolo Harena members increased the productivity of their rice fields and are now concentrating on the cultivation of off-season crops such as potatoes and beans. Even with the poor weather conditions this year, the results obtained with improved methods were superior to those achieved using traditional methods. In effect, an increase of 26% was obtained for these 2 off-season crops, which gives an incredible incentive to farmers (the net gain per hectare for potatoes is 3,871,875 FMG (\$ 595), and 1,173,440 FMG (\$ 180) for beans). Duck raising and fish production using cage-culture are also showing excellent promise as alternative sources of revenue for farmers in the region.

### **SZI Ambatovy**

The results that were achieved this year for the Ambatovy SZI are due in part to very dynamic LDI field staff, but most of the credit should be given to a very mature and professional Kolo Harena Federation. Agricultural intensification activities were limited somewhat by the slow advancement of lowland irrigation system rehabilitation (only 40% of the Kolo Harena farmers had access to adequate irrigations structures for SRI and SRA rice intensification). In comparison, agroforestry, upland agricultural stabilization through cash crop planting (support from Phelps Dodge and LDI helped farmers planted 109,828 coffee trees and over 900 *Pygeum Africanus trees*) and off-season crops in the lowlands experienced incredible expansion this year. Small animal husbandry completes the agricultural intensification and diversification picture. Thanks to CIREL and LDI small animal (poultry and pork) mortality has drop considerably (for the entire commune, not just Kolo Harena farmers), resulting in a considerable household income increase.

In terms of conservation enterprise development, silk and coffee production have emerged as very productive activities in this SZI. Farmers have already begun planting mulberry trees (15,000) in their village nurseries for out-planting in October and November 2001. BRF (*Bois Rameaux Fragmenté*), or chipped biomass also provides farmers with an interesting alternative income generating activity. To produce improved biomass for this activity Kolo Harena farmers have obtained small loans (through OTIV) to purchase seeds and plant over 6,000 linear meters of fast growing nitrogen fixing tree species. With the development of these new agricultural products, this issue of marketing is now becoming critical. Fortunately, LDI has signed an MOU with Peace Corps to provide a volunteer who will work on developing marketing channels for these products.

Community based natural resource management activities have concentrated on the establishment of a community management plan for the Ambatovy forest. LDI has worked hard to promote excellent coordination between stakeholders (local communities, MIRAY, Phelps Dodge and MEF), nevertheless MEF's reluctance to work closely with MIRAY has resulted in delays. Hopefully, with continued support from LDI and more regular meetings between the stakeholders the transfer process will proceed more rapidly in the upcoming year.

### **SZI Beforona**

Organic ginger and improved rice cultivation has been the centerpiece of agricultural intensification activities in this SZI. SRA results show a 5-fold increase in yields compared to the traditional practice (2.5t/ha vs. 0.54t/ha). Unfortunately, the decline in coffee prices this year tempered somewhat Kolo Harena farmer association's enthusiasm to plant coffee as an upland cash crop. However, upland stabilization efforts advanced nicely with farmers opting to plant banana and other fruit trees rather than coffee (an adoption rate of 70%). Though these figures are not yet exemplary, the situation is encouraging as more and more farmers become convinced of the economic benefit of a diversified, improved *tanimboly* system compared to the traditional *tavy* system.

Conservation enterprise development efforts have been geared towards empowering Kolo Harena farmers to locate buyers and negotiate future delivery contracts for their surplus agricultural products.

LDI staff also devoted considerable time to environmental education and the integration of health, population and environment activities. SAF/FJKM, JSI and the Michigan University have provided excellent technical assistance for this pilot project that has been found to be an excellent entry point into rural



Promote cash crops to support rice culture in the new SZIs of Fenoarivo and Brickaville

communities for LDI field staff as they continue to introduce the landscape approach to local farmers.

## **SZI BRICKAVILLE/VATOMANDRY and SZI FENERIVE EST**

LDI activity in these two recently opened ZSIs is focused on addressing the Kolo Harena expressed interest in promoting the intensification and diversification of cash crops such as: vanilla, clove, pepper, cinnamon and litchi. Off-season and rice crop production intensification is important, but considered by the farmers as secondary to the cash crop production. Concrete field activities have only recently started; village level nurseries (for cash crops) and agricultural intensification demonstration plots have been put in by the Kolo Harena identified farmer “leaders” who will play a paramount role in establishing the Farmer-to-Farmer extension system.

In terms of conservation enterprise development, LDI has completed preliminary studies for the installation of 2 Kolo Harena managed improved stills for essential oil production, and rehabilitated/improved the production capacity and quality of an existing still on the Mondesir plantation in Fenerive Est.

Capacity building efforts have been focused on getting a broad base of Kolo Harena associations started. LDI also recently completed a cost assessment of and plan for the rehabilitation of an abandoned FOFIFA research station in Ilaka Est that will be used for training and demonstration purposes in the Vatomaniry and Mahanoro areas.

### **6.2.2 Quantitative analysis**

#### **Description of LDI Moramanga results**

<b>Expected results Y2</b>	<b>Accomplishment</b>
280 Kolo Harena associations 6,000 members	3845 members of 136 associations <ul style="list-style-type: none"> <li>• 121 Kolo Harena</li> <li>• 4 associations of water users</li> <li>• 3 basic communities on CBRNRM</li> <li>• 8 DWCT community associations</li> </ul>
- 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	<ul style="list-style-type: none"> <li>• 27% of KH has adopted improved practices</li> <li>• 68% of KH are using improved practices.</li> <li>• Disbursed \$36,000 in rural credit, \$15,500 of which for 2000-2001 campaign</li> </ul>
20 % increase in both household income and crop production.	20% to 235 % augmentation of yields depending on crops and region. Minimum of 20% augmentation of revenue
45 villages doing community conservation, Gelose or GPF activities <i>200 villages involved in sustainable use of natural resources</i>	<ul style="list-style-type: none"> <li>• On-going process to be completed: 3 villages in Lac Alaotra SZI, 5 villages in Brickaville, 1 village in Ranomafana Est,</li> <li>• 120 villages involved in environmental activities such as compost making, tree planting, BRF and mulch use, reed plantation.</li> </ul>
Complete and sign 5 participatory forest management. Continue the process with 10 other participatory natural resources management.	6 running activities: <ul style="list-style-type: none"> <li>• GPF process activity in Ambohimanarivo Ambatovy.</li> <li>• 3 GCF contracts to be finished in Lac Alaotra</li> <li>• Assistance for 500 ha concession community management in Ambodimanga – Brickaville</li> <li>• Tavy and forest access monitoring in Ambalavero</li> </ul>
27 environmental education activities with communities. - Fully implement the LDI and the regional communication plan	15 running activities : <ul style="list-style-type: none"> <li>• Implementation of the Region Communication Planning (Plan de Communication Regional, PCR) for Moramanga and Alaotra.</li> <li>• Radiobroadcast spot production</li> <li>• Implementation of Village Cultural Center (Centre Culturel Villageois, CCV)</li> <li>• Environmental education sessions in school</li> <li>• Startup of the Moramanga Information Center (Centre d'Information de Moramanga, CIM).</li> <li>• Trial of radiobroadcast message for Moramanga</li> <li>• Technical and functional support for the realization of « Vavy Sambany 2000 » fair</li> <li>• “Fetin'ny zetra” 2000,</li> <li>• World Tree Day in Ambatovy</li> <li>• Planting of 9130 coffee tree and 936 <i>pygéum</i>.</li> <li>• Participation to the World Day for Environment (Moramanga et Fénéryve Est)</li> <li>• Repair of the radio station Akon'Ambanivolo (Beforona)</li> <li>• CBs Installation for the ZSIs</li> <li>• Participatory elaboration of the “Journal Kolo Harena”.</li> <li>• Support the realization of a workshop aiming the integration of Lac Alaotra and its surroundings into the RAMSAR convention.</li> </ul>

10 new EFEs supported by LDI. Continue to support and assist 23 conservation enterprises	<ul style="list-style-type: none"> <li>• 25 supported CE in dried fruit, essential oil production, papaya, onion, cinnamon, geranium, ecological ginger, silkworm, ecotourism and BRF production</li> </ul>
5 new EFEs investment projects assisted by LDI	12 new projects: <ul style="list-style-type: none"> <li>- 3 projects for essential oil production in Beando, Lamahoana and Fénérive</li> <li>- project for papaya culture,</li> <li>- 2 projects for geranium production,</li> <li>- black pepper plantation in Ilaka est.</li> <li>- rice for exportation,</li> <li>- ecological ginger,</li> <li>- BRF production,</li> <li>- Onion,</li> <li>- Silkworm.</li> </ul>
Total investment in conservation enterprises will average \$ 400,000 (Biosave and MonDesir). Of which \$180,000 from FIEFE	2 essential oils projects financed for \$85,000 7 newly identified projects in needs of \$1Million
205 farmers will have commercial relationship with conservation enterprises	- Up to 620 farmers have commercial relationship with CE
66 regional partners collaborate in planning, communication, information system and implementation	<ul style="list-style-type: none"> <li>- 71 stakeholders in total</li> <li>- 8 stakeholder organizations (CPSE)</li> <li>- 10 Stakeholder organizations (Communication)</li> <li>- 15 stakeholders organization (SIR)</li> </ul>
Working with 280 Kolo Harena associations and 6,044 members 6 federations of Kolo Harena associations 1 union of Kolo Harena Federations	136 Kolo Harena of 3845 members. 4 KH federation of KH in place No union of federation.
Develop methodology and assess effect of tavy and bushfires in 3 pilot zones in LDI regions	The community-based process of tavy monitoring is in place, managed by villagers in Ambalavero. We are waiting for the aerial photography
15 NGOs working with LDI 5 NGOs and associations trained by LDI	<ul style="list-style-type: none"> <li>- 50 KH formalized</li> <li>- 4 federations set up</li> <li>- 0 Union of federation created</li> <li>- 7 qualified and satisfying NGO collaborating with LDI.</li> </ul>

## Analysis of indicators

### Indicators of Agricultural Intensification Activities

The increase in participating Kolo Harena associations (36 associations) since the beginning of the program gives evidence that farmers are beginning to understand the value of a landscape approach and the necessity of grouping themselves into associations. The numbers of farmers that LDI is working with (3,845 farmers) has tripled over the last two years, evidence of the hard work LDI staff have put into overcoming Malagasy farmers' natural reservations concerning anything new.

Results attained from the agricultural intensification activities were very impressive for this year compared to preceding years. This was partially due to favorable meteorological conditions, but also because of excellent technical backstopping from LDI field staff and partners. On average, 68% of all Kolo Harena farmers introduced to improved techniques use them. This percentage obviously varies from technique to technique, with SRI/SRA, off-season crops (potatoes and beans) and composting having some of the highest adoption rates.

The main constraints to adoption of agricultural intensification techniques are labor and the speed at which technical assistance programs such as LDI work. Time management becomes an essential component, especially when most farmers do not have the same day to day work rhythm that the LDI program does. They are often times much more concerned about feeding their families and less concerned about overall economic development and biodiversity conservation. In addition, most Malagasy farmers lack adequate labor resources to use the new techniques so they must employ additional help, to do this requires money, which in turn requires an efficient micro-credit system. The unsatisfactory performance of OTIV's micro-credit system has further hindered agricultural intensification.

Average crop yield increases ranged from 20 to 235% depending on the crop and climactic conditions. Overall household income increase also varied according to the crops produced and the degree of cyclone damage to fields. Nonetheless, a minimum increase of 20% was achieved for most households practicing improved techniques.

### Indicators for CBRNM activities

Two years of consciousness raising began to be repaid when Lac Alaotra Kolo Harena farmer association members decided that replanting the marshes and upland reforestation activities were a priority. According to

them, "to work with LDI is not only to improve your agriculture, but also to safeguard the environment and fight against poverty." It was also repaid by the completion and signing of a 4 party agreement (between LDI, MEF, ANGAP and the regional government) that outlines a common vision and defines a yearly work plan for collaboration concerning natural resource management priorities in the region.

Prior to LDI getting involved in the transfer of marsh resource management rights and responsibilities in the Lac Alaotra region MEF agents had no knowledge of the GCF process or the opportunities it offered to streamline the transfer process. Consequently, LDI Moramanga invested considerable resources (human and financial) towards advancing the knowledge of MEF in regards to the GCF natural resource management tool. To accelerate the process, LDI Moramanga also hired a temporary assistant that guided MEF and local communities through the process from the beginning. Three GCF contracts have been established, with accompanying management plans, for 3 formally recognized communities. Signing of the contracts will hopefully take place in July 2001. Ongoing activities in Brickaville, Ambatovy and Ranomafana-Est are LDI Moramanga's next priority.

LDI in collaboration with PACT and Kolo Harena farmers has also initiated a pilot participatory monitoring program for *tavy* in the pilot SZI of Beforona. The community has already begun monitoring *tavy* and managing the nearby forest. Hopefully, aerial photos will soon arrive that will complete the qualitative data already acquired, and allow the community to begin land use mapping exercises.

#### Indicators for Community and Environmental Education activities

Helped by the establishment of full-time environmental education and communication coordinator position, activities have expanded considerably this past year. Activities in this area of the LDI program are geared to either 1) communication of environmental messages (i.e. a landscape approach), 2) communication about and marketing of the Kolo Harena concept, or 3) communication of technical information ranging from agricultural intensification techniques to market data for Kolo Harena farmer associations. This year considerable effort was put into the first and second components. Slowly but surely, the number of farmers familiar with the program is growing and future actions will be oriented more towards the participatory design and production of appropriate communication tools.

#### Indicators for Conservation Enterprise Development activities

Results in this area have been extremely positive this year. Most of LDI Moramanga's conservation development support has been channeled into essential oil production, organic spices and silk production. Other areas of interest are latex production from papaya trees, dried fruits and BRF production as a soil amendment to be marketed locally. Ecotourism still holds tremendous potential for development in the Moramanga region, but operators remain skeptical of governmental authorities and are unwilling to provide the required financial data to obtain loans. Until economic operators feel that they will be treated justly by the local and national authorities, ecotourism will continue to remain underdeveloped.

#### Indicators of Capacity-Building activities

Kolo Harena farmers have a very large task ahead of them, working under very difficult, even daunting conditions. The environmental situation is very poor and the economic situation is very limiting. But as in all development, it will be human resources that make the difference. The conditions can only be made more productive by good human resource development. Alternatively, human resources are wasted by institutional arrangements that constrain rather than empower.

LDI's tremendous effort devoted to capacity building among Kolo Harena associations and federations has begun to show results. With 136 Kolo Harena associations, 3,845 members and 4 Kolo Harena Federations in place farmers in the region are beginning to see the benefit of working together towards a collective goal of changing the conditions under which they have to operate.

At a recent Kolo Harena Federation meeting held at the CDIA in Beforona representatives from all six of the ZSIs were brought together to discuss the long-term sustainability of the Kolo Harena and Landscape approach to development. Understandably, many of the new Kolo Harena representatives were still locked in the established culture of charity that so often accompanies development projects. For the first time, representatives from the original Kolo Harena associations publicly contradicted (something that is usually not done in Malagasy culture) the new members, and explained why it is essential that they take responsibility for their own development. It was also very interesting to watch Kolo Harena farmers come to the conclusion (on their own) that a Farmer-to-Farmer system of extension was the only way to assure continued and wide-scale spread of agricultural intensification and environmental protection techniques.

LDI's challenge for the coming year will be to help these farmers realize their vision for a better, more productive future.

# LDI/USAID

## RÉGION DE MORAMANGA Activités en cours dans les zones stratégiques d'intervention

**ZSI LAC ALAOTRA**

Nombre de villages : 10  
 Nombre de Kolo Harena : 16 associations  
 Nombre de membres : 238 hommes et 161 femmes

**Principales activités**

**Intensification agricole**

- Cultures vivrières : SRI/SRA/SDA (102 ha, 10 KH), pomme de terre (4 ha, 4KH), culture maraichères (12,5 ha, 4KH), compost (60 m3/9 KH)
- Cultures de vente : Maïs (18 ha, 4 KH), arachide (5 ha, 3 KH), oignon (20 ha, 1 KH), haricot (9 ha, 3 KH), riz export
- Reboisement : Zozoro (10,7 ha, 9 KH), Eucalyptus (3 ha, 7 KH), hale vive (270 m, 1 KH)
- Petite élevage : Élevage piscicole en enclos (3 cages, 3KH), vaccination volailles (1004 têtes)
- Infrastructure de production : 1 barrage hydroagricole, 2 centres d'approvisionnement + 1 point de vente et 11 KH
- Centre d'approvisionnement en intrants : 31.055.100 Fmg (semences), 9.318.044 Fmg (matériel), micro-crédit (119.847.500 Fmg)

**CCRN** : Finalisation de 3 GCF pour riz, 3 COBA, validation au niveau commune, sensibilisation S&S RAMSAR du Lac Alaotra

**Éducation environnementale / IEC** : Fetsyhy zetra, 3 Centres Culturels Villageois, brochure Plan de Communication Régional de l'A laotra, solemnité LDI par les KH, atelier RAMSAR, embellissement scolaire

**EFF** : Vannerie et artisanat

**Renforcement de capacité** : Fédération KH "Ehndran Alaotra" (5KH, 8 membres de bureau)

**ZSI AMBAT OVY**

Nombre de villages : 12  
 Nombre de Kolo Harena : 17 associations, 1 AUE  
 Nombre de membres : 212 hommes et 45 femmes

**Principales activités**

**Intensification agricole**

- Cultures vivrières : SRI/SRA (20,5 ha, 13 KH), cultures maraichères (35,5 ha, 14 KH), compost (730 m3, 14 KH)
- Cultures de vente : Café (110 ha, 109.828 pieds, 14 KH), papaye (950 plants, 4 KH, essai)
- Centre d'approvisionnement en intrants : Vente de matériels (5 millions Fmg), crédit OTIV (13,6 millions Fmg)
- Aménagement des tenues : Agroforesterie (5973 mètres de semis)
- Reboisement : Plantation d'Eucalyptus (22.890 pieds plantés par 13 KH), de pépinières d'agroforesterie (236,5 m2 pour 13KH)
- Petite élevage : Embouche bovine, cyniculture (178 têtes), pisciculture (8,5 ares, 4 KH, 1500 alevins), apiculture (8 ruches, 5 KH), vaccination de volailles (105 têtes)
- Infrastructure de production : 1 barrage hydroagricole, 1 centre d'approvisionnement 5.864.640 Fmg (semences), 18.513.405 Fmg (matériel), micro-crédit de 36.245.540 Fmg

**CCRN** : GPF en partenariat avec MEF, PDM et MIRA Y (2505,04 ha)

**EFF** : Bois Ramené Fragmenté (6KH), reboisement sur 6 ha

**Renforcement de capacité** : Fédération Kolo Harena (13KH, 26 membres)

**IEC/EE** : Solemnité LDI organisée par les KH, embellissement scolaire

**ZSI DE BEFORONA**

Nombre de villages : 10  
 Nombre de Kolo Harena : 16 associations  
 Nombre de membres : 210 hommes et 189 femmes

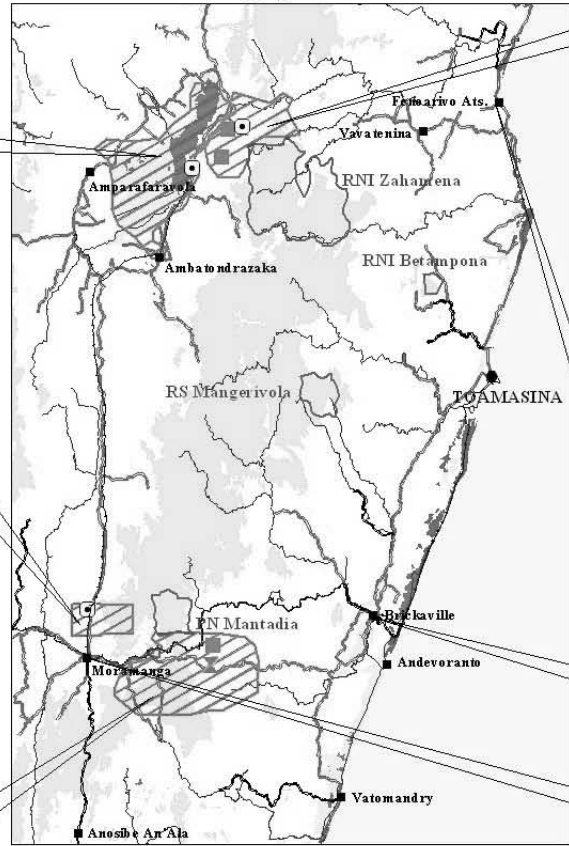
**Principales activités**

**Intensification agricole**

- Cultures vivrières : SRI/SRA (14,7 ha, 16 KH), cultures maraichères légumes et haricot (38 ha, 16 KH), pomme de terre (6 ares, 1KH, phase d'essai), compost (25 familles)
- Cultures de vente : Café (15 ha, 14.700 plants, 11 KH et 97 paysans non-KH), gingembre écologique (5 ha, 12 KH)
- Infrastructure de production : 1 barrage hydroagricole par 1 KH, 1 Centre d'approvisionnement pour 16 KH
- Centre d'approvisionnement : 13.952.250 Fmg (semences), 5.182.128 Fmg (matériel), crédit agricole (16.872.000 Fmg), et GCV paddy (7,75 t)
- Petite élevage : Vaccination de 437 têtes (peste et choléra)
- Pisciculture : 9 étangs piscicoles

**CCRN** : 1 site localisé

**Renforcement de capacité** : Fédération de KH "Tonga lara" (16 KH, 32 membres de bureau)



**ZSI ANTANANDAVA**

Nombre de villages : 18  
 Nombre de Kolo Harena : 19 associations Kolo Harena  
 Fédération KH : 19 KH, 18 membres de bureau  
 Nombre de membres : 263 hommes et 194 femmes

**Principales activités**

**Intensification agricole**

- Cultures vivrières : SRI/SRA/SDA (67 ha de contre-saison, 19 KH), cultures maraichères (10 ha, 10 KH), pomme de terre (14,2 ha), haricot (8 ha), compost (800 m3 avec 13 KH, 70 familles), écobaga (30 ares), riz export Madrigal (849 kg, 7 KH)
- Culture sur tenue : Arachide (42 ha, 14 KH), maïs (52 ha, 15 KH), haricot (24 ha, 15 KH)
- Centre d'approvisionnement en intrants : Vente de matériels (12 millions Fmg), crédit OTIV (2 millions Fmg pour 107 membres)
- Reboisement : Eucalyptus (34.000 pieds, 14 KH + 2 AUE), arbres fruitiers (1.500 plants, 12 KH), 11 pépinières agroforestières
- Petite élevage : Système agro-pastoral et culture fourragère (10 ha, 10.000 brachiaria + 3.000 pennisetum, 30 familles), palmipèdes (9KH), vaccination (650 têtes, 7 KH)
- Infrastructure de production : 1 barrage réhabilité (FCV), 1 centre d'approvisionnement + 2 points de vente 9.551.160 Fmg (semences), 7.177.127 Fmg (matériel), micro-crédit de 38.980.900 Fmg

**Éducation environnementale / IEC** : Foire à Ambatondrazaka, atelier RAMSAR

**EFF** : Campement communautaire avec CI et PCV, production de riz export avec Madrigal

**CCRN** : Gestion agrobiologique du sol (3ha, 12 KH), stabilisation de levées (1 levée, 8.000 plants gévillés, 2 KH + 1 COBA)

**Renforcement de capacité** : Formation fonctionnelle de 10 KH et de 1 FKH

**ZSI DE FÉNÉRIVE-EST**

Nombre de villages : 20  
 Nombre de Kolo Harena : 20 associations Kolo Harena  
 Nombre de membres : 299

**Principales activités**

**Intensification agricole**

- Cultures vivrières : SRI/SRA, haricot, patate douce, maïs, pomme de terre, cultures maraichères (légumes feuilles, légumes fruits, légumes racines, légumes tiges)
- Cultures de vente : Litchi, vanille, café, girofle
- Reboisement : Potentialité de 10 ha pour l'année

**Éducation environnementale / IEC** : Émissions radiophoniques environnementales

**Renforcement de capacité** : Formation fonctionnelle des KH

**ZSI DE BRICKAVILLE - MAHANORO - VATOMANDRY**

Nombre de villages : 15  
 Nombre de Kolo Harena : 22 associations Kolo Harena  
 Nombre de membres : 353

**Principales activités**

**Intensification agricole**

- Cultures vivrières : SRI/SRA, haricot, maïs, cultures maraichères (pays, choux, chou-fleur, carotte)
- Cultures de vente : Litchi, banane, café, girofle

**Éducation environnementale / IEC** : École verte

**Renforcement de capacité** : Formation fonctionnelle des KH, formation des paysans formateurs

**APPUI RÉGIONAL**

- Partenariat avec AGERAS pour la planification éco-régionale
- Écotourisme : Rail Bêhe, MENDRI, Alasoa Écotourisme, produits biologiques (café, gingembre écologique, fruits séchés, latex), huiles essentielles, sériciculture
- Centre d'Information Moramanga
- Réseau d'information régionale
- Radio rurale "Akon'Ambanivolo"
- PCR régionale
- Foire JME, Foire Vavy Sambany 2000
- Centre de Diffusion des Techniques Agricoles (CDIA) de Beforona
- Recherche (Cornell University, ESSA, BEMEA)





## RÉGION DE MORAMANGA Réhabilitation cyclonique



### Périmètre D'AMBOHIMARINA

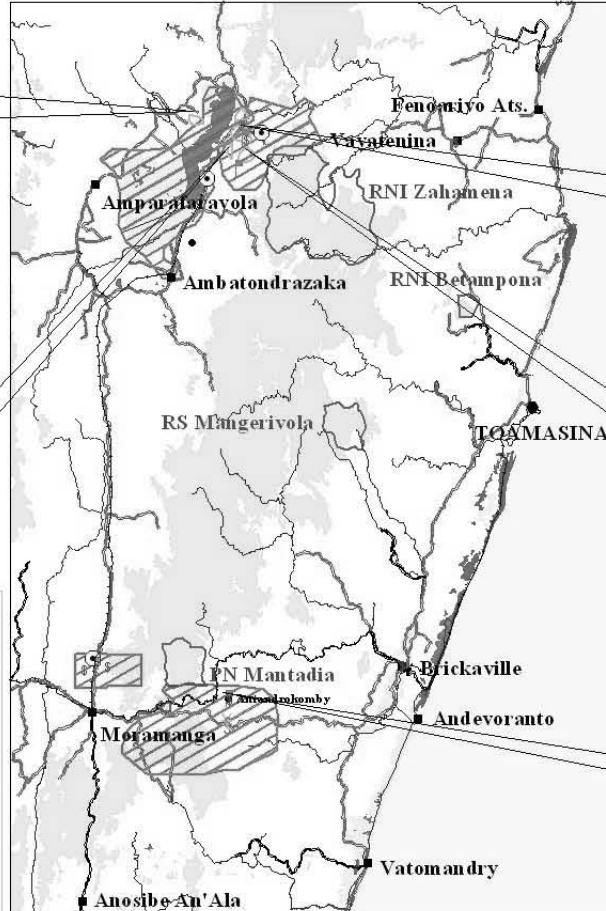
**Surfaces :** 180 ha  
**Travaux réalisés :**  
 - Curage du drain  
 - Remblaiement des berges  
 - Construction des passages à zébus  
 - Protection biologique des berges  
**Nombre des bénéficiaires :** 276  
**Financement :** Fonds régulier d'intervention LDI  
**Début des travaux :** 14 décembre 2000  
**Délai d'exécution :** 1 mois  
**Entreprise titulaire :** AMS  
**Contrôle et Surveillance :** Office engineering

### Périmètre d'AMPARIHITSO KATRA

**Surfaces :** 80 ha  
**Travaux réalisés :**  
 - Réhabilitation de canal principal (3841)  
 - Ouvrage sur canal  
**Nombre total des bénéficiaires :** 50  
**Financement :** Fonds de réhabilitation cyclonique  
**Début des travaux :** 01 avril 2001  
**Fin des travaux :** 31 mai 2001  
**Entreprises titulaires :** EGECORAM  
**Contrôle et Surveillance :** MAMOKATRA

### Centres d'approvisionnement agricole

**Nombre :** 5  
**Localisation :**  
 - Bekatsaka  
 - Ambatomanga  
 - Manorita  
 - Beforona  
 - Ambatovy  
**Travaux réalisés**  
 Construction de 5 bâtiments en dur de 40 m2 couvert  
**Nombre des bénéficiaires :**  
 - Bekatsaka : 198 (9 KH)  
 - Ambatomanga : 218 (6KH)  
 - Manorita : 103 (3KH)  
**Financement :** Fonds de réhabilitation cyclonique Tranche 1  
**Début des travaux :** 15 octobre 2000  
**Fin des travaux :** 30 novembre 2000  
**Entreprise titulaire :** RAMAROJAONA  
**Contrôle et Surveillance :** EEDR Mamokatra



June 2001

Sources : FTM, ANGA, LDI, MEF.

Réalisation



### Périmètre de LOVOKA

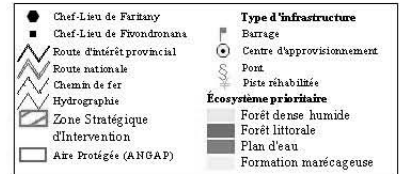
**Surfaces :**  
 - Lovoka amont : 373 ha  
 - Lovoka aval : 204 ha  
**Travaux réalisés**  
 - Réhabilitation du barrage  
 - Réhabilitation des canaux primaires et secondaires  
 - Colmatage des brèches sur la rivière Lovoka  
 - Réhabilitation des ouvrages  
**Nombre total des bénéficiaires :** 668 (2 AUE)  
**Financement :** Fonds de réhabilitation cyclonique - Tranche 1  
**Date du début de construction :** 15 octobre 2000  
**Date de réception provisoire :** 30 novembre 2000  
**Entreprises titulaires :** EGCEA  
 RAMAROJAONA  
**Entreprise de contrôle :** BRL

### Périmètre d'ANTSAHAMBARY

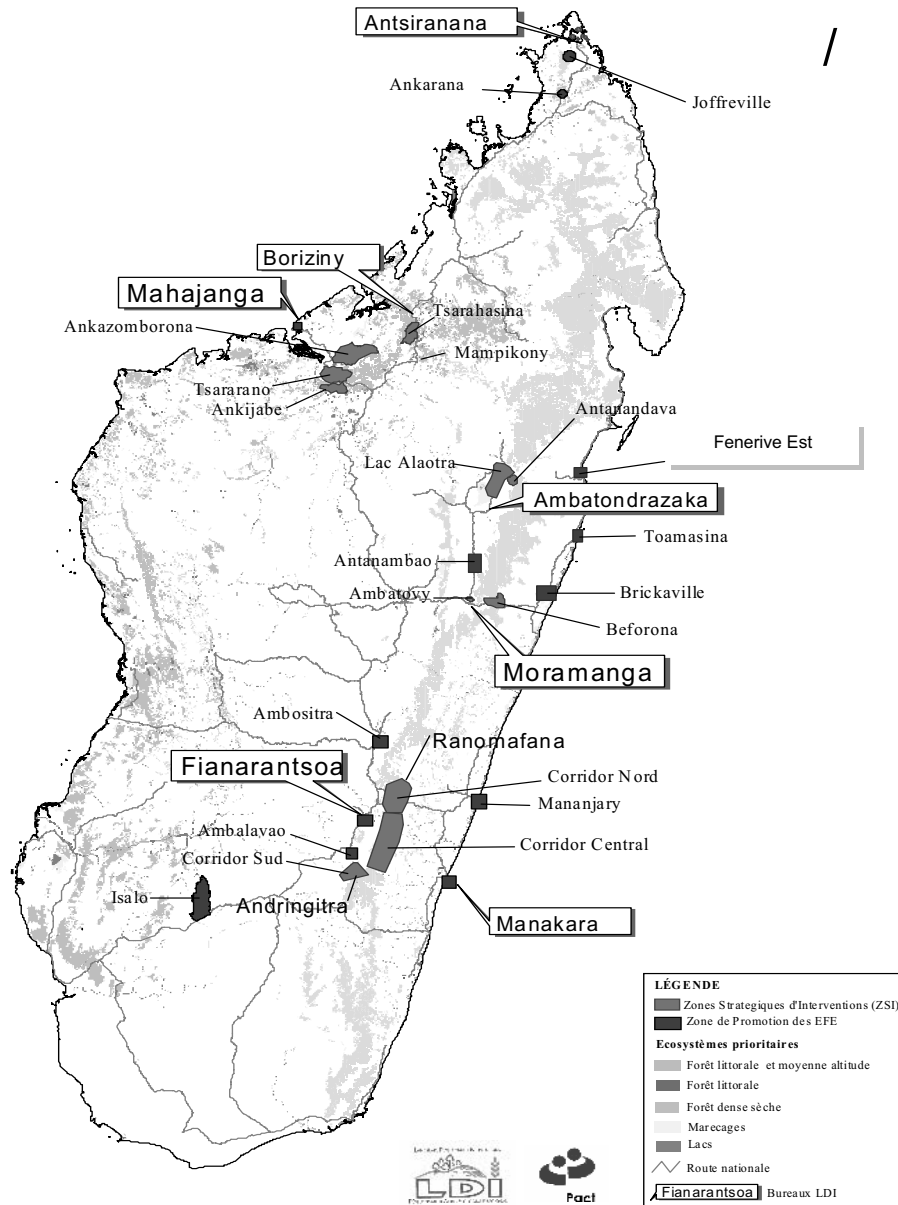
**Surfaces :** 150 ha  
**Travaux réalisés**  
 - Réhabilitation du barrage  
 - Réhabilitation du canal principal rive droite  
 - Réhabilitation des ouvrages  
**Nombre total des bénéficiaires :** 110 (1 AUE)  
**Financement :** Fonds de contre valeur USAID  
**Date du début de construction :** 15 octobre 2000  
**Date de réception provisoire :** 30 décembre 2000  
**Entreprises titulaires :** EGECORAM  
 GROUPEMA  
**Entreprise de Contrôle :** EEDR Mamokatra

### Périmètre d'ANTANDROKOMBY

**Surfaces :** 22 ha  
**Travaux réalisés :**  
 - Barrage de dérivation en dur  
 - Ouvrage de chute  
 - Ouvrage sur canaux  
**Nombre des bénéficiaires :** 56  
**Financement :** Fonds de réhabilitation cyclonique  
**Début des travaux :** 01 avril 2001  
**Fin des travaux :** 31 mai 2001  
**Entreprise titulaire :** ERASMA  
**Contrôle et Surveillance :** BRL



# LES REGIONS D'INTERVENTIONS DE LDI



**LDI / USAID**  
**Activités en cours dans les régions d'intervention**  
**(Juillet 2000 – Juin 2001)**



**APPUI ECOREGIONAL**

- LDI travaille avec AGERAS, MIRAY et plus de 80 partenaires en intensification agricole, éducation environnementale, gestion communautaire des ressources naturelles
- Mise en place de 3 centres de diffusion des techniques agricoles (CDIA) et d'un centre d'information environnementale
- Appui au réseau d'information régionale
- Développement des filières énergie, huiles essentielles, produits biologiques, écotourisme, café, banane, poivre, cannelle, gingembre, raphia
- Promotion de la radio rurale
- Recherche avec l'université de Cornell, FOFIFA et l'université de Berne

**INTENSIFICATION AGRICOLE**

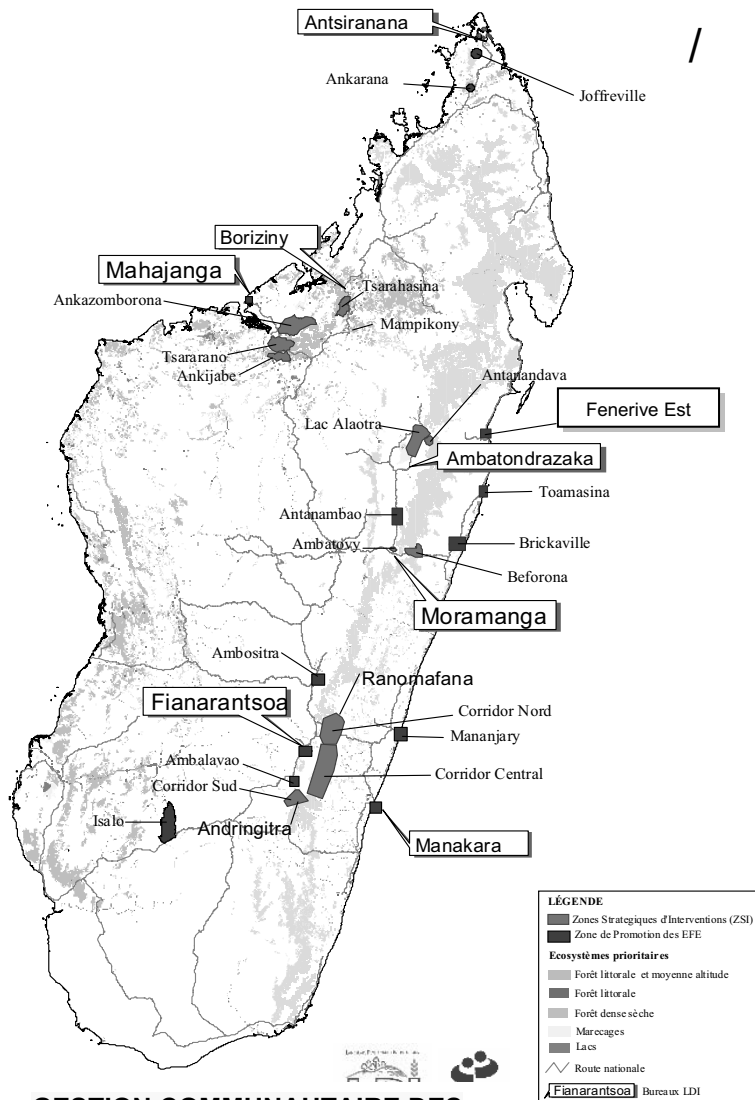
- 455 associations Kolo Harena avec plus de 14,000 membres pratiquant une agriculture plus durable et plus profitable, regroupées en 14 Fédérations
- 310 villages impliqués dans l'utilisation durable des ressources naturelles
- 20 centres d'approvisionnement en intrants et greniers communautaires villageois fonctionnels
- Crédit agricole opérationnel avec OTIV et la RTM/ROA et Entrenrendre à Madagascar

**ENTREPRISES FAVORABLES À L'ENVIRONNEMENT**

- Appui à 85 EFE. Débloqué \$154,000 de FIEFE pour 3 EFEs
- 8 EFE ont investi près de \$1,250,000
- 2 100 paysans en relation commerciale avec les EFE avec 500 millions Fmg de ventes conclues entre paysans et EFE
- , plus de 500 emplois créés et
- Création de Zone d'Investissement Ecotouristique à Isalo, à Ankarana et à JoffreVille
- Participation à des foires et tables rondes au

**EDUCATION ENVIRONNEMENTALE**

- 18 activités environnementales dont projection/debat de films, théâtres, marionnettes, activités de reboisement, radio environnementale, conférence débat, avec des partenaires comme Durell, CCEE, MICET, Mediascope



**GESTION COMMUNAUTAIRE DES RESSOURCES NATURELLES**

- 5 contrats de gestion participative de forêt sont signés
- 10 autres sites initiés (forêts, marais) pour être transférés à des communautés villageoises, soit à travers le processus Gelose, soit par d'autres contrats de transfert de gestion (Gestion participative des forêts, immatriculation collective).

*Jun 2001*