

Ecoregional Conservation and the Ranomafana - Andringitra Forest Corridor : A Retrospective Interpretation of Achievements, Missed Opportunities, and Challenges for the Future

Mark S. Freudenberger

1. Introduction

- **Vision :** The author spelled out ecoregional hopes 10 years ago (Freudenberger and Freudenberger, 2002). Noted importance of promoting agricultural intensification, rural transport, and other elements. The initial vision spelled out at that time presented a sobering assessment of the complexities encountering the ecoregional actors, but also spelled out a clear program for orienting donor and state investments.
- **Key Question:** What has happened after 10 years in the Ranomafana – Andringitra forest corridor? Has the ecoregional conservation and development paradigm worked? Has conservation and economic development occurred in the last ten years? Is the forest corridor in a better conserved state than it was 10 years ago?
- **Response:** Through the framework of the Nature, Wealth, Power and Health analytical framework, this paper argues that despite 10 years of intensive investment by the government of Madagascar, USAID, and other donors, the Ranomafana – Andringitra forest corridor continues to be threatened by many of the same variables noted 10 years ago but also by many new and unanticipated ones. Ecological degradation continues and indeed the speed of forest conversion may be increasing dramatically linked in part to the creation of the New Protected Area. The Ranomafana-Andringitra forest corridor is under even greater threat. Major set-backs have occurred and namely the creation of structural changes, like the rehabilitation of the FCE railway. The forest corridor is more vulnerable today than ever before. New opportunities never dreamed of 10 years ago have also emerged to challenge and shape future programmatic orientations.

2. Méthodes

- **Author background :** Perspective of the author, regional coordinator for the USAID Landscape Development Interventions Program (LDI), PTE, and ERI. Coordinator of the Ecoregional Alliance USAID. Author of initial articles (MSF and KSF and MSF/Salohy) and participated in supporting key studies (Patterson, KSF/FCE study). Author promoted applied field research of IRD/GEREM program.
- **Review of Project Documentation and Personal Experience:** The USAID programs actively encouraged applied research by academic institutions and students. Series of consultancies carried out to judge the strengths and weaknesses of the USAID and government interventions. Use the analytical and programmatic framework of “Nature, Wealth, and Power” to analyse how the achievements obtained over the past years have indeed been tempered by missed, and indeed, squandered opportunities.

3. Results/Discussion

1. Ecoregional Approach : Vision 10 years ago

- **Vision for the forest corridor:** The provincial actors and friends of the Ranomafana – Andringitra forest corridor developed a remarkably clear vision for the ecoregional paradigm in the late 1990s. Influenced strongly by the WWF ecoregional planning frameworks of the time, the vision was based on ecological and social problem analyses, the creation of stakeholder consultative groups (AGERAS and CMP), and the development of clear strategies for “strategic zones of intervention.” These strategies were based on the key precepts of: 1) Try to avoid “cutting” of the Ranomafana – Andringitra forest corridor at critical areas, raise public awareness and education, promote alternatives to slash-and-burn

agriculture; 2) rehabilitate the FCE railway and feeder roads; 3) promote economic growth and development along the Ranomafana – Andringitra forest corridor (show model). Promote interventions in multiple areas. Ecological inventory by Steve Goodman et al noted that the focus of conservation should be in low altitude areas. But, with rapid fragmentation and disappearance of the lowland altitude forests, focus turned to maintaining whatever large band of forest could be located.

- **Economic Corridor:** Promote economic development for rural communities through promotion of food security. Promotion of food security necessitates deep commitment to improving rural infrastructures, agricultural extension, rural transport etc, Studies by LDI/K. Freudenberger highlighted the need to promote economic development along the forest corridor. Vision developed through the Economic Transport study (MSF and others). See JRE study, “Are we on the right track?” MSF regional transportation study.

2. Ecoregional Conservation and Development in the Ranomafana – Andringitra Forest Corridor: Was the Vision Achieved?

- **Ecological Corridor:** The previous analytical exercises portray an interesting set of issues. The historical process of forest fragmentation is continuing and indeed the pace may be quickening. The last lowland wetlands suitable for rice cultivation are most likely being cleared at this time and probably in a rapid response to the creation of the new protected area (NAP). Part of an historical process of progressive expansion toward the western side of the forest corridor; upward expansion of agricultural limits for rice cultivation on the eastern side of the forest corridor. Demographic pressures remain high despite introduction of family planning. Rates of coverage of rural communities along the forest corridor near 5% at most. Key areas along the forest corridor, like Ikongo and Ambohimamasina, are now undergoing very rapid change. Major threats of forest exploitation for semi-precious wood continues. Most of forest corridor is now under mining permits. Mining halted for duration of temporary décrêt.
- **Economic Corridor:** No real development in the ‘economic corridor’ the length of the forest corridor. Improvement in some roads, but maintenance difficult. Key roads are not maintained and in fragile state. Very little new international nor national investment along the forest corridor except for ecotourism. Major increase in the number of visitors at national parks of Ranomafana and Andringitra. Social infrastructures have improved in many communes along the forest corridor (schools, health clinics). New rural credit mechanisms (TIAVO) and rural telecommunications (ie: Ikongo, Ranomafana, cell phone coverage). Trade activities increased along the FCE following investment, but then declined. But, the rural transport infrastructure is exceedingly weak.

4. Discussion

- **The Nature, Wealth and Power Analytical Framework:** The ecoregional conservation and development paradigm enjoyed 10 years of concentrated support in Fianarantsoa. This is one of the few cases in the world of concentrated investment of \$xxx million by USAID and important leveraging of funds from other donors. Yet, despite the enormous investment of funds, why does the Ranomafana – Andringitra forest corridor remain threatened? Why is its future still so problematic despite the excellent intentions of so many friends of the corridor?

The Nature, Wealth, and Power Analytical framework will be used to assess the achievements and missed opportunities encountered in operationalizing the ecoregional conservation and development paradigm for the Ranomafana – Andringitra forest corridor. The experience from Africa suggests that, “Natural resource management rests on the interaction of resource characteristics, policies, institutions, skills, and economic signals. Experience demonstrates that programs that integrate **nature** (environmental management), **wealth** (economic concerns), and **power (good governance)** have promising results.” (p. 4). Following extensive discussions

within the circles of USAID programs in Madagascar, the additional component of “health” was added to the matrix of programmatic orientations (cite date).

Nature:

3. Advancements:

- Consultative bodies: Creation of consultative bodies ranging from the AGERAS to the CMP. USAID constructed the Ecoregional Alliance to help focus and coordinate programs along the forest corridor to promote better environmental management and rural development. Numerous consultative meetings held with mayors and other stakeholders the length of the Ranomafana – Andringitra forest corridor. Efforts to set up regional offices and even sharing offices among the conservation and development organizations. Considerable effort to integrate the ecoregional vision into the Plans Régionales de Développement (PRD) and the regional work plans for the Madagascar Action Plan. USAID has invested heavily in supporting the creation of the Centre d’Appui aux Communes along the eastern side of the forest corridor. This has helped to build a sense of solidarity and common vision for development and resource management along the corridor.
- Information and Knowledge Management: Consortium of stakeholders lobbied effectively to bring in professional academic researchers through Institute de Recherche pour le Développement/CNRE; sponsored considerable field research, and worked hard to utilize data from research to affect policy orientations.
- Adaptive Management: The consultative process led to various changes in the strategic orientations for the ecoregional program. As a result of the many internal discussions, the concept of the “forest corridor” was expanded from the Ranomafana – Andringitra central corridor to the remaining forests to the north and the south. Various efforts were put in place to use the experiences gained in the central corridor – farmer-to-farmer visits, training,
- Build Capacity and Invest in Human Resources: Enormous advancements in creating a cadre of highly qualified Malagasy leaders; investments in environmental education along the forest corridor. ERI alone promoted xxx environmental activities.
- Cost-effective Technical Advisory Committees: The creation of the Comité Multilocale de Planification has been a relatively low-cost way to assure multi-stakeholder involvement in management of the vast spaces of the Fianarantsoa – Andringitra forest corridor. Periodic stakeholder meetings costs about \$10,000 each but these seminal meetings have done much to strengthen rural civil society support for the conservation and sustainable management of the forest corridor.

4. Missed Opportunities:

- Governance of the Forest Corridor: Despite the many years of investment in supporting consultative bodies, the international donor and Malagasy government have not been able to put in place governance structures for the forest corridor – an area that now sits atop 5 administrative Régions. The corridor remains at the boundary of numerous divisions – climatic, cultural, economic, divisions. No low-cost mechanism has been developed to assure the long-term viability of interregional coordination or consultative bodies like the CMP. The state remains allergic to associative structures like the CMP. While new governance structures have been proposed (ie: xxxx), central government has not approved the proposals emanating from Fianarantsoa stakeholders.
- Knowledge Management: Despite the enormous amount of biological and socioeconomic research conducted on the forest corridor, this information does not flow well into the regional and national policy making bodies. No libraries, no consistent investment in maintenance of data bases (ie: CMP). Institutional memories remain frightening short due to the inability to create depositories of information. The rapid turn-over of political and administrative leaders at the regional levels lead to tremendous losses of information.

- Breakdown of Social Compact: The 10 years of interventions of USAID and other state and donor actors have been oriented to building up the trust of local communities living along the forest corridor. The many consultative meetings and discussions with the CMP and other bodies have consistently noted the importance local level leadership places on promoting economic development along the forest corridor. Local leadership lobby for further investments in rehabilitation of roads, rehabilitation of existing irrigation systems, investment in rural communications, public health, schools, and other social investments. Now, at a moment when the NAP is being negotiated, these litanies of demands are growing loudly. Political leadership at the grassroots is noting that unless alternatives are offered to “closing” off the forest corridor, it will be impossible to create the NAP. During this period of negotiation for the NAP, investment in rural development is very limited in Fianarantsoa. FID not present, PSDR closing, USAID projects closing down, other donors are investing in “soft” contributions and not the key investments required of by local communities to assure food security.

Health:

1. *Advancements:* Family planning, potable water, malaria prevention, and hygiene are starting to reach remote communities along the forest corridor. Health facilities at the CSB are being improved in many areas along the forest corridor. Coverage of family planning along the corridor is gradually increasing, though service delivery is still quite poor. Demand is very high for family planning, but state unable to deliver efficiently. Various initiatives launched with PSI and others to promote social marketing of health services and products. MGHC, Rotary Club, and others supported by ERI launched potable water (gravity fed systems) to capture water from the forest corridor (ie: Andrambovato). These have been VERY well received. “Integrated population-health-environment” programs in Fianarantsoa are world renowned for innovation (cf. Kristen Patterson study and other consultants). Several initiatives to launch private water management systems have been launched thanks to USAID partners. Concept of private water management for forest corridor towns is now accepted. But, lack of significant private or public investment.
2. *Missed Opportunities:* Very little investment funds for infrastructure improvements in potable water. Very little investment for latrines in rural and urban communities. Funding for HIP public education and construction of latrines is very limited. Need to focus on getting more Sandplast molds out into remote rural areas and small urban communities along the forest corridor. Maintenance systems for gravity fed potable water are still very weak. Lack of capacity of Ministry of Mines and Energy to properly monitor functionality of the systems and to support private management and maintenance.

Wealth:

1. *Advancements:*
 - *Strengthen Markets and Market Incentives:* Considerable investment in trying to expand communication of price information, investment in road –to-market links, etc.
 - *Rehabilitation of Transport Infrastructures:* The USAID programs invested very seriously in the rehabilitation of the FCE railway and feeder roads after the cyclones of 2000. The initial investments led to appreciable improvements. Railroad ridership and freight increased, investment in social infrastructures improved considerably along the FCE railway. Investment by the ReCAP project in the rehabilitation of the Port of Manakara and the several feeder roads significantly improved transport. Madagascar invested heavily in the rehabilitation of key bridges on the RNT 14. Some key infrastructures are probably better than what they were 10 years ago (ie: RNT 14) and some feeder roads along the western side of the corridor.
 - *Attracting National and International Investments:* USAID programs have valiantly tried to attract conservation based enterprises interested in investing along the forest corridor. These have been in several domains – essential oils, bioenergy (jatropa), and other fields.

- *Resource Tenure Security*: The USAID programs LDI, ERI, JariAla and MIARO have invested in supporting the security of access to natural resources represented by the GELOSE and GCF co-management agreements.

2. *Missed Opportunities*:

- *Transport*: Transportation integration has not occurred as designed in the initial visions developed for the forest corridor and the province of Fianarantsoa. Collapse of FCE rehabilitation project and the mise en concession negotiations has contributed to a major economic collapse along the forest corridor. The food security and economic welfare of 300,000 people now at stake – a population that has no access to other roads. USAID did not protest vigorously the collapse of the mise en concession of the FCE. Rather, it acquiesced. Similarly, witnessing presently a breakdown of road rural users associations set up to generate funding for maintenance from FER. State has not protected the arrangements set up by the CAP project despite repeated funding and capacity building provided by LDI, PTE, and ERI. But, other roads, like the USAID Ambalavao-Namoly road, are in a very fragile state due to lack of maintenance. The infrastructures have a limited life. If they are not constantly rehabilitated, the roads, bridges, and other infrastructures will collapse.
- *Attracting international investors*: The package of incentives needed to attract international and national capital is turning out to be much more difficult to put together than previously anticipated. Despite the wide range of recommendations on actions needed to create a favorable investment climate in the regions surrounding the forest corridor, precious little have been put in place. (see Alain Pierre study).
- *Rural and Urban Energy Crisis*: lack of energy to stimulate agricultural transformation and value added. Not succeeded in developing new alternatives for attracting international investors. International donor investment for micro hydroelectric programs have taken an inordinate amount of time (ie: European union and GRET).
- *Policy Context*: National pricing policies for rice and other agricultural commodities and inputs have undermined local level farmer investment in agriculture.
- *Markets*: Markets for surplus products are still highly fragile and erratic. Demand might exist for various commodities (ie: jatropha, spices, fruits...) but production does not follow. Farmers are very distrustful of markets because of a wider range of factors. Transport infrastructures are very fragile and thus no certainty that surplus will get to the market (ie: Miananarivo, Ikongo...)
- *Tenure Security*: A growing concern about lack of tenure security on agricultural lands especially along the eastern side of the forest corridor. USAID and other donors have not been able to advance in implementing the Programme National Foncier.
- *USAID contracting restrictions*: The USAID contracting procedures have made it nearly impossible to invest in construction of infrastructures so desperately needed by local communities. Only through waivers obtained for the use of cyclone rehabilitation funds could the USAID projects build small irrigation systems, repair roads and railways, and make other investments. MOBIS rules applied to projects like ERI severely constrained opportunities to develop effective rural development programs.

Power:

- *Advancements*: Participatory platforms have been created through the CMP, the new Madagascar Action Plan structures, and the CAC. Regionalization has started, but very weak articulation of rights and responsibilities. A decline in the civil society sense of dependency on the state, a growth of confidence of rural communities to seize opportunities when presented. Donor financed projects like PSDR have advanced quickly in USAID areas of intervention because of capacity building. Rural association growth like the Koloharena movement has allowed

rural communities to capture the opportunities offered by donor programs like the FID, PSDR, Saha, and others. Growth of farmer experimentation and more effective “capturing” of new technical practices (ie: fish farming, sweet potatoes...); Regional development plans highlight the importance of the forest corridor.

- *Missed Opportunities*: Imposition of the Durban Vision and the NAP was done in a non-participatory fashion through presidential decree. The responsibility for the future of the corridor has been transferred from the collective good built up through the CMP process to the state and donor conservation organizations. The NAP has created a sense of disempowerment and perhaps has contributed to a rush to capture the remaining lowland rice fields. Transfer of rights and responsibilities through the GELOSE and GCF is not happening because the state fails to renew the expired transfers. This represents an enormous set-back to creating a co-management structure for the Fandriana – Vondrozo forest corridor. Interjection of the state to create the NAP has speeded up the process of capturing key resources within the forest corridor. State forestry service has been manipulated by power elites to grant permits. Difficult enforcement against illegal wood extraction. Funding from PE III not effective (citations). Recommendations to improve efficiency of PE III not followed. The imposition of World Bank “safeguarding” procedures has transferred further the management of the forest corridor out of the hands of local peoples into that of international bureaucrats and state authorities. The complexity of the international standards and procedures probably condemns the forest corridor to extinction because neither the political will nor the financial resources exist to carry out all the many steps required to respect the World Bank safeguards procedures. Enacting the procedures in 66 communes along the entire Fandriana – Vondrozo forest corridor will take an inordinate amount of time.

5. Conclusions et Recommendations : A 10-Point Outline for Future USAID and Donor Interventions

Can the Forest Corridor be “Saved”: The issues raised in the previous sections beg the question – can the Fandriana – Vondrozo forest corridor be saved? What is the future of the central Ranomafana – Andringitra forest corridor after 10 years of intensive conservation and development interventions by USAID and its many partners? What is the future role of the Government of Madagascar, USAID, and other donors

1. Grim Future for the Forest Corridor: The ecological future of the Fandriana – Vondrozo forest corridor is very grim. From a broad evolutionary perspective, questions are being raised about the future of the forest corridor due to climate change dynamics. Recent presentations by Conservation International and its partners suggest that the ecological structure of the forest corridor will change dramatically in the next 100 years (cf. Documentation conference...). The unpredictability of future rainfall patterns, cyclones, and other weather patterns will certainly change the behavior of agricultural populations living along the forest corridor. This is both an opportunity and a constraint.

Ecological dynamics within the forest corridor are also changing very dramatically in parts due to invasive plants (cf. Stéphanie Carrière). Even though the forest corridor is a watershed, source of biological diversity; Move into a period of ecological restoration and capturing of carbon credits for ecological restoration and avoided deforestation. State needs to articulate much more clearly commitment to the Durban Vision and creation of New Protected Areas. Lack of serious investment in other parts of the forest corridor. The conservation community has NOT articulated well the ecological reasons for maintaining the wetlands of the forest corridor. Not clear that NAP will happen. Too complex, lack of political will, and inability to obtain self-financing from Fondation pour les Aires Protégées.

The rapid expansion of mining permits, probably illegally, has added a pressure to the forest corridor. State has not fully decided what to do about the presence of mining permits. Despite the creation of the Forest-Mining Commission, the Fandriana –

Vondrozo forest corridor remains extremely vulnerable to the development of new mining concessions as well as illegal mining. National public policy remains divided on the question of if and how to balance conservation of forest cover with short-term exploitation of mining for immediate financial gain.

Demographic pressures remain very high. Invasions into the forest corridor are occurring at this time and fertility remains very high. Ten years ago, we argued that the forest corridor population would double in 20 years. It has already leapt forward in the intervening years.

2. **Building Social Fences in and along the Forest Fringes:** Governance will require a social compact between mayors and fokantany. Social compact has not been achieved because of failure to build co-management relationship for the forest corridor. State and donors have NOT been able to promote the economic development along the forest corridor nor keep key economic infrastructures operational like the FCE railway. It will be important to evaluate and renew the current GCF/GELOSE forest management agreements. Important to keep up the dialogue following the consultative process. Need to carry out the various steps ranging from developing a management plan to delineation. State must back up local communities, prosecute major economic interests illegally exploiting forest resources, ban all present and future mining within the forest corridor. Need to send out a very clear policy message. Yet, the state does not have the power nor legitimacy to use military power to protect the forest corridor. Social fences must be constructed at the commune and fokantany levels and this must be built on the certainty that economic benefits can be generated through tight management of forest corridor resources.
3. **Economic Valorization of Forest Corridor through Improved Water and Forest Management:** Promote rural electrification through capturing of water for hydroelectric power. Build on the GRET effort in Tolongoina to start up micro-hydroelectric power. Use the ITECO study and PEPSE studies. STOP all mining permits. Remove this pressure despite probable present of significant resources in gems and other precious mineral resources. Need to promote carbon sequestration for avoided deforestation. Create centers of excellence in Fianarantsoa of staff and local associations capable of earning these carbon credits for reforestation or avoided deforestation. Focus on developing capacity within Valbio or other institution.
4. **Food security and agricultural development:** Three types of agricultural development will occur. Commercially organized agricultural production along transportation axes and close to cities like Fianarantsoa, Ambalavao, Amboitra. Forced agricultural innovation will occur IF agricultural extension services continue to offer alternatives. Most likely see future development of tuber crops, rehabilitation and intensification of tanety lands. Need to continue the efforts launched by Loavasoana, LDI, and ERI programs. Major issue lack of energy flow into the agricultural system either through solar or not. Cite article by Chris Barrett and Bart Minten on general conclusions on what it takes for agricultural productivity to be enhanced.
5. **Investment in Transportation Rehabilitation and Improvement:** The protection and rehabilitation of integrated transportation systems are the building blocks of a regional economy. The government of Madagascar must continue to invest in the FCE, Port of Manakara, Canal de Pangalanes, airports, and roads, This infrastructure is so critical to reducing the pressure on natural resources. Areas of little access to roads are areas of high ecological danger. Unless farmers can generate agricultural surpluses for sale in urban markets, they will not adopt new agricultural technologies. Market integration is a key element for obtaining food security along the forest corridor. USAID should NOT invest in future conservation of the Ranomafana – Andringitra forest corridor UNLESS the government makes a firm commitment to rehabilitation of the FCE railway AND maintenance of rural feeder roads. Words alone will be insufficient. Government policy and action should seek to rebuild the initiative to privatize the railway. Unless firm actions are carried out in this domain, in the end, USAID will waste American citizen funds in investing in the conservation of the forest corridor.

6. New Commodity Streams: biofuels and ecological restoration. Promote research and development of biofuels like jatropha. Importance of generating fertilizer from seedcake that is then invested back into the agricultural system. Rehabilitation of tenancy critically important; promote mining outside of the protected area. USAID projects must invest to help rural associations, cooperatives and households take advantage of new agricultural commodities like the production and export of eels (ie: Ripple Fish in Manakara and Mananjary).
7. Inter-Regional Cooperation and Regionalization: Support true regional development. Promote capacity of regions to raise taxes, manage funds, promote investment choices and incentives. Build institutions for inter-regional collaboration on transversal questions like the future governance of the forest corridor, inter-regional transportation and energy policy, sharing of revenues from payments for ecosystem services. USAID and other donors must continue to help the regions build capacity to govern effectively. Capacity building needed in how to organize regional management teams, turn the theory of regional development plans into action, and to improve two-way flow of communication between civil society and the regional state. Very simple improvements must occur such as joining all regions into the internet age. Critically important to build and support inter-regional policy and programmatic institutions to assure advancement in transregional dossiers like the FCE railway, the Port of Manakara, hydroelectric power, and other initiatives.
8. Endogenous Rural Development through Taxation and local investment: Profiting from the sale of ecosystem services. Need transparency in local governance and monitoring of tax revenues. Promote public education in uses of tax generation for local level investment. Important to work closely with the commune authorities to implement new versions of Kaominina Mendrika so as to build public confidence that local government can play a proactive role in development. Communes can also play a key role in trying to raise funding and support for carbon credit programs for reforestation, avoided deforestation, and ecological regeneration. Provide increased funding to BIANCO so that it can help to assure transparent and honest management of the Fonds Locale de Développement, le Fonds pour le Développement Agricole and other decentralized funding sources. Long-term taxation and local investment will also hinge on building a sense of tenure security for local level investment in ecological restoration.
9. Creation of Integrated Incentives for International and National Capital Investment in the Régions: To promote international investment, must have key ingredients – rapid and efficient telecommunications system, rapid air transportation system, fiscal incentives (ie: free trade zone of agribusiness investment). Government must create incentives for small airlines to reestablish air transport to Fianarantsoa, Manakara, Mananjary... The future of the forest corridor depends on promoting employment in urban capitals through agricultural transformation industries. Need to encourage investment in strategic locations like near Manakara (ie: J&J proposal) to generate employment rather than migration to the forest corridor. Strategic regional investment for creation of growth poles along the FCE railway, the major road arteries, and the coastal zones remain a vital priority in order to reduce the threat of migration toward the soil fertility reserve of the forest corridor.
10. Corridor Monitoring: Observatoire du Corridor Fandriana – Vondrozo ought to be set up to monitor ecological and social changes along the entire length of the forest corridor. Generate rapid and accurate information about the ecological and social health. TAMS (?) forest monitoring at Ranomafana will be very important as well as on-going study by Steve Goodman and the xxx program. Socio-economic monitoring and modeling similar to the French IRD/GEM and GEREM projects should be continued, though this needs to be institutionalized. Build in socioeconomic monitoring such as with the xxxx project. Need to use this “observatoire” as a central information storage and clearing house. Tremendous loss of information. Better data base storage, web sites, or other mechanism. The ONE data base not yet used extensively.

Concluding Remarks for the Donor Community: Priority Interventions for US Government Interventions in Rural Madagascar

The future of donor funding for conservation and development is very problematic. The question remains, what is the absolute priority for future investments in and along the Fianarantsoa forest corridors? Two options exist depending on future donor and government investment flows to Fianarantsoa. If financial flows were to be high, the priorities noted in the 10 – point plan above would become the center of coordinated government – donor – private investment strategies.

- **Higher Budget Options:**

1. *Forest Corridor Interventions:* Invest in developing and strengthening governance of the new protected area of Fandriana – Vondrozo (assuming that the arête temporaire is extended). Focus on developing institutional mechanisms to “valorize” the primary forests primarily through carbon credits for avoided deforestation through private markets but also through CMD for forest restoration. Focus on strengthening the co-management of the forest corridor between COBA and the Malagasy state. Many of the key recommendations emerge out of the Theme I and II reports.
2. *Rural Development along the Forest corridor:* As noted in the previous Theme III and IV reports, focus on promoting “ecoagriculture” or agroecological adoption along the forest corridor though in the nuanced fashion expressed in the reports. The authors note the importance of investing resources in developing or rehabilitating infrastructures for the management of water and associating this with conservation of forest spaces. Multi-pronged interventions to promote food security as promoted by LDI, ERI, BAMEX, and Title II partners are indeed on the right track. The many interventions designed to improve the capacity of farmers to produce food for local, regional, and international markets do indeed lead to greater agricultural intensification and diversification. Yet, over the past 10 years agricultural development has not taken off in significant ways along the forest corridor. Why is this? None of these interventions made by USAID and its partners in the agricultural domain will succeed in the long term unless one returns to the fundamental basics of rural development – rural transport infrastructure linked to commercial markets for agricultural surplus.

As with the USAID CAP project, it may be necessary to return to the fundamental question – how can one continue to promote market oriented agricultural intensification and diversification if the donors and the state do not invest heavily in the rehabilitation and maintenance of rural transport infrastructures? Rural development linked to the provision of food security will not happen unless market incentives are allowed to flourish. But, this will not happen unless transport infrastructures are sufficiently well maintained to reduce costs of transport. Lower costs of transport for agricultural inputs needed for a viable agricultural system are vitally important but also reliable access to agricultural markets. Commodity stream development and expansion can not happen unless rural transport is better organized and maintained. Investment in rural transportation infrastructure is a necessary but insufficient pre-condition to reducing the anthropogenic pressures on the forest corridors. The wide range of interventions noted in the Nature, Wealth, Health, and Power orientations are indeed the fundamental foundations of rural development.

- **Low Budget Options:**

1. *Capacity Strengthening for Regional Decentralization:* Invest USAID finances in the maintenance of the ecoregional conservation and development vision in a context of regional “Balkanization.” Donor resources should most likely be focused on developing the capacity of the Régions to better implement regional development plans as part of the Madagascar Action Plan and put in place structures of inter-regional governance of the new protected area (COFAV). Assist the Régions to manage tax revenues and other financial flows coming into the region from the central state in order to facilitate better rural development along the Fandriana – Vondrozo forest corridor. Aid the Régions in setting up a true decentralization and devolution of power and responsibilities. Assist the 5 Régions along the forest corridor to improve management of administrative staff. Focus on strengthening the capacity of regions to play their mandated roles of coordinators of donor assistance for resource management and rural development. Precedents for this capacity building investment is in the USAID ILO and/or MISONGA projects.

2. *Capacity Building for the Koloharena Movement:* Invest in a program to monitor and support the expansion of the Koloharena farmer's movement. For the Koloharena movement, develop a program to continue to support the expansion of the farmer-to-farmer extension system in conjunction with the new Centres de Services Agricoles, the strengthening of the Maisons Koloharena demonstration and experimentation centers, and the Agricultural Supply Input centers run by the Koloharena cooperatives. Sub-contract the existing Koloharena federations to expand the provision of services in neighboring communes along the length of the Fandriana – Vondrozo forest corridor.
3. *Capacity Building for the COBA and COBA Federations forest management federations:* Invest limited resources in supporting the expansion of the COBA forest management federations. Develop a light weight program of technical assistance to continue to support the strengthening of the capacity of COBA to manage the GCF/GELOSE contracts along the Fandriana – Vondrozo forest corridor in association with the creation of the new protected area of the COFAV. Strengthen opportunities for COBA to valorize economically the forest corridor through forest restoration and capturing of carbon credits. Set up a fund whereby rural associations and federations could apply for specialized training in specific topics to support the growth of farmer animators. Utilize the models put in place by the Saha, ERI, and Title II programs. Utilize the program to assure linkages between USAID Development Credit Authority guarantees to rural credit institutions like TIAVO, EAM, and CECAM. Facilitate extension of credit to remote rural communities.
4. *Capacity Building for Communes:* The ERI Fianarantsoa and Title II partner Catholic Relief Services are learning much about how to build the capacity of mayors at the commune scale to manage public affairs. If the government program of decentralization and promotion of tax revenue generation continues, it would behoove USAID to support strongly the process of strengthening the capacity of communes to manage internal affairs. This contribution could indeed be one of the longer lasting investments in rural development and sustainable resource management – communes who can mobilize local tax revenues for local initiatives will at least develop greater opportunities for autonomous self-development.

The propositions suggested here thus focus on the questions of governance. How can USAID and other donors contribute limited funds to increase the capacity of institutions at multiple scales to improve governance?

6. Bibliographie

- Aubert, Sigrid ; Razafiarison, Serge ; Bertrand, Alain. Eds. Déforestation et Systèmes Agraires à Madagascar : Les Dynamiques des tavy sur la côte orientale. CIRAD, CITE, FOFIFA. 2003.
- Blanc-Pamard, Chantal et Rakoto Ramiarantsoa, Hervé. La Légitimité en Questions : Recompositions territoriales et politiques environnementales. Pratiques, acteurs, enjeux (Corridor Betsileo-Tanala, Madagascar). GEREM IRD-CNRE. CNRS-EHESS-CEAF Centre d'Etudes Africaines, ICOTEM Université de Poitiers. 2006.
- Blanc-Pamard, C. et Rakoto-Ramiarantsoa. H. « Normes Environnementales, transferts de gestion et recompositions territoriales en pays betsileo (Madagascar). Natures, Sciences, et Sociétés. 2007. 15. pp. 253-268.
- Carrière, Stéphanie ; Randrianasolo, Eric ; Hennenfent, Julie. 'Aires protégées et lutte contre les bioinvasions : des Objectifs antagonistes ? Le Cas de *Psidium cattleianum* Sabine (Myrtaceae) au tour du parc national de Ranomafana à Madagascar. » VertigoO, la Revue des sciences de l'environnement. No. 8, no. 1, avril 2008. pp. 1-14.
- Carrière- Buchsenschutz, Sm. M. « L'urgence d'une confirmation par la science du rôle écologique du corridor forestier de Fianarantsoa. » Etudes Rurales, 178. 2006 : pp. 181-196.
- CIRAD et al. « Le Semis Directe sur Couverture Végétale permanente à Madagascar. » Dossier no. 2. nd.
- Comité Multilocale de Planification. Monographie des Communes du Corridor. Septembre, 2003.
- Conservation International. "Global Symposium 2006 Madagascar". Antananarivo. November 2006.
- Conservation International. « RESULTATS PRELIMINAIRES DE L'ATELIER SCIENTIFIQUE DE PLANIFICATION : LE GRAND CORRIDOR FORESTIER DE LA PROVINCE DE FIANARANTSOA. » Fianarantsoa, 17 – 20 janvier 2005
- Ecoregional Alliance. « Plan d'Action Année 2006. » Ecoregional Initiatives/USAID à Fianarantsoa. Novembre 2006.
- Freudenberger, Mark S. « Fianarantsoa Regional Transport and Port of Manakara Rehabilitation Study. » Landscape Development Interventions Project/USAID. November 2001.
- Freudenberger, Karen. "Le Corridor Coincée." Landscape Development Interventions Project/USAID. Février 1999.
- Freudenberger, Karen. « Flight to the Forest : A Study of Community and Household Resource Management in the Commune of Ikongo, Madagascar." Landscape Development Interventions Project/USAID. 1999.
- Freudenberger, Karen. Droits Fonciers et propriété de l'arbre et la terre : Outils de diagnostic rapide. Rome : FAO. Foresterie communautaire. Manuel de Terrain. 1995.
- Freudenberger, Karen et Deeg Anita. « Résultats des Recherches Qualitatives. » Analyse des impacts du système ferroviaire FCE sur l'économie régionale. » Volume 3. Projet d'Appui à la Gestion de l'Environnement/IRG. Octobre 2000.
- Freudenberger, Mark S. et Freudenberger, Karen S. "Contradictions in Agricultural Intensification and Improved Resource Management: Issues in the Fianarantsoa Forest Corridor of Madagascar". Pp. 181-192. In C.B. Barrett, F. Place, and A.A. Aboud. Eds. Natural Resources Management in African Agriculture: Understanding and Improving Current Practices. New York: CABI Publishing, 2002.
- Freudenberger, Karen. Tree and Land Tenure : Using Rapid Appraisal to Study Natual Resource Management : A case study from Anivorano, Madagascar. FAO. Forests, Trees and People Programme. Community Forestry Case Study no. 10. nd.

- Goodman, Steven M. et Razafindratsita, Vololontiana R. Inventaire Biologique du Parc national de Ranomafana et du couloir forestier qui la relie au Parc National d'Andringitra. Antananarivo. Recherches pour le Développement. Série Sciences Biologiques. No., 17. 2001.
- Goodmann, Steve.
- Hockley, Neal and Andriamarovololona, Mijaso M. An economic analysis of *Transfert de Gestion* in Madagascar: are donors looking for a free lunch? Ecoregional Initiatives Program/USAID Madagascar. 2007.
- Holloway, Louise. (Goodman book)
- Husson, Olivier et Rakotondramanana. Mise au point, évaluation et diffusion des techniques agro écologiques à Madagascar. Groupement Semis Direct de Madagascar et CIRAD. Octobre 2006.
- IRD/GEREM. « Actes du Séminaire GEREM (CNRE-IRD). Novembre 2006. » Forthcoming.
- JariAla. Etude sur la consommation et la production en produits forestiers ligneux à Madagascar. Préparé pour le Ministère de l'Environnement et Eaux et Forêts par David Meyers, Bruno Ramamonjisoa, Juan Sève, Minoniaina Rajafindramanga, Christian Burren. 2007.
- Leutwiler, Hanspeter. "Visions, stratégies et suggestions pour l'électrification rurale ». ITECO et Ecoregional Initiatives USAID à Fianarantsoa. Février 2005.
- Levet, Jérôme. Etude de faisabilité d'une installation micro hydro-électrique pour la Commune Rurale de Tolongoina – Madagascar. GRET et Ecoregional Initiatives USAID Madagascar. Octobre 2006.
- Palm, Cheryl A. ; Vosti, Stephen A. Sanchez, Pedro A. ; Ericksen, Polly J. eds. Slash-and-Burn Agriculture : The Search for Alternatives. New York: Columbia University Press, 2005.
- Projet d'Appui à la Gestion de l'Environnement (PAGE/IRG). «Synthèse de l'Analyse Qualitative et l'Analyse Coût-Bénéfice. » Analyse des impacts du système ferroviaire FCE sur l'économie régionale. » Volume 1. Projet d'Appui à la Gestion de l'Environnement/IRG. Octobre 2000.
- Réseau Transfert de Gestion des Ressources Naturelles. « Rapport Auto-évaluation du Réseau Transfert de Gestion des Ressources Naturelles Renouvelables. » Mai 2005.
- Repobikan'i Madagasikara. Ministère de l'Environnement, des Eaux et Forêts. Ministère de l'Energie et des Mines. Arrêté Inerministeriel no. 16.071-2006/MINENVEF/MEM Portant Protection Temporaire de l'Aire Protégée en Création Dénommée « Corridor Forestier Fandriana – Vondrozo. » 15 septembre 2006.
- République du Madagascar. Madagascar Action Plan. 2006.
- Serpantié, Georges; Le Brozec, Erwan Coadou; Rakotsoson, Domoina; Rokotonirina, Albert, Toillier, Aurélie. "Diagnostic régional de la gestion du risqué érosive: étude autour du corridor forestier à Fianarantsoa (Madagascar). » Erosion et Gestion Conservation de l'Eau et de la Fertilité des Sols. Actes des journées Scientifiques du Réseau de Chercheurs. Editions scientifiques GB, 2006.
- Scott, James C. Weapons of the Weak: Everyday Forms of Peasant Resistance. New Haven: Yale University Press, 1985.
- Styger, Erika. Mid-Term Program Evaluation Consultancy Report of Module 3: Profitable and Environmentally Sound Farming Systems Replace Slash-and-Burn Agricultural Practices at the Landscape Scale. Ecoregional Initiatives Program/USAID Madagascar. September. 2006.

- Styger, Erika ; Rakontondramasy, Harivelo M ; Pfeffer, Max J ; Fernandes, Erick C.M.; Bates, David M. „Influence of Slash-and-Burn Farming Practices on Fallow Succession and Land Degradation in the Rainforest Region of Madagascar.” Agriculture, Ecosystems and Environment. 119 (207): 257-269.
- Thévenaut, Pierre. Situation du Mouvement Kolo Harena de la vulgarisation faite par ses membres paysans et du Programme ERI Programme. Programme ERI/USAID Madagascar. Juin. 2006.
- Tripp, Robert. « Is Low External Input Technology Contributing to Sustainable Agricultural Development.” Natural Resources Perspectives. Overseas Development Institute. No. 102. November, 2006.
- United Nations. U.N. Wire. “World Parks Congress Closes With Conservation Accord.” September, 2003.
- Voakaty Ny Ala/BEAHRs. Evaluation et analyse de la dynamique de transferts de gestion dans le corridor Ranomafana – Andringitra: Cas d’Ampatsy (GCF mise en place et suivie par LID/PTE/ERI) et Andronomiditra (GELOSE mise en place pr SAGE). Décembre 2006.
- Vosti, Stephen A., Gockowski, James, and Tomich, Thomas P. “Land Use Systems at the Margins of Tropical Moist Forest: Addressing Small-Holder Concerns in Cameroon, Indonesia, and Brazil.” In Palm, Cheryl A. ; Vosti, Stephen A. Sanchez, Pedro A. ; Ericksen, Polly J. eds. Slash-and-Burn Agriculture : The Search for Alternatives. New York: Columbia University Press, 2005.
- World Wildlife Fund. Ecoregional Action Programs: A Guide for Practitioners. Gland: 2004.
- World Wildlife Fund. Madagascar Program. “Reflexions et recommandations sur le Transfert de Gestion des Forêts à Madagascar. » 16 janvier 2005.
- Whyner, Dan. « A Descriptive Analysis of Social Indicators of Interest to LDI Fianarantsoa.” University of Michigan International Development Associate. April, 1999.