



USAID
FROM THE AMERICAN PEOPLE

PARADISE LOST?

Lessons from 25 years of USAID Environment Programs in Madagascar



Madagascar Environmental Interventions Time Line

	Mad popn	Political situation	GNI per capita and GDP Growth	# interntl visitors	Significant Policy measures	Institutional measures	USAID supported Interventions (projects > ~\$1m)				USAID funds to Madagascar		Other	
							Policy oriented Interventions	Parks and Reduce Pressures on resources	Governance	Health, Economics, Infrastructure projects	Environment, Economic Growth, DG, other ** Total p.capita % of total USAID Mad funds	Health, food aid, disaster and famine assistance** Total p.capita % of total USAID Mad funds		
1984	9,524,414	Ratsiraka	\$340 2%	12,000	Malagasy strategy for Conservation and Development adopted				PL 480 funded micro-projects					
1985	9,778,464	Ratsiraka	\$310 1%			International Conference								
1986	10,047,896	Ratsiraka	\$290 2%		1st national survey of Mad protected areas			Protected Area Management Project and Conservation Through Development at several PAs						
1987	10,332,258	Ratsiraka	\$260 1%		NEAP discussions begin with World Bank									
1988	10,631,581	Ratsiraka	\$240 3%		Fonds Forestier National									
1989	10,945,312	Ratsiraka	\$220 4%		Ranomafana Park created			DEBT for NATURE	PVO-NGO NRMS					
1990	11,272,999	Ratsiraka	\$230 3%	40,000	Madagascar Environmental Charter and NEAP become official	Creation ONE, ANAE, ANGAP					\$16.5m \$1.50 %89	\$2.1m \$0.20 %11	35% Primary school completion rate	
EP I : \$49m*	1991	11,614,758	Crisis 10 month General Strike Political instability	\$210 -6%		Multi-donor secretariat created in DC		SAVEM			\$11.3m \$1.00 %60	\$7.6m \$0.70 %40		
	1992	11,970,837		\$230 1%		Mad signs Framework Convention on Climate Change (FCC)	DEAP put in place; ONE becomes operational					\$41.8m \$3.50 %87	\$6.0m \$0.50 %13	popn growth rate 2.8%; contraceptive prevalence rate (CPR) for modern methods 5%
	1993	12,340,943		\$240 2%				KEPEM			APPROPOP	\$44.5m \$3.60 %92	\$4.0m \$0.30 %8	
	1994	12,724,636	Zafy	\$240 0%		D/G	Creation Min of Env				CAP	\$28.5m \$2.20 %88	\$3.8m \$0.30 %12	
	1995	13,121,371	Zafy	\$240 2%	78,000	Law on Foundations	Ranomafana Park Mgmt plan					\$26m \$2.00 %89	\$3.2m \$0.20 %11	
	1996	13,531,083	Zafy	\$250 2%	83,000	Banking and currency reforms GELOSE law	Tany Meva Created; ANGAP starts managing Isalo PA			RARY		\$15.1m \$1.10 %81	\$3.5m \$0.30 %19	44 Protected Areas, 1.4m ha, 2.3% total land area
EP II: \$41m +\$8.9m cyclone relief	1997	13,953,183	Ratsiraka	\$260 4%	101,000	Forestry Law	ANGAP begins managing 7 PAs; Madagascar delegation attends CITES Conference		MITA			\$14.5m \$1.00 %80	\$3.7m \$0.30 %20	Contraceptive Prevalence Rate (CPR) 10%
	1998	14,385,954	Ratsiraka	\$260 4%	121,000	Constitutional Revision; Decentralization			MIRAY	LDI		\$19.9m \$1.40 %73	\$7.5m \$0.50 %27	
	1999	14,827,223	Ratsiraka	\$250 5%	138,000	Environment/Economic Growth; MECIE (rev) adopted			PAGE			\$11.9m \$0.80 %50	\$11.9m \$0.80 %50	
	2000	15,275,362	Ratsiraka	\$250 5%	160,000	Strategy for Poverty Reduction (PSRP)	Sustainable Financing Commission			ILO		\$13.8m \$0.90 %55	\$11.5m \$0.80 %45	36% primary school completion rate
	2001	15,729,518	Ratsiraka	\$270 6%	170,000	Provincial Governors put in place: Rural Development Action Plan; Gestion Contractualisée des Forêts (GCF); Code de Gestion des Aires Protégées (COAP)	International workshop on Sustainable Financing				FCER REC P	\$15.3m \$1.00 %35	\$28.3m \$1.80 %65	
	2002	16,189,796	Crisis	\$240 -13%	62,000	Presidential decree banning fires						\$11.9m \$0.70 %38	\$19.7m \$1.20 %62	
EP III : \$33.45m	2003	16,656,727	Ravalomanana	\$290 10%	139,000	Durban Vision announced; Kyoto Protocol ratified	Durban Vision Group; Min of Env and DEF merge			MFN/ E		\$14.3m \$0.90 %35	\$26.2m \$1.60 %65	CPR 18% (27% urban, 16% rural)
	2004	17,131,317	Ravalomanana	\$300 5%	229,000	Regions created; Protected Areas Code; MECIE (2); Conservation Priority Setting exercise; Law on Foundations Revised	BIANCO created		ARIALA	MIARO	MISONGA	\$12.5m \$0.70 %34	\$24.1m \$1.40 %66	
	2005	17,614,261	Ravalomanana	\$310 5%	277,000	Madagascar ratifies Kyoto Protocol; New Forestry Policy (incl creation of regional forest commissions) SAPM ministerial Order; new Mining Code; first approval of sale of carbon credits by MoE; new Protected Areas Code; Madagascar signs MCA compact	FAPBM created			ERI		\$11.4m \$0.60 %29	\$27.4m \$1.60 %71	58% primary school completion rate
	2006	18,105,439	Ravalomanana	\$300 5%	312,000	Poverty reduction strategy paper; MAP; Forest fire management system; new Tenure Policy						\$12.7m \$0.70 %26	\$37m \$2.00 %74	
	2007	18,604,365	Ravalomanana	\$340 6%								\$9.8m \$0.50 %17	\$48.3m \$2.60 %83	Protected areas represent 3% of Madagascar's land mass with intention to double to 6% by 2012
	2008	19,110,941	Ravalomanana	\$410 7%	345,000							\$11.8m \$0.60 %21	\$43m \$2.20 %79	
	2009		Crisis		156,000									
2010														

NB Recent apparent improvements in PC income are somewhat misleading when it comes to economic growth and its impact on resource use since, as pointed out in recent World Bank documents, almost none of this income growth has been transferred to remote rural areas where there is the most agricultural pressure on forest resources; Dates are intended to indicate general flow of events and are not precise in terms of months or partial years; where policies are concerned there may be minor discrepancies depending on when law was voted and decrees were actually issued.

social and economic indicators from the World Bank quick query site.

* USAID Env/RD program funding (source L Gaylord personal communication)

** USAID funding levels are approximate and based on information provided by Barbara Dickinson (from USAID loans and grants Greenbook); They do not include \$104m of Millennium Challenge Corporation Funds (2005-2008)

Dates of laws vary due to imprecisions concerning when the law was actually voted, decrees promulgated, etc.

Project dates are approximate

USAID Projects Madagascar 1984-2009
This is a partial list of projects, focusing on those most closely related to environmental concerns

Project Initials	Project Name	Years	Focus or interventions	Implementing Partner(s)	Approximate Funding level	Funded under USAID sector or Partner	web site
	Conservation-Development Operational Program Grants	1988-1994	Test linkages between conservation and development in 4 PAs	WWF, Duke University and North Carolina State, Missouri Botanical Garden	\$4.1m	Operational Program Grants	
	Debt-for-Nature	1989-2002	Training nature protection agents; forest management transfers	WWF	\$2.5m from USAID	Debt for Nature	
PVO-NGO NRMS	Natural Resources Management Support	1989-1995	Reinforce NGO capacity	World Learning, CARE, WWF	\$.21m (for Madagascar)	centrally funded (NGO/PVO-NRMS)	
SAVEM	Sustainable Approaches to Viable Environmental Management	1991-2000	National Park Management, strengthen ANGAP, ICDPs around 7 PAs	TRD (Institutional support to ANGAP), PACT with major subgrants (ICDP) to WWF, VITA, CARE, SUNY-Stonybrook, CI, ANGAP	\$26.6m + \$13.4m	Contract and cooperative agreement	www.pactworld.org/cs/savem
KEPEM	Knowledge and Effective Policies for Environmental Management	1993-1997 (implementation delayed by the political crisis)	Policy and Institutional strengthening : ONE	ARD	\$33m (non-project assistance) + \$9m project assistance	Contract, budget support to GoM	
TRADEM		1991-1995	Commercialization of natural resource products		~\$0.5m	Agriculture and NRO	
APPROPOP	Madagascar Population Support Project	1993-98	family planning support around ICDPs	Management Sciences for Health		Health	
CAP	Commercial Agriculture Promotion Project	1994-1999	Economic growth poles	Chemonics International	\$24.2m	Economic Growth Contract	
MITA (PEI-PEII Transition Project)	Managing Innovative Transitions in Agreement	1997-1998	Support for ANGAP decentralization	PACT/Forest Management Trust	\$3m	Environment/RD cooperative agreement	
RARY	Rary means "to weave" in Malagasy	1996-2000	Public debate of complex economic and social policy questions	PACT	???	Governance	www.pactworld.org/cs/rary
MIRAY	Miray means "to be united" in Malagasy	1998-2004	Develop national capacity to manage protected areas	PACT, WWF, CI	\$12.3m		www.pactworld.org/cs/miray
JSI	Jireo Salama Isika	1999-2003	child survival, nutrition, STD, family planning at the community and service delivery level	John Snow International Research and Training	\$16.8m	Health	
LDI (followed by PTE during the transition to ERI)	Landscape Development Interventions	1998-2004	Eco-regional activities to conserve the forest corridors and improve the well-being of farmers living near those corridors	Chemonics International	\$22m	Environment-Rural Development	
PAGE	Environmental Management Support Project	1999-2002	Environmental policy and institutional strengthening	IRG/Winrock, Harvard Insitute for International Development	\$6.2m	EPIQ	
EHP II	Environmental Health Project	1999-2004	monitoring and evaluation of linked interventions in the field	AED	\$1.2m	USAID/Washington Global Health Bureau	
ILO	Ilo means "light" in Malagasy	2000-2003	Capacity building for civil society	PACT, Cornell	\$2.4m (governance) + \$.57m (election monitoring)	D/G Cooperative Agreement	www.pactworld.org/cs/ilo
MGHC	Malagasy Green and Healthy Communities	2001-2007	Supported Malagasy NGO Vohary Salama; worked on health, population, environment, and income generation activities	John Snow International Research and Training	\$728,000	Packard Foundation	www.voharysalama.org
FCER	FCE Railway Rehabilitation	2001-2005	Rehabilitate the FCE railway after 2000 cyclones	Chemonics International	\$4.7m	Supplemental cyclone funds	
RECAP	Rehabilitate CAP roads (roads built by the CAP project)	2001-2005	Rehabilitate farm to market roads in LDI intervention areas after 2000 cyclones	Chemonics International	\$5.5m	Supplemental cyclone funds	
BAMEX	Business and Market Expansion	2004-2008	Economic benefits and value chains	Chemonics International	\$5.3m	Environment/Economic Growth MOBIS	
ERI	Eco-Regional Initiatives	2004-2009	Eco-regional activities to conserve the forest corridors and improve the well-being of farmers living near those corridors	DAI	\$2.0m	Environment/RD MOBIS	
SanteNet I	Health Network	2004-2008	Increasing demand, availability, and quality of select health and FP products and services (cte and national level)	Chemonics International	16.5m	Health Contract	
QMM-USAID GDA (LARO)	Linking Actors Regional Opportunities	2003-2005-2008	Program to mitigate negative social and environmental consequences of the Qitfer mine	PACT, PSI, CARE	\$3m QMM; \$3m USAID	Joint funding Qitfer/USAID central funding	
EMI	Extra Mile initiative	2005-2008	Increase remote rural community (including those adjacent to threatened forests) access to FP	CARE, JSI, R&T	\$225,000	Health Central Funding	
Menabe	Menabe Biodiversity Corridor	2003-2010	Build forest connectivity through management and revenue-generating incentives including eco-tourism	CI	\$3m ??	Cooperative Agreement through Biodiversity Corridor Planning and Implementation Program	
MIARO	Protect (in Malagasy)	2004-2009	Expansion of Protected Area Network through co-management	CI, with subgrants to WCS, WWF, ANGAP	\$6.3m	Environment/RD Cooperative Agreement	
Jariala	Forest Management (in Malagasy)	2004-2009	Policy and Institutional support (esp reform of DGEF)	IRG	\$12.2m	Environment/RD contract	www.jariala.org
MISONGA	Managing Information and Strengthening Organizations for Networked Governance Approaches	2004-2006 (ended 2 years early when money ran out)	promote civil society, improve information flows between citizenry and government, improve government responsiveness, reduce corruption	PACT, CRS	\$8.2m initially	Environment/RD and D/G funding	www.pactworld.org/cs/misonga
VARI	Utilizing small-scale irrigation systems for household and market-oriented agricultural production in Anosy Region	2006-2009	Farmer to farmer extension, technical assistance for water management and farming systems	CARE	\$.59m	Cooperative Agreement	
VAHATRA	Laying Foundation for Strong Local Governance and Livelihoods Security	2007-2009	Build commune capacity around a shared watershed, with attention on improving environment, food security and livelihood situations.	CRS	\$.19m	Cooperative Agreement	

In 2005, Madagascar signed a compact with MCA for a \$110m project over four years. The three focus areas were : land tenure reform, financial sector reform, and agricultural business development. The program was terminated in 2009 due to the political crisis.

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DISCLAIMER

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FOREWORD

As my three years in Madagascar draw to a close, I am experiencing a mixture of emotions, ranging from hope to despair. I vividly recall how I felt coming here in 2007, full of optimism and excitement about great possibilities for Madagascar, after too many years of missed opportunities for prosperity, progress, growth, and development. I came with a particular enthusiasm for the apparent dawning of a new age of protecting and appreciating Madagascar's unparalleled biodiversity, and I was particularly eager to contribute to that momentum. Indeed, many different considerations brought me to Madagascar, but none was stronger than my desire to contribute to safeguarding the Grand Isle's irreplaceable environmental treasure chest.

Today, after months of unexpected turmoil and crisis, I still maintain hope that Madagascar will soon see a return to political stability and constitutional order. This is necessary for the sake of the long-suffering Malagasy people, and it is also necessary for the security of Madagascar's once again threatened environment. These resurgent environmental threats constitute a full-blown "crisis within a crisis," one that threatens Madagascar's long-term prosperity and viability at least as much as the surrounding political crisis. The world needs to pay attention to both, before Madagascar goes the way of Easter Island, Haiti, and other fragile, unique island environments already destroyed by mankind.

My friend Karen Freudenberger has done a monumental job capturing in this document the complex, rich and important work of USAID over the last 25 years. Insights from her many years living and working in Madagascar are evident throughout this report. The achievements -- and the shortcomings -- of the programs supported by the U.S. government are important ones to reflect upon. I hope that donors, partners and policy-makers, international and Malagasy, will ruminate on the lessons, questions and suggestions offered in this study, in order to transform future efforts into richer, deeper, and more durable successes.

Anyone who reads this document will see that there is still so much more work to be done. They will also see that while we have made some gains over the years, they have been fragile. Often, these "successes" have constituted the mere slowing of destructive processes, rather than their permanent reversal. So we are very far from winning this critical battle to secure productive natural resources and our globally important heritage. International NGOs, local civil society organizations, civil servants and communities have continued to push forward and support the cause of healthy and sustainable management of Madagascar's wonderfully important natural resources despite the temporary suspension of donor support, an evident lack of political will, and increasingly difficult circumstances. They are to be lauded for their persistence and dedication. But they need significantly more help.

Since the coup d'état in March 2009, biodiversity-rich sites and the local communities that are dependent upon them have been under attack by unscrupulous profiteers seeking to take advantage of a general breakdown in law and order and other governance systems to extract the country's natural resources, particularly its precious hardwoods and minerals. While not new, this illegal logging has now reached unprecedented levels, with reports indicating that nearly 7000 cubic meters per month -- or approximately 400 trees per day -- are being cut in some regions. I am told that the problem is at least 20-fold more acute than ever before.

And where there is illegal logging, there are other illegal activities. Threatened animals, including several particularly endangered species of rare lemurs and tortoises, are being captured for export and for food at rates that ensure their extinction in the wild, unless this trend can be reversed.

These plants and wildlife are found nowhere else on earth. Profits reaching local poachers and foresters amount to mere pennies on every dollar, and the total value of lost resources is far inferior to the cost of restoring them. Furthermore, monies gained from these illegal activities are laundered through Madagascar's financial systems, further undermining local and national economies and integrity.

We ALL need to recognize that Madagascar is being mined to death, not just for minerals but for every resource found here. As Prince Phillip said famously 25 years ago, "Madagascar is committing national suicide." Sadly, this is as true today as it was then, just as USAID started its pioneering path toward heightened environmental awareness and political engagement in support of sustainable development here.

If continued unchecked, the current level of unsustainable resource extraction and environmental degradation will undermine post-conflict recovery and future economic growth potential for the country. This ultimately will exacerbate poverty and food insecurity for the growing population and accelerate the irreversible loss of biodiversity so unique to Madagascar. The ongoing illegal logging and mineral extraction for export may significantly limit options for future development in agriculture, forestry, mining, and tourism, all key to promoting and achieving economic stability and sustainability in the country.

Additionally, the ability of forests to serve their essential functions of water retention and filtration is being impacted. There are important implications of these ecosystem services on an island where nearly half of the population obtains water from surface water sources, and only 23 percent of the population has access to clean drinking water. The immediate erosion of forests leads to sedimentation of rivers and streams. And, as downstream siltation of rice and other agricultural fields becomes more severe, the livelihoods and nutrition of Malagasy people are threatened.

The outlook for the near future is increasingly somber. The Malagasy people have difficult choices to make to secure for themselves a more stable future. It will take courage and commitment to break the current state of inertia. It will take vision, dedication, selflessness, and a commitment to good governance to map a sustainable future for not only a select few, but for the Malagasy nation as a whole.

In spite of all these daunting challenges, I am encouraged to see that in many rural communities where USAID and others have worked for years, the local populations themselves are stepping up to defend their surrounding environment: they know more than anyone what is at stake. I am further encouraged to see the strengthening of Malagasy civil society working in an organized fashion for the environment: this was unknown here a quarter century ago, and is another important gain to build upon. The U.S. government, primarily through USAID, has stood by the Malagasy people with its humanitarian programs throughout this latest crisis. We also stand ready to resume our historic support for programs that secure a healthy Malagasy environment for the benefit of its people. If we can restart these programs soon, perhaps it will not be too late. But this, in turn, will depend on progress agreed to by Malagasy political leaders – progress that has been sadly slow in coming.

Niels Marquardt, US Ambassador to Madagascar, 2007-2010

PREFACE

This is an opportunity I wish had not been presented to us. Following Madagascar's unconstitutional change in government in March 2009, USAID foreign assistance to Madagascar was thrown into limbo resulting ultimately in the suspension of our environmental programs in Madagascar.

At the time, some existing agreements and contracts were reaching their natural conclusion and USAID was in the process of launching a fresh set of initiatives with traditional and new partners. The Bureau for Africa under the Biodiversity Analysis and Technical Support (BATS) program had recently completed an Environmental Threats and Opportunities Assessment as part of a year-long reflection between USAID and its partners. This process culminated in a national stocktaking workshop in August 2008.

Absent the suspension, the next generation of USAID support to the conservation of biodiversity in Madagascar was poised to begin. Instead, because of the suspension, it was incumbent on us to gather our experience before people, products, and partnerships were dissipated to the four winds. The purpose of this assignment was to conduct a 25-year retrospective of USAID support to the conservation of biological diversity in Madagascar; assess the current situation, and help launch a wider discussion of how USAID might respond when and if the ability to re-engage with Madagascar presents itself.

BATS has taken a lead role in reviewing USAID's conservation experience in Africa, understanding lessons learned, and charting the way forward. Reports to date include: Protecting Hard-won Ground: USAID Experience and Prospects for Biodiversity Conservation in Africa; USAID Support to the Community-based Natural Resource Management Program in Namibia: LIFE Program Review, and A Vision for the Future of Biodiversity in Africa. This paper is the most recent product in that series.

USAID recently decided to more systematically assess the impact of its programs and to make that information more broadly available. Such transparency will facilitate exchanges of information and allow us to learn from one another. This effort precedes that commitment but is fully consistent with it.

International Resources Group (IRG) was one of our implementing partners in Madagascar, leading the 2004-2009 effort in policy and institutional support. As such, it is well qualified to lead the study. Karen Freudenberger, author of the study, has long and diverse experience in Madagascar and in the rest of the world. A specialist in participatory research, her interviewing and research skills will be quickly apparent to the reader. The first draft was presented to a workshop in Washington, DC, where a wide variety of people currently or historically active in Madagascar participated. A later draft was reviewed by an even larger community of practitioners.

I am proud to present this paper to you.

Tim Resch, Bureau Environmental Advisor
USAID Bureau for Africa, Office of Sustainable Development

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Just as USAID's work in Madagascar has been the result of a massive collaborative effort, so also has my attempt to capture the results of that effort depended on many generous collaborators. My apologies, first and foremost, to the many people I was not able to contact in the course of this research, and particularly the enormous number of Malagasy colleagues who have contributed so mightily to this cause but were not easy to find from my current perch in Vermont. Please do not feel slighted and be assured that I thought of you every day as I struggled with this document and gained inspiration from your devotion and continued efforts.

To those the world over who did answer my call for help at various points, I offer you my heartfelt thanks. And double thanks to those many who answered my emails within a day or two, demonstrating their still active concern and interest. As I will point out in the text, the Madagascar environment program benefited from an extraordinary depth of commitment and collaboration. Many who worked on the program over the years helped in the preparation and review of this document, which would not have been possible as a solitary venture. I hope I will not miss any of you, as I cite the long list of helpful contributors: Andy Keck, Ashley Marcus, Asif Shaikh, Carlos Gallegos, Christian Burren, Christian Kull, Daniela Raik, Doreen Robinson, Derick Brinkerhoff, Erika Styger, Frank Hawkins, George Carner, John Pielemeier, Jean Michel Dufils, Jean Solo Ratsisompatrarivo, Jennifer Talbot, Julia Jones, Heather D'Agnes, Kristin Patterson, Leon Rajaobelina, Lisa Steele, Lynne Gaffikin, Marie de Longcamp, Michael Brown, Nanie Ratsifandrihamanana, Nirinjaka Ramasinjatovo, Martin Nicoll, Matt Sommerville, Michael Brown, Oliver Pierson, Paul Ferraro, Paul Porteous, Philip DeCosse, Richard Carroll, Richard Marcus, Steve Dennison, Tiana Razafimahatratra, Todd Johnson, Tim Resch, Tom Erdmann, and Tony Pryor.

In addition, a workshop in Washington early in the writing process allowed numerous people to provide guidance. In addition to many of those named above, the following people participated in that workshop and I thank them for their time and valuable input: Richard Carroll, David Isaak, Jaime Cavelier, Steve Watkins, Matthew Edwardsen, Jason Ko, Terri Lukas, Natalie Bailey, Luke Kozumbo, Doug Clark, and David Hess.

Among those I must single out for particular thanks is Lisa Gaylord who was extraordinarily generous in answering all of my questions, at all hours of day and night, and yet let the story (which is in many ways her story) unfold without interference or attempts to influence its direction. Few who worked on Madagascar's environment program did not at one time or another spend an evening (or many) at Lisa's house, struggling with issues from the mundane to the monumental. This paper might be considered the culmination of those discussions, or perhaps a palate refresher before the next round.

I am also grateful to Mark and Annika Freudenberger who tolerated endless dinner time musings as they helped me get the ideas sorted out.

Thank you all for caring enough to help me make this document as good and as accurate as I could.

Having said that, it will never be good enough or accurate enough. The job was immense, the story complex, and the time and pages available far too limited to do it justice. At a certain point, I have to decide that we'd said enough, have to count on the wisdom of readers to delve deeper and further, and have to hope that continuing discussions will set the record straight. The errors of fact and judgment that remain in spite of our collective best efforts are, regrettably, my own and I apologize for them.

LIST OF ACRONYMS

AGEX	Agences d'Exécution (Implementing agencies, including ONE, ANGAP, etc.)
AGERAS	Appui à la Gestion Régionalisée de l'Environnement et à l'Approche Spatiale (Support to Landscape Ecology Approach)
ANAE	Association Nationale d'Action Environnementale (National Association for Environmental Action)
ANGAP	Association Nationale pour le Gestion des Aires Protégées (National Association for the Management of Protected Areas)
ANGEF	Association Nationale pour la Gestion des Forêts (National Association for the Management of Forests)
APN	Agents for the Protection of Nature
ARD	Associates in Rural Development
ARSIE	Association du Réseau Système d'Information Environnemental (Environmental Information system Network Association)
BAMEX	Business and Market Expansion (USAID project)
CAP	Commercial Agriculture Project
CBNRM	Community-based Natural Resource Management
CC PTE	Cercle de Concertation – Partenaires Techniques et Financiers – Environnement
CELCO	Coordination Unit (under the Ministry of Environment/DEF)
CI	Conservation International
CIM	Comité Interministériel pour l'Environnement (Interministerial Committee for the Environment)
CLB	Communauté Locale de Base
COAP	Code des Aires Protégés (Protected Area Management Legislative Code)
COBA	Communauté de Base (Grass-roots Community)
COMODE	Conseil Malgache des Organisations Non-Gouvernementales pour le Développement (Malagasy Council of NGOs)
CMP	Comité Multi-local de Planification (Local Planning Committee)

CRD	Comité Régional de Développement (Regional Development Committee)
CRS	Catholic Relief Services
CSLCC	President's Council to Fight Corruption
DAI	Development Alternatives, Inc.
DEAP	Droits d'Entrée dans les Aires Protégés (Protected Area entrance fee)
DEF	Direction des Eaux et Forêts (Malagasy Water and Forestry Service)
DfN	Debt for Nature
DG	Democracy and Governance
DSRP	Document Stratégique sur la Réduction de Pauvreté (Strategic Document for Poverty Reduction)
EG	Economic Growth
EIA	Environmental Impact Assessment
ENV/RD	Environment and Rural Development
EP	Environment Program
EPA	Administrative Public Entity
EPIQ	Environmental Policy and Institutional Strengthening Indefinite Quantity Contract
ERI	Eco-regional Initiatives (USAID project)
ETOA	Environmental Threats and Opportunities Assessment
ETP	Ecology Training Program
EU	European Union
FAPBM	Fund for Protected Areas and Biodiversity in Madagascar
FAO	Food and Agricultural Organization of the United Nations
FCE	Fianarantsoa Côte Est Railway
FCER	FCE Railway Rehabilitation Project (USAID project)
FER	Fonds d'Entretien Routière (Road Maintenance Fund)
FFN	Fonds Forestier National (National Forestry Fund)
GBF	Groupe de Bailleurs de Fonds (Donors Group)

GCF	Gestion Contractualisée Forestière (Forest Management Contract)
GDA	Global Development Alliance
GEF	Global Environment Facility
GELOSE	Gestion Local Sécurisée (Secured Local Management)
GIS	Geographic Information System
GNP	Gross National Product
GoM	Government of Madagascar
GPS	Global Positioning System
GRAP	Plan de Gestion du Réseau des Aires Protégées (Management Plan for Protected Areas)
GTZ	Gesellschaft für Technische Zusammenarbeit (German Government corporation for international development)
ha	hectares
HAT	Haute autorité de la transition (High Transitional Authority)
ICDP	Integrated Conservation and Development Project
IFAD	International Fund for Agricultural Development
IFC	International Finance Corporation
IMF	International Monetary Fund
INSTAT	Institut National de la Statistique (National Institute of Statistics)
IRG	International Resources Group
IUCN	International Union for the Conservation of Nature
JSI	Jereo Isika Salama (USAID health project)
JSI	John Snow International (project implementer)
LARO	Linking Actor for Regional Development Opportunity (component of SAVEM project)
KEPEM	Knowledge and Effective Policies for Environmental Management
LDI	Landscape Development Interventions
MITA	Managing Innovative Transitions in Agreement (USAID project)
MAP	Madagascar Action Plan

MCA	Millennium Challenge Account
MCC	Millennium Challenge Corporation
MECIE	Mise en Compatibilité des Investissements avec l'Environnement
MIARO	Biodiversity Conservation Project (USAID project)
MISONGA	Managing Information and Strengthening Organizations for Network Governance Approach (USAID Project)
MinEnv	Ministère de l'Environnement (Ministry of Environment)
MRPA	Managed Resource Protected Areas
NEAP	National Environmental Action Plan
NGO	Non-governmental Organization
NHWP	Nature, Health, Wealth, and Power
NRM	Natural Resource Management
NWP	Nature, Wealth, and Power
ONE	Office Nationale de l'Environnement (National Environment Office)
PA	Protected Area
PASA	Participating Agencies Service Agreement
PACT	Private Agencies Collaborating Together
PAGE	Projet d'Appui à la Gestion de l'Environnement (USAID Project)
PFNSCM	Plate-forme Nationale de la Société Civile Malgache (National Platform for Malagasy Civil Society)
PTE	Programme de Transition Eco-régional (USAID Project)
PVO-NGO NRMS	Private Voluntary Organization-Non-governmental Organization Natural Resource Management
PVO	Private Voluntary Organization
QMM	QIT-Fer Minerals Madagascar
REBIOMA	Réseau de biodiversité de Madagascar
REDD	Reducing Emissions from Deforestation and Degradation
SAGE	Service d'Appui à la Gestion Environnementale
SAPM	Système des Aires Protégées (System of Protected Areas)

SAVEM	Sustainable Approaches for Viable Environmental Management (USAID Project)
SO	Strategic Objective
SRI	System of Rice Intensification
SUNY	State University of New York
TR&D	Tropic Research and Development
UNDP	United Nations Development Program
UNFCCC	United Nations Framework Convention on Climate Change
USAID	U.S. Agency for International Development
USFS	U.S. Forest Service
VCS	Voluntary Carbon Standard
WB	World Bank
WCS	Wildlife Conservation Society
WWF	World Wildlife Fund / World Wide Fund for Nature
ZIE	Zone d'Intérêt Eco-touristique (Eco-tourism Development Zone)

EXECUTIVE SUMMARY

The U.S. Agency for International Development (USAID) opened its Madagascar Mission in 1984 and rapidly became one of the principal actors in developing and implementing the three Environmental Programs (EPs) that operationalized the 1990 National Environmental Action Plan (NEAP). This retrospective is written 25 years later (with the Environmental Program suspended due to the 2009 coup d'état) to take stock of where we have come in efforts to save Madagascar's threatened natural resources and to set the stage for discussions regarding future program directions. The paper focuses specifically on USAID's environmental programs, while recognizing that USAID interventions took place in a context that involved many different partners.

When USAID opened its doors in Madagascar, the country was coming out of a decade of serious economic stagnation and environmental decline (some 400,000 hectares (ha) of forest were lost each year). The NEAP sought to protect Madagascar's biodiversity heritage (which meant, in practice, saving the forests on which the biodiversity depended) and to improve the living conditions of the population.

Slash-and-burn agriculture by very poor farmers is one of the primary threats to Madagascar's forests. As such, it was recognized early on that there was little hope of protecting forests without also addressing (1) fundamental economic issues that maintain rural people in abject poverty and (2) rapid population growth (close to 3% a year) that has caused Madagascar's population to more than double in the roughly 25 years covered by this paper. Consequently, USAID's program has consistently promoted synergies between the health and environment sectors. (The Madagascar population-environment program is a worldwide model for this approach.)

USAID's programs have, in principle, mirrored the NEAP emphasis on linking environmental conservation and improved livelihoods. In the first decade (1984 to 1994), USAID had robust funding and strong economic and agricultural programs that complemented work on the environment and social services. In 1994, after Madagascar failed to meet its structural adjustment commitments, the Mission was demoted and suffered major funding cuts to nearly all programs except health and population.

Environmental programs in Madagascar were spared only because of the Congressional biodiversity earmark. The earmark has been instrumental in assuring continued funding for the environment but has at the same time reinforced a relatively narrow biodiversity focus. In the absence of other funds, the Madagascar program has faced consistent difficulties in addressing complementary issues such as agriculture and economic growth. While transformation of Madagascar's economy might well have been impossible even with more robust agricultural and economic development funding, there can be no doubt that success on the environment front has been constrained by broader economic development failure, particularly in Madagascar's rural areas.

USAID's environment programs in Madagascar roughly followed the three phases of the national Environment Programs. EP I (1991-1996) funding totaled some \$49 million. Programs focused on (1) making the newly established Protected Areas (PAs) work and (2) establishing the foundations for environmental management through institutional strengthening and human resource development. The key national environment sector institutions (The National Environment Office, or ONE, and National Association for the Management of Protected Areas, or ANGAP) were established and closely mentored during this phase. The largest project was an Integrated Conservation and Development Project (ICDP) that funded social and economic development activities in communities adjacent to seven national parks.

Evaluations highlighting the limitations of the ICDP approach (both in Madagascar and elsewhere in the world) led to a paradigm shift in thinking toward the eco-regional approach that characterized project interventions in EP II (1997-2002) and EP III (2003-2008). These projects focused on identifying systemic threats to natural resources over larger landscapes (specifically focusing on alternatives to slash-and-burn agriculture), while policy interventions continued to address institutional weaknesses and the legal framework needed to implement sustainable resource management. Throughout the program's history, there have been efforts to increase civil society capacity and improve governance.

This paper reviews progress and challenges in four domains: Policy and Institutions, Protected Areas, Reducing Pressures on Resources by Surrounding Communities, and Economic Valorization of Natural Resources.

On the **Policy and Institutions** front, there has been major progress in promulgating legislation needed to improve management of natural resources, and developing the tools needed to operationalize improved management. Legal frameworks for forest management, environmental impact assessment, and co-management of forest resources are among the notable advances in the policy domain. Similarly, semi-autonomous institutions to manage the national parks and coordinate environmental activities were established and trained. Much effort has gone into assuring sustainable financing for the national park system and local environment interventions through the creation of two endowed foundations. The endowments are not yet fully funded, but they are well on the way.

While the legal framework and the toolkit to implement the environmental laws are now relatively complete, the effective use of these tools continues to be hampered by notoriously weak and corrupt government structures.

Protected Areas. Madagascar has had an ambitious national park system since colonial times but at the start of EP I, there were only two publicly accessible parks. Lack of capacity at the Water and Forestry Service (DEF) had created a de facto open access situation and many protected areas were being deforested at an alarming rate. The creation of ANGAP (later renamed Madagascar National Parks) and partnerships with international operators reestablished an effective park system. By EP II, day-to-day park management responsibilities had largely been transferred to Madagascar National Parks.

In 2003, President Marc Ravalomanana announced at the International Union for Conservation of Nature (IUCN) conference in Durban that 6 million hectares would be put under protected area status. This dramatic move – known as the Durban Vision – spearheaded by the international conservation organizations, increased the area under protection from 3% to 10% of the country's land. While this program is still being implemented, there is widespread concern that the speed of implementation and belated attention to concerns of local communities has created a backlash of resentments that will be difficult to overcome.

Initial experiences with co-management (local communities and the State) of natural forests were already underway, but the Durban Vision announcement accelerated the transfer of management responsibilities from the State (which lacks capacity to carry out the task) to local communities. Somewhat less than half the 6 million ha under protected area status will be under the authority of Madagascar National Parks, while the rest will be under some sort of co-management agreement with either local communities or the private sector. While State management of these huge protected areas is clearly not feasible under current Malagasy conditions, co-management has also proved to be problematic, especially when economic benefits turn out to be less than what the community expects or are perceived to be insufficient compensation for foregoing traditional slash-and-burn agriculture.

Reducing Pressures on Resources by Surrounding Communities. While logging and harvesting for fuelwood continue to motivate serious deforestation in some areas of the country, slash-and-burn agriculture remains the biggest source of forest transformation nationwide. USAID programs have invested significant efforts to reduce these pressures in selected biodiversity conservation areas. A range of alternative agricultural practices have been proposed and, while there has been significant variation in adoption rates, deforestation rates in the areas where project activities have been most intense have declined. Nevertheless, these projects recognize that farm level interventions are insufficient to effectuate changes in production practices at the scale needed to save Madagascar's forests. Without improved infrastructures (transport and irrigation) and national economic policies that promote rural development, there is little chance of persuading farmers to abandon unsustainable subsistence agriculture practices.

Several USAID initiatives have focused on **valorizing natural resources**. Some efforts have been devoted to improving eco-tourism ventures and markets for natural products. While both show potential, the magnitude of benefits will ultimately depend on larger economic factors and the State's ability to control negative impacts. USAID projects have also worked with the government to designate significant forest areas as sustainable production zones, usually under private (sometimes community) management. It is estimated that at least 2 million ha are needed to assure domestic requirements for fuel and building wood (to date, about a third of this area has been so designated by the Ministry of Environment). While there have been major advances in preparing the technical and administrative approaches to implementing sustainable production zones, actual contracting has been slow and only a tiny proportion of the sites have actually been tendered. It is thus too early to assess the success of this approach.

This retrospective concludes that in spite of numerous project successes, Madagascar's environment is in significantly worse shape now than it was 25 years ago. In 1990, Madagascar had about 11 million ha of forest and 11 million people. Today the country has about 9 million ha of forest and 20 million people. Forest clearing has slowed (from about 0.83% annually between 1990-2000 to 0.53% annually since 2000) but more than a million hectares of forest were lost in the 15 years between 1990 and 2005. Furthermore, the remaining forests have become increasingly vulnerable: 80% of Madagascar's forests are now located within 1 km of a non-forest edge.

The reasons for this are humbling in their magnitude and complexity. (Anyone who tells you that they have an easy answer to Madagascar's environmental problems should be immediately suspect, a caution necessary because Madagascar seems to be a magnet for people who think they have the "magic bullet.") **Not-good-enough governance** is without doubt a factor that underlies all others. Systemic corruption, crises that have become a normal part of the political landscape, and short-term resource management strategies that benefit transient leaders but not the population at large are pernicious characteristics that persist through changes of government. These governance issues have insidious effects that make it difficult, if not impossible, to create the economic conditions necessary to scale up promising environmental interventions (e.g. sustainable improvements in infrastructure, implementation of rice pricing, and other policies favorable to the rural economy). In the end, environmental preservation is hostage to economic development and economic development is hostage to good governance.

We are now at a point where time is running out for the prized biodiversity Madagascar holds in its charge. This report's final section lays out three broad options – scenarios – for future interventions. It is purposefully provocative in an attempt to open up the debate and lay out issues that may otherwise be neglected in a more conventional "stay-the-course" strategy.

Scenario 1: Forget it; it's already too late and nothing we can realistically do will save Madagascar's remaining forest resources. This scenario proposes that USAID invest its scarce resources somewhere else where the context is more favorable to a positive and sustainable outcome.

Scenario 2: Keep on track – Do more of the same, but do it better. This scenario proposes reprioritizing USAID intervention areas to identify those where we anticipate having the greatest impact, adding significantly more resources with assurances that funding will continue for at least another 20 years, and developing a program around the best practices that have been identified up until now (but with more sustained attention to economic growth and the promotion of civil society institutions).

Scenario 3: Madagascar's biodiversity ends justify the means – Break all the rules and go for it. This scenario essentially recognizes that the international community values Madagascar's biodiversity far more highly than do its government and its people. We must therefore be prepared to pay for its protection. This approach would require a massive commitment of international aid into the distant future. Funds would be used for direct payments to communities that forego activities harmful to the environment and to fund infrastructure, education, and other structural factors as needed to help the economy transform and develop. The demands of this approach would far surpass USAID's capacity, but the agency might play a useful role in conceptualizing the approach and, perhaps, implementing a discrete set of activities as needed to maintain its presence at the table.

INTRODUCTION

A hectare of forest lost in Madagascar has a greater negative impact on global biodiversity than a hectare of forest lost virtually anywhere else on earth (U.S. Forest Service).¹

Concerted efforts² to save Madagascar's natural forests³ began in the mid 1980s when Madagascar and its partners began preparing the first Madagascar National Environmental Action Plan (NEAP).



Madagascar's biodiversity is unique: 98% of its mammals, 91% of its reptiles, and 80% of its flowering plants are found nowhere else on earth. (Photo credit: Karen Freudenberger)

The U.S. Agency for International Development (USAID) opened its Madagascar Mission in 1984 and rapidly became one of the principal actors in developing and implementing the three successive Environmental Programs (EPs). Twenty-five years later, this paper takes a step back to look at challenges encountered, actions implemented, lessons learned, and progress made towards conservation and development goals. This retrospective is being written in the midst of the third political crisis since the USAID Mission opened (the fourth since Madagascar gained independence). With USAID's Environmental Program currently suspended, we first review the road(s) taken to get us to where we are today before looking at potential paths into the future.

Work toward the objectives of the NEAP has involved uncountable numbers of actors, both Malagasy and international. This retrospective focuses explicitly on USAID-funded interventions with the idea of recording the evolution of this grand and visionary experiment

and learning some of its key lessons. The focus on USAID's effort does not mean to belittle the interventions of other participants; indeed the commendably collaborative nature of the venture makes it impossible in most cases to attribute either results or blame to particular actors. Progress, elusive as it is, must be celebrated regardless of its source and we must forthrightly acknowledge our collective disappointments in order to learn their lessons.

Even for those of us who were present at or near the inception of this effort, it is stunning to recall how much we didn't know and how much had not yet happened a mere 25 years ago. Madagascar had only two, barely accessible, national parks open to the public and 12,000 international visitors

1 <http://www.fs.fed.us/global/globe/africa/madagascar.htm>.

2 Madagascar's environment had been of interest for centuries, as described by Andriamialisoa and Landrand (Andriamialisoa and Landrand 2003), who offer a fascinating history of Madagascar's scientific exploration going back to the 1600s.

3 While Madagascar's environment obviously comprises vastly more than forests, the period covered by this paper was primarily focused on forests and the biodiversity that depends on the maintenance of those forests. Consequently, this topic receives the major emphasis here.

a year. We had little more than the vaguest (poorly documented) hypotheses about Madagascar's natural resource wealth and why it was disappearing.⁴ The extent to which these and other things have changed will be addressed in the body of this paper.

For the moment, however, we should acknowledge the veritable volcanic eruption of research, analyses, planning documents, evaluations, and project reports that occurred in the years since the NEAP was launched – tens of thousands of pages have been written about Madagascar's environment and efforts to save it (Goodman and Benstead's magnificent 2004 tome *The Natural History of Madagascar* alone runs to more than 1,700 pages). This wealth of accreted information is cause for celebration. We have tried to keep this report reasonably short to render it accessible to a wide gamut of readers. It cannot, in its brevity, possibly capture the richness of Madagascar's environmental story or even USAID's part in it. Readers who wish to delve further are invited to consult the "key references" for each section of the paper that go into greater depth on various topics. Those seeking more information should note that key reference documents were chosen in part because they have extensive bibliographies. Most of the publicly available key documents are included on the CD that accompanies this paper:



4 The 1988 Proposed Environmental Action Plan wrote: "Madagascar's data base is not current and reliable enough to allow for planning and action. Environment in particular has no indicator of the status of natural resources and their evolution over time. This is particularly regrettable since, in the 1960s, Madagascar was considered a model country for collection and management of basic data in the African context. There has since been a progressive deterioration in the data system." (World Bank; et al. 1988, 41).

A BRIEF HISTORY OF NEAP, THE ENVIRONMENT PROGRAMS, AND USAID INTERVENTIONS⁵

In the 1980s, recognizing the critical role of both environment and economic policies in the sustainable development of poor nations, the World Bank (WB) began to encourage African countries to adopt more comprehensive environmental strategies. Madagascar was coming out of a decade of serious economic and environmental decline (roughly 400,000 ha of forests were lost every year in the decade between 1975 and 1985). The WB estimated that the economic costs of environmental degradation (forest and soil loss, the need to rebuild infrastructures due to erosion, diminished agricultural productivity etc.) cost the country between 5 and 15% of GNP⁶ annually (WB, et al. 1988, 9). Donors at the time were also concerned that duplication of efforts and confusion over who was doing what in the environmental field was facilitating corruption. The NEAP would create a framework and a mechanism for clarifying donor roles. To reinforce this message, World Bank loans were made contingent on the promulgation of an environment plan to define its conservation and development priorities.⁷

The Smithsonian Institution played a key and perhaps little known role in developing Madagascar's NEAP. As early as 1988, the Smithsonian signed a Memorandum of Understanding with the Madagascar Ministry of Scientific Research and Technological Development to facilitate research permits and scientific exchanges. The Smithsonian then hosted a number of the working groups that brought together scientists, representatives of the conservation organizations, and officials from the World Bank, USAID, and other policy makers to lay out the issues that would become the framework for the NEAP (Corson 2008).

THE NATIONAL ENVIRONMENTAL ACTION PLAN

In 1990, after several years of preparation, Madagascar's legislature voted for the Environmental Charter as a foundation for the first NEAP in Africa. The plan represented a dramatic shift away from viewing the State's role in environmental management primarily in terms of exclusion and policing,

5 A key document for this section is USAID/Biodiversity Analysis and Technical Support 2008.

6 This cost was assessed at \$100 million to \$290 million/year: 75% attributed to forest destruction, 15% due to decreased agricultural productivity, and 10% due to increased costs for maintenance of infrastructures (NEAP 1988, 28). Bruce Larson (Larson 1994) believes that this figure was overstated, particularly in regards to the opportunity costs associated with agricultural land use and the conversion of forests to agriculture.

7 The World Bank promised Madagascar about \$120 million of funding for EP I on the condition that legal and institutional changes were made, including formalizing the NEAP. The passage of the 1990 Environmental Charter fulfilled this requirement (Gezon 1997) (USAID/Biodiversity Analysis and Technical Support 2008).

as it had been since colonial times. Instead, from the outset it joined the dual goals of protecting the environment and improving living conditions, a principle that has been woven into every intervention funded by USAID since.

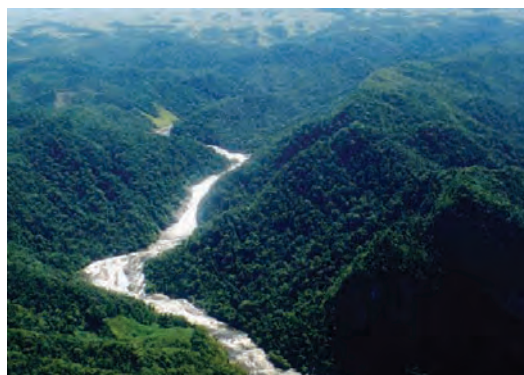
The six objectives as defined in Madagascar's NEAP were to:

- i. Protect and manage the national heritage of biodiversity, with a special emphasis on parks, reserves, and gazetted natural forests, in conjunction with the sustainable development of their surrounding areas
- ii. Improve the living conditions of the population through the protection and management of natural resources in rural areas with an emphasis on watershed protection, reforestation, and agro-forestry
- iii. Promote environmental education, training, and communication
- iv. Develop mapping and remote sensing tools to meet the demand for natural resources and land management
- v. Develop environmental research capacities for terrestrial, coastal, and marine ecosystems
- vi. Establish mechanisms for managing and monitoring the environment.

The NEAP itself was seen as one-third of a “tripod” needed for Madagascar to escape the vicious cycle of deepening poverty and accelerating environmental degradation. Along with the NEAP to address environment concerns, the other two “legs” were (1) structural adjustment to reform basic economic policies and (2) poverty reduction programs (including population policies).

The Environmental Programs

To get from the general principles of the NEAP to operational programs, in 1988 the World Bank formed a series of working groups that mobilized about 150 Malagasy from government, academia, and civil society alongside about 40 international environment experts (many of whom are still involved today). The working group proposals were then approved by the National Assembly. The grand plan for implementing the NEAP was divided into three successive Environmental Programs:



From EP I to EP II, the emphasis shifted from the integrated conservation and development (ICDP) approach to protecting much vaster corridors linking national parks. (Here: the corridor between Ranomafana and Andringitra parks.) (Photo credit: Mark Freudenberger)

Table I: Madagascar's NEAP Implementation⁸

NEAP Phase	Main purpose, objectives, orientation
EP I	NEAP start-up phase <ul style="list-style-type: none">• Set up institutional frameworks• Set up program financing• Establish program procedures, norms, and performance criteria• Establish environmental monitoring mechanisms• Establish coordination mechanisms• Conduct pilot operations and action research with a view to EP II
EP II	Action oriented phase – intensification of actions initiated in EP I <ul style="list-style-type: none">• Carry out concrete actions in biodiversity conservation, soil conservation, cartography, and land registration• Integrate the NEAP into the national development plan• Reinforce program coordination
EP III	Mainstreaming Phase – environmental “reflex” to become automatic <ul style="list-style-type: none">• Complete integration of NEAP into the national development plan• Populations, collectives, ministries, and non-governmental organization (NGOs) should be actively implementing techniques of environmental management• State structures should be systematically applying the environmental concept in sector policies and programs• National plans and programs make environment and conservation a driver for sustainable development

The total funding (from all donors during EP I, II, and III) has been estimated at approximately \$450 million for environment activities with another 50% for related programs that were not formally part of the NEAP process but in some way contributed to it (e.g., agriculture and health interventions). The United States contributed about \$120 million to Madagascar's environment program over this period.

8 USAID/Biodiversity Analysis and Technical Support 2008, 76.

USAID INTERVENTIONS⁹

Mission history

USAID's Madagascar Mission opened in 1984¹⁰ (though limited funding, particularly for food security interventions, had begun as early as 1962). This occurred as Madagascar was coming out of a period (the Second Republic, starting in 1975) when the Ratsiraka regime had advocated extreme socialism and made foreign assistance from the west unwelcome. Facing acute debt and budgetary crises, the Government of Madagascar (GoM) had signed its first agreement with the International Monetary Fund (IMF) in 1980, thereby opening the door to donor assistance.

Predating the NEAP, USAID's first environmental intervention (1986) was in support of an applied research study on the country's unique flora and fauna. Another early project looked at forest management above irrigated rice perimeters (PL 480 funding), foreshadowing the linkage between natural resources and food security. This was followed by a grant to World Wildlife Fund / World Wide Fund for Nature (WWF) to carry out early integrated conservation and development work in the Beza Mahafaly Reserve (1987) and then other operational program grants that anticipated the integrated conservation and development (ICDP) approach, focusing on Amber Mountain, Masoala, Ranomafana, and Andohahela. These initial grants helped prepare the Agency to play a larger role when the NEAP was announced and donor support was solicited. The new Mission was also able to draw on the experience of American research and conservation institutions that were already active in Madagascar and who helped to define the most critical issues and priority areas. By 1990, USAID was ready to commit to a long-term environmental program, already anticipating three implementation phases over a 15-year period.

Downsizing of the Mission and the biodiversity earmark. When EP I was launched in 1991, USAID-Madagascar was a major (Category A) Mission with more than a dozen direct hire employees and significant programs in agriculture/economic growth, environment, health, and governance. At this time, the other lead institution supporting the NEAP was the World Bank, but the Bank's key staff people (both the Resident Representative and the EP I manager) were based in Washington. By default, USAID became the lead actor for the Environmental Program.

The "power mission" was short-lived, however. In tacit recognition that program success was unlikely if the basic structure of the economy was out of whack (social and economic indicators had also plummeted during the socialist era), USAID made its continuing support contingent on Madagascar's adherence to a structural adjustment program. When Madagascar failed to meet the requirements, a decision was made in 1994 to reduce U.S. assistance. The Mission was demoted to Category B (with further "demotions" in later years) and suffered major funding cuts. The Environment Program

9 Catherine Corson's dissertation, Mapping the Development Machine: the US Agency for International Development's Biodiversity Conservation Agenda in Madagascar, is a key document for this section.

10 Critical events in the recent environmental history prior to USAID's arrival include Madagascar's hosting (1970) of the Second International Conference on the Rational Utilization and the Conservation of Nature in Madagascar; the dramatic loss of forests during the 1970s when the Ratsiraka government encouraged citizens to "take back" the natural resources previously protected by colonial laws, the 1984 passage of Madagascar's National Conservation Strategy (which followed IUCN guidelines), and the 1985 Second International Conference on Conservation and Development, held in Antananarivo. We must also not forget that estimates suggest that as many as 4 million ha of forests were decimated between 1900 and 1940 under the colonial administration due to logging, the introduction of cash crops such as coffee (which, in taking the best land, pushed farmers to clear new fields from the forests), and wood extraction as needed to power steam engines and build infrastructure. (Jarosz 1993).

The progressive integration of population/health and environment sector activities is one of the considerable achievements of the Madagascar program.

Initially, there were independently planned and implemented health activities and environment activities that both happened to be in Madagascar. Under EP I, a deliberate decision was made to carry out family planning interventions where USAID was financing ICDPs. From EP II on, family planning was not a stand alone service program but was nested within broader health programs, and integration of health and environment interventions took place nationally and right down to the community level.

The integrated approach is now deeply woven into the fabric of both environmental and health interventions in Madagascar. Neither sector will say that the collaboration has been easy and there are persistent references to “differences in culture” between the two sectors, as well as a myriad of logistical and practical considerations that arise when coordinating large and complex projects operating on different time frames. All actors seem to agree that the added efforts are justified, however, and are convinced of the conceptual validity of the approach even when the benefits are difficult to quantify.

One important qualitative benefit of integration has been the reduction of gender bias in both domains: field agents have noticed that when environmental and health concerns are discussed together, men (previously marginalized in family planning discussions) become more openly interested in contraception, while women (often sidelined in environmental discussions) have taken a more active role in natural resource management.

was one of the few spared, thanks in part to the biodiversity earmark¹¹ that has represented the backbone of the program since 1990 and Madagascar's importance as a biodiversity hotspot. Aside from its health programs, the Madagascar mission has never returned to the funding levels it enjoyed in the early 1990s¹² and by 2009 the Mission had only three direct hire employees.

USAID has recognized from the outset that success on the environment is contingent on economic growth, but the programs to support that vision have been sadly lacking. The biodiversity earmark has motivated a consistent environmental focus, but has also acted as a constraint in terms of the breadth of activities that can be funded. (In fact, the earmark allows more flexibility than might initially be expected since it requires missions to address threats to biodiversity. This partially opened the door to working on agriculture, economic growth, and other related issues but the emphasis has always necessarily been on stricter biodiversity objectives.) The Mission has made vigorous attempts over the years to attract additional Democracy and Governance (DG) and Economic

11 The biodiversity earmark represents an instruction from Congress to focus funds on the conservation of biological diversity and the protection of tropical forests. In 1987, the earmark was \$5 million; for 2010 it is \$205 million (worldwide). Until 2005, the earmark was “soft” and strongly encouraged spending in this direction. In 2005, the earmark became “hard” which obliged USAID to spend a certain amount of its budget on biodiversity interventions. The biodiversity earmarks were taking place at the same time that the agency was generally downsizing. In practice this meant that the more money put into biodiversity, the less available for other programs (only about 25% of USAID's budget is discretionary and not subject to earmarks). When USAID and the Department of State prioritized biodiversity programs in a 2007-08 exercise, Madagascar was one of the top five priority countries. All of this helps to explain why the Mission has continued to receive significant environmental funding (and even remain open) when 12 other Africa missions were closed under the Bush Administration. This was particularly a threat when the Millennium Challenge Corporation (MCC) signed a compact in Madagascar (2005) that might otherwise have eclipsed the USAID mission. The biodiversity funds kept at least the core part of the environmental program intact. But it also helps to explain why funds for other complementary programs (agriculture, economic growth) and other environmental programs (such as alternative fuel and energy, agroforestry, pollution) that do not fit under the stipulations of the biodiversity earmark have been so difficult to capture.

12 From 1992-95, the Madagascar Mission spent an average of \$2.80 per capita per year on non-health and food aid projects (agriculture, environment, DG, and EG). Between 2005 and 2008, the annual per capita spending for such programs had fallen to \$0.60. In comparison, health and food aid spending, which was about \$0.32 per capita annually during the earlier period, rose to an annual per capita average of \$1.95 between 2005 and 2008.

Growth (EG) funds as those programs have come in and out of vogue, but has had only limited success. Governance and Economic Growth interventions have been intermittent and, for most of the past 15 years, have occupied only a marginal space in the portfolio.

Health and Environment.¹³ The exception to this has been the health sector. Defined as “humanitarian” in nature, it has been largely spared the cuts that decimated other sectors. Efforts to integrate certain parts of the health and environment portfolios have been undertaken since EP I and have been significantly strengthened over time to the point that the Madagascar program has become a worldwide model (with the Philippines) for this integrated approach. The first University of Michigan Population/Environment Fellow was assigned to Madagascar in 1997, working with the Commercial Agriculture Project (CAP) (environment/economic-growth) and APPROPOP (population services) projects in the Fianarantsoa region. Three other Population/Environment Fellows (one working on each of the threatened corridors and one in Antananarivo) followed; all played important roles in nurturing this cross-sectoral relationship, either centrally or in field implementation.

During EP I, the focus was on providing family planning services in the ICDPs. In Toliara, Toamasina, and Fianarantsoa provinces, the environment projects partnered with the APPROPOP population support project to increase family planning services, especially in the remote areas immediately adjacent to national parks.

Under EP II’s landscape approach, the task was more difficult due to the larger geographic expanses to be covered in extremely remote areas and the fact that there was no health project specifically tasked with providing services in these areas. A Packard Foundation grant (Madagascar Green Health Communities) to Jereo Isika Salama (JSI) encouraged their collaboration with Landscape Development Interventions (LDI) to promote family planning in lower density population areas where rapid population growth increases pressures on natural resources of the forest corridors. This is significant because these areas would not otherwise have fallen within the health program target zones that usually focus on higher density (“bigger bang for the buck”) population areas.

Partly as a result of working together in this remote and challenging context, the vision became more sophisticated. Initially, collaboration grew out of a perceived need to slow population growth that was undermining the ability of environment/rural development projects to achieve per capita improvements (e.g., in rice production) as needed to reduce pressures on natural resources. As such, the early focus was on getting contraceptives into areas around the Protected Area (PAs) and corridors. By the late 1990s, there was growing recognition that health interventions could play a more significant role in promoting conservation activities. Specifically, it became clear that doing



The integration of health, family planning, and environmental programs in priority conservation areas has been an important feature of USAID’s Madagascar program. In this photo, a family planning demonstration in Tsaratanana, in the Ranomafana-Andringitra corridor. (Photo credit: Kristen Patterson)

¹³ Key document for this section is Gaffikin, *Scaling up Population and Environment Approaches in Madagascar: A Case Study*.

family planning without providing for basic health needs made little sense and that responding to health issues (demonstrating concern for their family's well-being) was a good way to build trust with local communities as a basis for addressing natural resource issues.¹⁴

In 2005, the Madagascar Mission went a step further in adopting the Nature, Wealth, and Power (NWP) framework developed under USAID/FRAME. Notably, the Mission and its partners decided to adapt the framework to incorporate health and nutrition concerns, renaming it Nature, Health, Wealth, and Power (NHWP) and emphasizing again the linkages between environment, economic development, health – including family planning – and nutrition, and governance. The parallel provision of services (ensuring that health and family planning services were available where environmental projects were working) evolved into a more integrated approach with the introduction of the Champion Community (village) approach during EP II. This approach, which was later also applied at the Commune¹⁵ (county) level, helped communities to identify achievable goals in health, environment, economic development, education, and governance. Villages (or communes) then worked in partnership with the various projects to achieve the goals they had defined and celebrated success at a community event.

With positive reinforcement from the center, field level collaboration between health and environment projects continued to progress under EP III, particularly in projects working around the forest corridors. In addition, USAID/Washington's Population, Health and Environment Program directly funded the three major conservation programs (Conservation International – CI, WWF, Wildlife Conservation Society – WCS) in Madagascar to implement family planning and other key health interventions (e.g., nutrition) in other biodiversity priority areas where they were working.

An overview of USAID's environmental projects

USAID environmental interventions must be understood both in the context of how the NEAP fit (or didn't) into Madagascar's larger development strategy and the evolution of the USAID portfolio. While the NEAP recognized the need for economic growth from the outset, the GoM's own poverty reduction strategy (DSRP) was not defined until 2003, more than a decade after the environmental plan was announced. This meant that environment programs (in general, not only those under USAID auspices) have always stretched to address livelihood and economic growth issues in the absence of some very key "enabling" conditions such as the absence of a functional agricultural extension service. Conceptually, the Madagascar Action Plan (MAP, promulgated in 2006,) remedied the imbalances in proposing a holistic and integrated development vision. But progress in implementing that vision was hampered by serious governance problems, culminating in the 2009 coup d'état.

This section briefly introduces the USAID projects during each phase of the NEAP implementation. For now we present only those that were primarily funded under USAID's Environment-Rural Development (Env/RD) strategic objective or had a primary focus on environmental issues. As noted above, however, one of the strengths of the Mission was its integration of program activities, particularly between the health and environment sectors. Annex I (see attached CD) presents a more complete listing of projects implemented during the EP years.

14 Language in the Congressional Foreign Operations Appropriations Bill (2001) specifically targeted family planning funds to areas "where population growth threatens biodiversity or endangered species." Soon after, USAID's Global Health Bureau/Office of Population began to support an integrated Population, Health and Environment Program. This program supported the Population-Environment program. In Madagascar, the USAID Env/RD and Health and Population (HPN) offices created a common strategic objective in the Mission's 1992-97 Strategic Plan. By 2003-08, the two programs had a shared sub-intermediate result: "Demand and availability of family planning services, products and practices in priority conservation areas increased."

15 A commune is a collection of 10-20 villages and hamlets, usually representing about 10,000-15,000 people, with a principal village as its "chef-lieu."

EP I (1991-1996):¹⁶ This period represented the most intensive USAID involvement, totaling nearly \$50 million of environmental projects. In addition, over this period, USAID funds (not just for the environment) represented more than 80% of total economic assistance to Madagascar, making it a major player. The interventions have been described as a “cascade of initiatives,” emphasizing the extent to which they intervened in multiple domains, at multiple scales.

The two major focus areas for EP I were making the newly established Protected Areas work (whether from a policy, institutional, or grass-roots perspective) and establishing the foundations for environmental management through institutional strengthening and human resource development.

The main projects in USAID’s environmental portfolio during EP I were the following.

Conservation/Development Operational Program Grants (1988-1992): As a precursor to integrated conservation and development projects, four grants were awarded to conservation organizations as a first step in testing the linkage between conservation and development objectives in four priority PAs (Amber Mountain, Masoala, Ranomafana, and Andohahela).

Debt for Nature (DfN)¹⁷ (1989-1994-2002): This project started prior to EP I and initiated some of the approaches that were integrated into later projects. The project trained a nationwide cadre (400) of locally recruited nature protection agents (APN), and later trained and supported Water and Forestry agents and offices, some in remote areas. In the second phase of the project (with Dutch financing), DfN pioneered some of the early forest management transfers to local communities.

PVO-NGO NRMS (1989-95): A centrally funded, four-country project that reinforced local environment and development NGOs and created NGO coordinating bodies (COMODE); PVO-NGO NRMS also provided extensive training.

Sustainable Approaches for Viable Environmental Management (SAVEM) (1991-98): Helped to establish and then mentored ANGAP to take over management responsibilities for Madagascar’s PAs; created basic tools for park management, including establishing and formalizing boundaries, assessing and documenting eco-systems, identifying watersheds and population pressures; funded ICDP activities immediately adjacent to seven PAs including initial forays into eco-tourism and some park infrastructures, did some road rehabilitation work near parks. **Managing Innovative Transitions in Agreement (MITA) (1997-98)** was a bridge project from SAVEM to EP II that helped ANGAP to decentralize in order to take on increased park management responsibilities.

TRADEM (1991-95): Sought to generate sustainable income and economic benefits from the marketing and sustainable trade of natural resource products. This project remained at the design stage and was never fully funded or implemented.

16 A key document for this early period is Sowers et al *Protecting Biological Diversity: Madagascar Case Study*, 1994.

17 Debt for Nature was a concept first proposed by WWF in the 1980s. The idea was that developed country banks held large debts from approximately 20 poor countries that were unlikely ever to repay these debts. Burdened by debt payments, they were unable to devote resources to conservation activities. The Debt for Nature program would cancel a portion of the debt and in exchange the beneficiary country would increase its support for conservation activities (French, et al. 1995, A-2)

Knowledge and Effective Policies for Environmental Management (KEPEM)

(1993-97): Provided non-project assistance¹⁸ focused on policy and institutional strengthening as needed to sustain conservation activities. Worked with the GoM to develop environmental plans, to create and institutionally support both the ONE and Tany Meva, to reform the taxation system on forest products, to begin the environmental impact assessment process, and to develop environmental monitoring systems.

CAP (1994-99): Focused on commercialization of agricultural products, including related infrastructure investments such as farm to market roads, agricultural processing plants. Began working on commodity chains, eco-tourism, and some other economic issues that would later be picked up under the LDI project.

EP II (1997-2002): Evaluations of EP I, which largely mirrored evaluations of ICDP approaches elsewhere in the world, identified the limits of working in very restricted areas around national parks using approaches that were sometimes considered rather “hit-and-miss.” There was a growing recognition that local level interventions needed to be both more strategic and more comprehensive to deal with the multiple causes of unsustainable forest use. This led to a major paradigm shift in thinking toward what became known as the eco-regional or landscape approach. Projects more systemically analyzed threats to natural resources, looking not just at immediate proximate causes, but also at pressures from more distant areas and structural issues affecting resource use decisions. It was no longer considered sufficient to protect only selected high biodiversity parks; now conservationists were also eyeing larger blocks of forest deemed essential to species survival over evolutionary time. Madagascar was at the forefront of testing and applying the landscape approach, which was also being rolled out in other environmental programs around the world.

The result was clusters of eco-regional projects that focused on five zones: the Mantadia-Zahamena¹⁹ and Ranomafana-Andringitra forest corridors, the Mahajanga-Bealanana landscape, the Northern (Antsiranana) ecological zone, and the South East (Tolagnaro) ecological zone. (The first three had major project activities; the Antsiranana dossier was limited to eco-tourism, and the only project in the south was the Global Development Alliance (GDA) with Rio Tinto/QMM.) These priority zones were determined using careful analysis of available scientific information, including the degree of fragmentation, level of threat, and perceived potential to successfully reduce those threats.²⁰

At the policy level, efforts continued to improve the policy framework and, especially, to operationalize policies that had been put into place but as yet had limited impact. Overall, funding for this phase was much reduced relative to what had been available under EP I. Perversely, this corresponded with a recognized need for greater and more consistent coverage in the target zones, leading to a significant disconnect between the magnitude of the vision and the resources available to implement the strategy. Halfway through the implementation period, funding constraints forced reductions of the Mahajanga-Bealanana program.

18 During this period, non-project assistance was a fairly common approach used by USAID, which used it for sectoral assistance (unlike the World Bank or the IMF that used non-project assistance to promote economic reform via general budget support to Ministries of Finance). A series of key policy measures would be defined, for example, with benchmarks for assessing progress. As those benchmarks were reached, the next tranche of funds would be released. Shortly after KEPEM, USAID reduced the use of non-project assistance except in a very few cases.

19 These corridors have been called by different names over the years and have been adjusted over time as new information on biodiversity priorities has become available. (Most recently, the Mantadia corridor has been called Ankehiny-Zahamena and the Andringitra corridor is called Fandriana-Vandrozo.) We will continue to call them by the names of the principal parks they connect since that nomenclature will be more familiar to many readers.

20 Several prominent conservationists have lamented that USAID's focus has never included the dry forests, which are extremely high priority areas.

Projet d'Appui à la Gestion de l'Environnement (PAGE) (1999-2002):

Worked to strengthen Tany Meva, ONE, ANGAP, and the Ministry of Environment on decision-making skills and “accompanying measures” (training, monitoring, procedures, manuals) needed to implement key environmental policies (e.g. the Environmental Impact Assessment package); worked on creating the institutional and policy framework that would facilitate sustainable financing, especially for the national park system; created a documentation center (at ONE) to increase access to environmental information; carried out early design work for a carbon fund pilot project (Makira).

MIRAY (1998-2004): Promoted a framework favorable to environmental management at all levels from national to local; provided national and field level assistance to ANGAP, ONE, and DEF to improve park and forest management, supported newly decentralizing government offices (disseminated eco-regional planning training and tools through regional AGERAS – Support to Landscape Ecology Approach – offices); supported civil society environmental organizations (Comité Multi-local de Planification – CMP, Comité Régional de Développement – CRD); developed environmental communications strategies and built three park interpretation centers as part of the eco-tourism development model.

Landscape Development Interventions (LDI) – Programme de Transition Eco-régional (PTE) (1998-2004): Implemented landscape approach to resource management, focusing on the two forest corridors and the Mahajanga landscape; tested and disseminated alternatives to *tavy* agriculture; supported eco-tourism initiatives; made limited infrastructure investments (market roads and local irrigation systems), especially as needed to promote increased production and/or commercialization; created and mentored the KoloHarena farmers cooperatives, offering farmers alternatives to slash-and-burn agriculture; supported the demonstration farm in Beforona (near Moramanga) to provide extension services to farmers. PTE was the transition project that allowed LDI to continue operating until the new Eco-regional Initiatives (ERI) project was signed.

Fianarantsoa Côte Est Railway Rehabilitation Project (FCER) and RECAP (2001-2005): Mobilized supplemental funds to repair transport and agricultural infrastructures (in focal corridors) destroyed by the devastating cyclones of 2000; rebuilt the FCE railway and rehabilitated several farm to market roads.

EP III (2003-2008): By EP III, key actors within USAID recognized that EP I and II had been handicapped by the fact that the programs had been highly donor driven, with little buy-in from the Malagasy government. EP III made a strong effort to incorporate more donors, more sectors, and more government input. For USAID, the basic technical approaches of EP II were continued, while acknowledging their still limited impact. The number of eco-regions was officially reduced to three²¹ (all within the eastern rainforest) and the corridors were lengthened to address conservation concerns. The Madagascar Mission adopted the Nature, Health, Wealth, and Power conceptual model. Forest management focused primarily on transferring forest management rights and responsibilities to local communities. There was an increased emphasis on generating economic benefits from the remaining forests and plantations. USAID encouraged its projects to coordinate and create synergies with other donors and development actors, both at the national and regional levels. Nationally, this phase was supposed to mainstream environmental concerns into all aspects of macro-economic planning.

Eco-regional Initiatives (ERI) (2004-2009): Continued the landscape approaches started under LDI, created “Alliances” with other actors working in the same geographic zones (environment, health, and governance, among others); evolved away from center-based agricultural extension and toward farmer-to-farmer approaches; mentored community

21 Andasibe-Zahamena, Ranomafanta-Andringitra, South East (Tolagnara).

associations to assume responsibilities as co-managers of local forest resources; continued reinforcement of KoloHarena farmer associations including, especially, their capacity to engage in commercial activities; created (with Business and Market Expansion – BAMEX) KoloHarena Federations at the regional and national levels. With partners, implemented the Champion Communities approach with prizes for communities that reached their objectives in the health, governance, economics, environment, and education sectors.

Managing Information and Strengthening Organizations for Network Governance Approach (MISONGA) (2004-06): Focused on strengthening civil society (with advocacy training) and improving information flows between government and the citizenry (established documentation centers, promoted rural radio around the forest corridors, introduced e-governance pilot sites to provide information about GoM policies and make it available throughout the country); managed the “governance” component of Champion Communities (known in Malagasy as Commune Mendrika) and promoted greater transparency and anti-corruption measures (especially at the regional level). This is an example of a project that began to address governance issues, but whose funding was pulled when DG funding was reduced.

BAMEX (2004-08): The BAMEX program was initially funded under the Economic Growth Strategic Objective (SO) with joint funding from the environment SO. When the Economic Growth SO was dropped from the Madagascar portfolio in 2006, the BAMEX activities funded through biodiversity earmarks were transferred to be managed under the Env/RD SO. The first BAMEX phase was national, focusing on promising value chains (litchi fruit, rice, gourmet coffee, gemstones, etc.) and addressing constraints at each step of the chain. Business centers were established to support emerging ventures; attempts were made to reform certain key economic/business policies that hindered investment (i.e. a law to encourage the use of biofuels) and development of rural economies (i.e. rice pricing policies). From 2006, the project was scaled back; certain interventions were partly absorbed by ERI and the new MCC project, and the project re-focused on commercial agriculture around the forest corridors, with particular attention to helping the KoloHarena farmer cooperatives.

Jariala (2004-09): Provided policy and institutional support, especially in the forestry sector; created Forest Observatories in an attempt to enhance transparency of forest governance, created policies and procedures to transfer commercial harvesting rights to private operators (especially in KoloAla “production forests” and underexploited plantations); tested improved charcoal production methods; supported capacity building for central and local DEF offices.

MIARO (Biodiversity Conservation Project) (2004-09): Focused on biological integrity of critical habitats: helped improve management of PAs and worked on SAPM (Système des Aires Protégées) implementation; supported communities and authorities to implement co-management of protected areas (with a focus on the USAID eco-regions); worked on sustainable financing issues.

Menabe Biodiversity Corridor (2007-09): Built forest connectivity through decentralized management and revenue generating activities.

VARI (2006-09): Introduced irrigation technologies to improve water management and increase rice yields; encouraged production of market-oriented crops; developed regional marketing networks of producers and operators to advance selected value-chains; promoted improved land use and natural resource management plans.

The current situation. EP III officially ended in 2008. USAID's projects supporting EP III goals were mostly scheduled to end in 2009. A new round of project planning was undertaken in order to ensure continuity between old and new projects. Instead, the political crisis,²² which started in early 2009, and U.S. government frustration with the blatant unwillingness of the new regime to adhere to democratic principles (or even to Madagascar's own constitution) led to a decision to suspend all non-humanitarian U.S. government programs in July 2009. Biodiversity conservation programs might have been exempted from the suspension as they have "notwithstanding authority" (allowing them to be managed independently of decisions governing other programs due to their contribution to global priorities), but the U.S. government chose not to invoke this authority in spite of considerable lobbying from the conservation organizations and other concerned parties. The State Department decision to suspend the Madagascar program reflected U.S. policy at the highest levels and was likely influenced by the spate of other coup-like incidents²³ in Africa at about the same time.

Cooperative agreements and contracts for all USAID's outstanding environmental programs were terminated and new procurements and awards could not proceed (unlike 2002 when project activities continued, though expatriate staff funded under USAID contracts were evacuated for several months). FY 2009 funds designated for Madagascar's environment program (roughly \$9 million, of which approximately \$7 million was biodiversity earmarked money) were reprogrammed to other countries and there is a strong possibility that Madagascar's FY 2010 biodiversity earmarked funds (approximately \$4.5 million) will be similarly reprogrammed if the political situation is not resolved quickly.

Partnerships

In implementing its programs, USAID has worked with an enormous range of partners, some as contractors or grantees, others as collaborators in advancing the environmental dossiers. While this paper is intent on not personalizing the history of USAID's interventions, this section cannot be written without mentioning the role of the USAID Environment/Rural Development Team Leader, who worked with USAID in Madagascar (as a U.S. Personal Services Contractor) for 18 years. Her

22 Significant discontent with President Ravalomanana's regime had been growing for some time among both the populace and leadership. Different segments of the population were angry about different things, including the use of state resources for private gain, favors to the President's personal business interests that were crowding out other business interests, dubious use of public funds including significant off-budget expenditures, excessive deconcentration of state powers and undermining of democratic institutions, perceived injustices in dealing with the military, the emerging redominance of a Merina elite, and censorship of the media (among others). The generalized frustration provided fertile ground for anyone with the courage to stand up against the abuses. The opposition movement rallied all of the former Presidents of Madagascar (many of whom had been ousted for similar abuses of power), several new pretenders to power, and junior military officers. In the early months of 2009, a restive and frustrated populace took to the streets in protest against Ravalomanana. On March 17th, President Ravalomanana purported to transfer his authority to a senior military figure, who in turn purported to confer the presidency on opposition leader Andry Rajoelina (then mayor of Antananarivo), who announced himself the head of the High Transitional Authority (HAT). The United States characterized the transfer of power as a coup d'état against a democratically elected president, and does not recognize the HAT.

Initially promising to hold early elections, in the year since assuming power, Rajoelina has demonstrated a keen interest in staying on (even though at 35 he is constitutionally too young for the position of President). The opposition movement (whose only common interest was to end the Ravalomanana regime) has splintered, numerous efforts by the international community and the African Union to formalize a process leading to early elections have failed, and the situation as of this writing remains confused. The economy is in tatters: many companies have pulled out, tourism has plummeted, and the government is near bankruptcy.

23 Per section 7008 of the Department of State, Foreign Operations and Related Program Appropriations Act of 2009, the United States Government is required to suspend all assistance to governments that come to power through a coup d'état. Programs in Guinea, for example, fell under this provision after the December 2008 coup.

longevity alone is rare in the USAID system and contributed significantly to the sustained, persistent, learning-based approaches that characterized the program. She provided the institutional memory that is critical to learning the lessons of the past and maintaining continuity. Personality counts, however, and hers was one that thrived on complex institutional arrangements and a multiplicity of actors. Some people feel that this complexity has unnecessarily hindered implementation, while others celebrate the ideas and energy it generated. Regardless, her presence from EP I through EP III is notable.

There have been hundreds of institutions and organizations that have been in some way connected to USAID's environment program in Madagascar over the past 25 years. This section highlights a few groups of actors that have been most closely associated with shaping the direction of the program or its implementation. Not listed, but of vital importance, are USAID's primary partners: the people and Government of Madagascar:

The Conservation Organizations. No paper on the environment movement in Madagascar would be complete without acknowledging the conservation organizations²⁴ that have been pillars of the movement. In particular, WWF (The Worldwide Fund for Nature/International, known as the World Wildlife Fund in the U.S.), Conservation International, The Wildlife Conservation Society, and Missouri Botanical Gardens have been active since well before the NEAP was even a distant dream.²⁵ The conservation organizations have implemented a multitude of programs independent of USAID, which have in many cases contributed knowledge and experience that shaped later USAID interventions. They have also implemented numerous USAID grants. Each has been active in establishing one or more of the flagship national parks.

WWF's pioneering work on landscape approaches around threatened biodiversity elsewhere in the world helped to inform USAID's strategy as it moved on from ICDP to landscape approaches. WWF has also been a leader in environmental education, creating school and community-based environment (Vintsy) clubs, a monthly environment magazine, etc. CI focused world attention on Madagascar with its Hotspot²⁶ designation and has played a lead role in conducting the deforestation analyses that have been used to monitor the health of Madagascar's environment. CI and WCS have been leaders in piloting carbon sequestration approaches around Makira forest. All of the conservation organizations have brought a passion for biodiversity, along with the scientific expertise needed to prioritize key areas for conservation.

No paper on the environmental program in Madagascar would be complete without acknowledging the conservation organizations that have been pillars of the movement... they have had as much or more influence over the GoM and environmental policy as any of the major donors.

24 This section does not mean to imply that the conservation organizations always work in tandem or share identical perspectives. To the contrary, there have been many instances in which they have disagreed; some will be mentioned in this paper.

25 The 1970 IUCN International Conference in Madagascar already called for the establishment of a Malagasy section of World Wide Fund for Nature (Corson 178).

26 CI has targeted 25 Biodiversity Hotspots in the world based on species endemism and degree of threat. Madagascar is first on the list of the hottest Hotspots (it has more than 3% of the world's endemic plants and has lost more than 90% of its primary vegetation). The Hotspot list was intended to focus attention and resources on saving these extraordinary resource banks (Myers, et al. 2000)

Together, the conservation organizations have exerted pressure on Congress to maintain the biodiversity earmarks that have, since 1990, provided the majority of funds to the Madagascar environment program. They have also been among the major recipients of these funds, both in Madagascar and elsewhere in the world.²⁷

Their ubiquitous and constant presence has earned the conservation organizations a place at the table that some would judge as excessively domineering, others as exerting necessary leadership. In either case, few would dispute that they have as much or more influence over the GoM and environment policy as any of the major donors. It is significant that they have been able to maintain operations through each of the political crises, are witness to the effects of crises on the environment, and have kept critical programs alive, even when donor-supported programs have been obliged to pull back.

At the outset, relations between the scientific and social science communities tended toward the antipathetic. Over time (and partly thanks to USAID's persistent insistence on integration in the projects they have funded) they have come to greater mutual understanding. They have educated one another in a way that permits them to speak a common language in pursuit of often similar goals. If some of the conservation organizations were viewed initially as running roughshod over the interests of communities in their preoccupation with biodiversity, they have over time become more sensitive to questions of economic incentives, farmer constraints, and dialogue with local communities. The conservation organizations remain tireless advocates of Madagascar and the biodiversity agenda.

Contractors and grantees. USAID's environment programs were for the most part implemented through cooperative agreements with NGOs and contracts with U.S.-based development firms.²⁸ Among the development NGOs, CARE, Catholic Relief Services (CRS), and Private Agencies Collaborating Together (PACT) have been particularly active in the environment sector; while major environmental project contractors have included Associates in Rural Development (ARD), Chemonics, Development Alternatives, Inc. (DAI), and International Resources Group (IRG). In nearly all cases, projects were implemented by a consortium of implementing partners. Smaller NGOs and contractors often played important roles, especially in implementing creative pilot approaches that have tested ideas later integrated into the larger projects.

Annex I (see attached CD) lists the major USAID-funded environment (and related) projects during this period, as well as their primary implementers. In many cases, these international partners further subcontracted with local NGOs who contributed particular expertise (They are too numerous to be listed here, but can be found in most project final reports.) Under EP III, as the Mission tried to strengthen collaboration and strategic planning around the forest corridors, it required all USAID-funded projects working in a geographic zone to form an Alliance to encourage synergies between the different interventions. Some of the Alliances also invited government officials and other projects working in the area to participate, carrying out joint planning exercises, field missions, etc. These coordination exercises were generally deemed to be useful, but highly time consuming.

27 These earmarks significantly fueled the growth of the conservation agencies in the 1990s when the five largest conservation agencies (which include CI, WWF, and WCS) managed more than 70% of USAID's spending on conservation. (Downie quoted in Corson). Since 2003, they have formed an International Conservation Partnership that recommends appropriations levels for USAID's biodiversity programs and lobbies for those programs (Corson 2008).

28 This paper avoids focusing on specific contractors and implementers (and will not even mention them in the text in many cases). The purpose is to get everyone to step back, depersonalize results and failures, and assess the big picture and our collective accomplishments.

U.S. Forest Service (USFS) (2001-08). USFS carried out 21 missions to Madagascar, primarily to provide technical assistance to projects and work with the DEF. These missions were focused on forest sector reform, bidding procedures for forest management contracts, management plans for plantations and watersheds, suggested changes to forestry laws (permitting, etc.). In addition, 17 Malagasy forestry specialists, mostly from DEF or ANGAP (Protected Area staff) were sent on study tours to the United States where they visited parks and learned about park management issues.

Private sector. USAID projects have viewed the private sector as potential allies since 1994 when the CAP project began working with small, environmentally friendly enterprises. LDI and BAMEX also adopted this approach, in addition to promoting Enterprise Development Zones to encourage responsible investments around Protected Areas. The BAMEX business centers provided information and training to small enterprises, especially in those areas where economic development was expected to reduce pressures on natural resources.

Several projects have attempted to attract the interest of U.S. investors but the results have been generally disappointing as initial enthusiasm is replaced by hard-headed analysis of the difficulties and risks of doing business in Madagascar.

The projects have worked less frequently directly with large in-country business interests. Two notable exceptions were (1) the Global Development Alliance (GDA/LARO), formed between the Rio Tinto Corporation (ilmenite mining), USAID, and the Region of Anosy (Fort Dauphin) and (2) The Business and Biodiversity Offsets Program pilot with the Sherritt Corporation (Ambatovy nickel mining). Lasting from 2003-08, GDA/LARO encouraged greater environmental responsibility from the corporate partner, with help from USAID to develop interventions in health, education, food security, and environmental programming.²⁹ This represented a conscious decision to engage with a potentially problematic investor to identify and mitigate the negative social and environmental effects of this huge mining operation.

A centrally funded cooperative agreement worked with the Sherritt Corporation to develop mitigation and offset activities (reforestation, rerouting of the pipeline, etc.) related to their massive nickel mining operation (2004-09). It was hoped to formalize some of the approaches developed during this relationship (by strengthening the Madagascar regulatory framework), but those policy advances were halted with the 2009 coup.

Peace Corps. Peace Corps opened in Madagascar in 1993 and the first group of environmental volunteers arrived about a year later. USAID's biodiversity program directly supported environment volunteers through a Participating Agencies Service Agreement (PASA) with the Peace Corps. Most of the environment volunteers worked in park management or environmental education. Many of the volunteers were assigned to work with ANGAP to support their emerging role in managing the national parks, others worked on ICDPs with CI, WWF, WCS, and still later some were assigned to the LDI and ERI projects where they worked on community development and environment issues.

Universities and researchers.³⁰ International conservation researchers were the pioneers of the environmental movement in Madagascar. Several ventured far beyond the boundaries of their personal research to help set Madagascar's conservation agenda.

29 While many "big business" investments have been put on hold for the moment, the trend is for larger investors to come to Madagascar (especially in the extractive industries). This may recommend the GDA model as a way of engaging corporate responsibility.

30 An interesting paper discussing the role of anthropologists working on environmental issues in Madagascar is Kaufmann, *The Sad Opaqueness of the Environment Crisis in Madagascar* (2006).

When Madagascar closed to the international development world from the mid 1970s to mid 1980s, some of the few westerners allowed to work in the country were research scientists. When the country “re-opened” they were poised to present the environmental case. Some of these researchers were associated with universities that carried out early biodiversity inventories, including Duke and North Carolina State, Yale, Washington University, and State University of New York (SUNY) (several of whom continued working as partners in the implementation of the ICDPs).

Hitching at least some of the best academic brains to projects where they join academic research excellence with problems immediately relevant to the people and nature of Madagascar has proven highly productive.

Madagascar is a fertile ground for researchers of all types. Ranomafana Park alone, for example, hosts more than 100 researchers per year. Thanks to the Valbio Center, Ranomafana now ensures that all research carried out in the park is readily accessible.³¹ Regrettably this is not the case for much of the work on Madagascar which too often disappears at the boarding gate.

WWF Madagascar’s Ecology Training Program (ETP) played an important role in increasing capacity among Malagasy scientists. More than 75 Malagasy students have earned Master’s and PhD degrees through this program. In 2007, ETP was turned over to the Malagasy International Association VAHATRA,³² which continues to promote Malagasy conservation biologists and publishes *Malagasy Nature* as a forum for peer-reviewed scientific papers (many by Malagasy scientists).

The relationship between field implementers and academics has been uneasy. Academics find it far too easy to take pot-shots at project shortcomings, often without feeling any responsibility to contribute to making things right. Projects would like to improve their interventions and use the knowledge generated by academia, but differing vocabularies, world views, and time frames render this challenging. Hitching at least some of the best academic brains to projects where they join academic research excellence with problems immediately relevant to the people and nature of Madagascar (e.g. the Cornell partnership with LDI and ERI projects) has proven highly productive.

Donor collaboration. Madagascar’s major donors have since the beginning been committed to supporting the NEAP and working with the Malagasy government to implement it. This joint collaboration is highly significant but it has also posed major coordination challenges. In addition to the U.S., major donors have been Germany, France, Switzerland, and Japan (bilaterally) and the Global Environment Facility (GEF), the World Bank/International Development Association, and the UNDP (multilaterally).³³ In the late 1980s, a Multi-Donor Secretariat, located in the World Bank offices in Washington, DC, was established. It was tasked with coordinating and supervising implementation of the EPs, as well as disseminating information to collaborating donors. Its off-site location significantly limited its efficacy.

31 See http://icte.bio.sunysb.edu/pages/publication_list.html for a lengthy list of park based research reports.

32 Founded by Steve Goodman.

33 The EP strategy divided responsibilities with the U.S. and conservation organizations focusing on Protected Areas, the World Bank on livelihoods, the French on mapping and land tenure. The Protected Area ICDPs were also allocated among the donors with the U.S. partnering seven PAs, the Germans three, and UNESCO two.

The donors made a concerted effort to improve coordination under EP II, moving the Secretariat to Antananarivo, and, from 1999, funded one expatriate and a Malagasy staff person. The costs of the Secretariat for the Groupe de Bailleurs de Fonds (GBF) were covered by a Trust Fund with contributions from the major participants (Switzerland, the European Union, France, International Fund for Agricultural Development – IFAD, USAID, and WWF). Coordination with the government took place through a Joint Committee that included international partners, AGEX (implementing agencies such as ONE, ANGAP), and the ministries. The Committee organized annual evaluation field trips that brought 40-50 top ranking officials and their bevy of 4x4s to the field in carefully scripted, but nonetheless eye-opening, confrontations with environmental realities.

In 2000, a decision was made to include the Rural Development sector in the Group's activities, which meant that additional international partners (such as the Food and Agricultural Organization – FAO and the African Development Bank) were integrated into the Group. In 2002 the expatriate working for the GBF left and staffing was reduced to a single person at the Secretariat. While the Secretariat is formally independent, it has been housed at the World Bank offices in Antananarivo, which resulted in some confusion over whom it represents. In the end, the joint group was again separated into environment and rural development donor groups due to the divergence of operating modalities between the two sectors.

For EP III, a Joint Coordination Committee was formed to further reinforce the linkages between the donors and the GoM and to encourage joint strategy and implementation. This included a joint Monitoring and Evaluation system. The system used a common set of indicators that allowed results from various donors to be compiled in a single data base tracked by a Coordination Unit (CELCO) under The Ministry of Environment/DEF. This Joint Committee included more than 50 people representing donors, ministries (Environment, Tourism, Mining), environmental institutions, and the larger conservation NGOs. For several years, the Secretary General of the Ministry of Environment and USAID presided jointly over the committee in tacit recognition of the central role USAID has played in Madagascar's environment sector:

The size of this body and the very frequent turn-over of its members (especially representatives of the Ministry of Environment) eroded its efficacy and efficiency. Malagasy members expressed concern that the government's role was eclipsed by the weight of the donors. Nevertheless, it played an important role in ensuring that donor and GoM investments remained largely in line with the overall strategy, in promoting discussions around the most critical and complex issues (such as land and resource tenure), and in creating a common vision among various players. While the dominance of U.S. actors (both the conservation organizations and USAID) was criticized by other international partners, their influence was based in large part on the long-term relationships they had built with Malagasy partners which gave them an, admittedly, privileged place at the table.

In mid-2009, in response to the political crisis, the CC PTE (Cercle de Concertation – Partenaires Techniques et Financiers – Environnement) was created. It groups the technical and financial partners with the objective of sharing information and experiences. Three commissions were created to monitor key ongoing activities concerning environmental governance, climate change, and SAPM. It was initially facilitated by KfW and is now jointly presided by UNDP and French Cooperation.

Overall major accomplishments

Later chapters will address sectoral challenges and accomplishments directly related to USAID's interventions. This section presents a quick review of some of the most salient cross-sectoral achievements. USAID significantly contributed to all of these, as did many other partners and participants.

Impressive network of national parks. Few – inside or outside the national park system – would deny that there are remaining issues to be resolved, whether lofty (assuring sustainable financial management systems) or mundane (making sure that visitors have access to clean toilets). All this aside, Madagascar's national parks are truly spectacular and much better equipped to receive visitors than they were in 1985 when only the most intrepid ventured forth. There are currently 18 National Parks, six Strict Nature Reserves, and 23 Wildlife Reserves. Six of these attract by far the greatest number of visitors (Isalo, Analamazoatra/Mantadia, Ranomafana, Ankarana, Amber Mountain, and Tsingy of Bemaraha) with visitor levels up to 30,000 per year in some of the parks. The Tsingy is listed as a World Heritage Site, as is, since 2007, a collection of six parks strung along the remaining eastern rainforest parks: Marojejy in the north, then Masoala, Zahamena, Ranomafana, and Andringitra, before arriving at Andohahela in the south.

Thanks in part to the reputation of the park system, Madagascar has become an international tourist destination. International visitors have increased nearly 30-fold since the start of the NEAP (from 12,000 people in 1984 to 345,000 in 2008), largely based on growing international interest in its natural resources.

The rate of deforestation has been slowed. The rapid disappearance of Madagascar's natural forests (and the biodiversity that depends on them) was the primary driving force behind the NEAP. While estimates of early deforestation rates vary widely and were hindered by technological limits of the day, recent studies provide a more accurate picture of deforestation rates since 1990. The rate of national deforestation, as reported in the recent MinEnv/USAID/CI report, was assessed at 0.83% per year between 1990 and 2000. Over the period 2000-2005, the rate declined to 0.53% per year.³⁴

The overall reduction is notable and cause for celebration though it masks considerable, and sometimes worrisome, variability. In comparisons by region, two regions continue to suffer increasing rates of deforestation – one is the area around Antsirabe, whose small remaining forests continue to disappear at over 4% per year. The second is the area (Anosy) around Tolagnara where deforestation rates have more than doubled and now exceed 1% per year. Aside from the Antananarivo area, the only other region subject to rates exceeding 1% a year³⁵ is the critically important forest area around Ambositra, home of Madagascar's renowned wood carvers.

Pressures on the different types of forests also vary considerably. The deforestation rate of the humid forests that comprise about half of Madagascar's total forest area has been reduced by half (from 0.79% to 0.35% per year). While it is tempting to attribute this to project interventions, at least part of this reduction is due to natural factors. The remaining forests often have at least a degree of natural protection, due to their higher elevation (making them less favorable for agriculture) and in some cases benefit from natural barriers (such as cliffs

34 *Evolution de la couverture de forêts naturelles à Madagascar 1990-2000-2005.*

35 These figures refer to Madagascar's 22 regions. There are specific areas within regions that subject to particularly high rates of deforestation (e.g. Ampanihy [1.3%] and Toliara [2%] districts in the southwest dry forests, Vangaindrano [2.1%] sandy forests of the southeast, Antanambao [1.3%] eastern humid forest, Ambanja [.98%] in the north).

or extreme steepness). The dry forest areas are also subject to less deforestation than in the past (0.67% annually vs. 0.4% in the recent evaluation), but the spiny forests continue to be battered at a rate that has seen no change since 1990 and still exceeds 1.2% per year. (The spiny forests are often easily accessible and without natural protection, being in flatter coastal areas.)

Efforts to protect biodiversity through the creation of national parks is paying off. The overall rate of deforestation in the parks is 0.12% per year, compared to 0.65% in the forests that did not have protected status in 2005. None of the six most visited parks had rates exceeding 0.01% per year.

The environment now has a “pervasive presence” in Madagascar. Twenty-five years ago consciousness of the environment was limited to a very small number of largely elite citizens of the island. It simply wasn't an issue for most people. A generation later, the situation has significantly changed. While there may still be population pockets that have not been touched in some way by the interventions of the last quarter century, they are the exception to the rule. From ministries, to local government offices, to the very frontiers of the forest, people have been exposed to the “environmental message” – whether they concur and are ready to join the cause or not. A farmer may still head for the forest to cut a new *tavy* field, but he almost certainly knows that he's not supposed to be doing it and could probably make a connection to the value of forests if pressed to do so.

Within government, ministries other than Environment now routinely address environmental issues (e.g. sustainable financing, tourism, mining), which is also an indication of mainstreaming.

We understand the Madagascar environmental situation much better.³⁶As noted in the introduction, the amount of information available is vastly different now from what it was in 1985. (It is rather astonishing that the NEAP has proven to be so fundamentally correct, given the paucity of information available at the time it was being drafted.) Information improvements have taken place in the scientific sphere with massive studies of biodiversity (that have required some fairly major adjustments of plant taxonomy) as well as the social sciences where there is greater understanding of household economics and decision making. Practical information about agricultural systems and why farmers adopt new techniques have made valuable contributions. With more than two decades of research in many of these fields, we have a better sense of trends. And, a major (if still incomplete) effort has been made to render this information more accessible. Biological databases and limited other information are now collected at the Réseau de Biodiversité de Madagascar (REBIOMA: www.rebioma.net), which also links the user to other databases (i.e. ARSIE).

We have better tools to analyze the ecological and social situation.

Advances in the tools for biological analysis and priority setting have helped to establish Madagascar's preeminence in the biodiversity pantheon (justifying, for example, its designation as one of the hottest Hotspots), but have also enabled scientists to prioritize the most critical areas for national conservation efforts. The availability of

Recent methodological advances provide us with a more accurate picture of deforestation rates, at least since 1990. The national rate of deforestation between 1990 and 2000 is estimated to have been 0.83% per year. From 2000-2005, the rate declined to 0.53% per year.

36 Marine resources are now at a similar level of information/understanding as the terrestrial resources were a generation ago.

such resources was only a dream when NEAP began. They arm the conservation and development communities with information that allows them to be more strategic in their planning and to focus future efforts on what really matters most.

The previous section focused on information availability. Equally important have been the development and testing of tools to enable the conservation community to monitor the environmental situation and refine our understanding. The technology has changed in ways that were unforeseeable a generation ago when even a basic Global Positioning System (GPS) was still the technology of the future and military security restrictions severely limited the utility of the information that it provided. Today, some villagers in Madagascar are using hand-held GPS units to monitor their community forests. Our ability to determine deforestation rates has increased significantly and the technology continues to improve. The recent USAID/CI report based on complex comparisons of LANDSAT images had to resolve some delicate issues of how to deal with cloud cover, for example, as well as how to distinguish different types of vegetation. Such advances will facilitate similar analyses in the future.

Others have improved methodologies for carrying out biodiversity assessments³⁷ or measuring the carbon sequestration capacity of various types of forests,³⁸ to name just a couple of the significant advancements in the methodological domain.

Policies and procedures now exist for most major environment related issues. USAID started with the goal of ensuring that Madagascar had the policy framework in place to better manage its environment. That goal has largely been met. This issue will be addressed in greater detail in the body of the report, but it is sufficiently important and overarching to warrant highlighting here.

Malagasy have been trained to a level where they can take leadership positions. There are now large numbers of Malagasy who have been trained in scientific research, technical fields, management, and environmental leadership. These talented Malagasy constitute an invaluable asset to their country and to the environment movement.

Much of USAID's training impact has been within the institutions and projects where partners and staff have been extensively mentored. There is now a sizeable cohort of people who have more than a decade of project experience; these people are poised to take (or have already taken) key leadership positions in Madagascar. USAID's projects are renowned as training grounds, which can be frustrating when key staff are "poached" by other institutions (often the World Bank, UN programs, and more recently

37 Steve Goodman.

38 Winrock.

MCC), but this has proven to be an effective strategy for “seeding” ideas and building partnerships. USAID also financed seven Malagasy Master’s degree candidates (under the LDI project) for studies in the U.S.; all have returned to play key leadership roles.³⁹

USAID’s approach

We turn now to the characteristics of USAID’s approach that have contributed positively to achieving the results reported in this paper as well as those that have hindered implementation in one way or another. These threads weave through the various projects and activities, sometimes adding a sparkle to the final fabric and sometimes leaving a ragged edge that might be improved in future interventions.

Positive Characteristics. The following attributes have significantly contributed to the success of USAID’s environmental program.

USAID’s environment program has been **integrated** and **holistic, visionary, and focused**.⁴⁰ Madagascar is a highly complex place and USAID did not shy from this complexity, while maintaining a focus on a core set of issues. The program successfully worked at multiple scales and consistently tried to balance conservation and development concerns.

The **sustained involvement of key staff** in the environmental team assured continuity and, most important in the Malagasy culture, helped build credibility and long-term relationships with Malagasy partners. It is notable that for 15 years there was a pattern of Mission leadership where Deputy Directors were consistently promoted to Mission Directors, which made for more stable and informed leadership at the top. In addition, as previously noted, the Environment Team Leader remained the same through all three EP programs.

This continuity contributed to a **culture of applied learning** and adaptive program management. Rather than the more usual pattern of new program managers feeling the bureaucratic imperative to “make his/her mark” every 3-4 years, the program was allowed to gradually evolve, making note of weaknesses in order to improve the next generation of initiatives, but overall staying the course.

Some countries and programs, for reasons not easily explicable, galvanize a coterie of **passionate, committed, and persistent people**. Madagascar has been one of these and USAID has benefited from attracting an extraordinary group of professionals to work on its programs. Many of the same names resurface time and again in project

39 Two of these program graduates work for CI, one worked for LDI, one left Madagascar to work for the UN in Geneva, one served as Secretary General of tourism, one worked for the Ministry of Public Works, and the last worked for the World Food Program. A limited number of professional staff have also gotten travel opportunities. While overseas training has notable benefits, especially in a country like Madagascar where very few people ever have the opportunity to leave the island to get a broader perspective, the immediate impacts of such training have often been less than hoped for. Specifically, the benefits seem to have mostly been restricted to the individual him or herself and have not been integrated into the institutional culture around them. Similarly, the success of programs working to train agents of the state (DEF, for example) has been mitigated. Projects have found that training the older, more experienced cadre is of limited benefit since they quickly return to their previous practices. Training younger members of the agency (or even recruiting new staff) has been more successful, but as long as these people are reintegrated into hierarchical administrative structures the impact is limited and frustrations are considerable.

40 At least one reviewer challenged this conclusion, noting that USAID’s interventions included forests, trains, civil society, agriculture. I would argue that all of these interventions were conceptually linked to environmental challenges and were carried out precisely because the program believed that they were necessary to implement environmental objectives.

documents, consulting reports, and academic papers produced over the last quarter century; many of the people who worked in Madagascar early in their careers are now contributing as “elder statespeople.” Since some of these people have also veered off at various points to work in other countries, they brought these experiences to bear as well. A remarkable sense of teamwork⁴¹ has characterized the venture, largely surmounting contractor partisanship (with the possible exception of bidding season!).

Given the limited funds available, the mission wisely chose to maintain a **strategic geographic focus**, readjusting this focus over time, but never losing sight of its importance. This discipline strengthened the program and without it there would probably be fewer successes to report today.

The Mission put a high premium on **donor collaboration**, in spite of its high transaction costs. In many cases, USAID was called to play a leadership role as a senior and respected actor, even if not the most consequential one in terms of financial resources. As such, it was able to leverage its many ideas and relatively few resources (especially from EP II on) to have an impact disproportionate to the amount of funding it contributed. This happened both at the planning level in Antananarivo as well as the project implementation level in the field.

USAID was one of the few donors who placed **senior expatriate staff in posts outside the capital city**. This helped to ensure a reality check from the field while promoting vertical integration of programs (at the policy and field levels). The high profile field presence contributed to USAID’s reputation as a highly respected leader in environmental programs in Madagascar and, in more than just a few cases, strong advocacy from USAID’s field projects mobilized a response not only from USAID, but other major donors. Senior field expatriates also played an important mentoring role for Malagasy working in regional offices and at the grass-roots level, thereby building capacity outside the capital.

Lastly, **quality program documentation** builds the bridge to “room for improvement” as some projects did an outstanding job at being self critical and fully documenting what they had done, while others have been significantly less forthcoming. Some of the implementers have been notably consistent in ensuring that documentation from their projects is made readily available (CDs of all project and consulting reports compiled at the project’s end, for example); all future projects should be expected to meet this gold standard.

Room for improvement in USAID projects and approach. The following issues constrained implementation in the field and warrant consideration in the planning and execution of future interventions:

Insufficient funding. Funding levels did not consistently match the magnitude of the vision and the amplitude of the challenges; biodiversity earmarked funds added critical resources to the portfolio but forced interventions into boxes that were sometimes too tight to respond to the vast scope of Madagascar’s natural resource management problems.

More Democracy and Governance and Economic Growth funds needed. The constancy of environment (biodiversity) funds was not matched by those available for DG and EG. This was a huge handicap to the program as those sectors were critical to environmental success. In addition, uncertainties around this funding engendered some bureaucratic gymnastics that had real effects on people and programs and probably compromised USAID credibility in certain cases (when, for example, projects were prematurely closed).

41 This camaraderie has been much appreciated in the preparation of this paper.

Sectoral divides hindered holistic implementation. USAID institutional and bureaucratic systems and, especially, sectoral divides, made it extraordinarily difficult to implement a truly holistic approach on the ground. Persistent attempts to overcome these difficulties at the Mission and field level were only partly able to compensate for the lack of flexibility and the near impossibility of creating projects that were as multi-sectoral as the problems they were trying to address. (e.g., one Env/RD funded project focused on production, while an Economic Growth project focused on commercialization of the same crops with the same target population).

Procurement issues. Procurement problems (e.g. difficulties in assuring timely rebidding so as to maintain continuity in project activities) placed unnecessary stresses at key points and created significant inefficiencies in implementation. In a country where local partners (including government) are terribly weak and in some cases the projects act as proxy for government services (basically providing environmental monitoring and enforcement), even brief lapses in project attention can have serious implications. Restrictive funding mechanisms (e.g., MOBIS, which disallowed infrastructure expenditures) artificially limited the types of permitted interventions, severely handicapped implementation, and compromised relations with local communities when projects were unable to respond to their most urgent requests.

Implementation by a multiplicity of projects.

The program was implemented through a multiplicity of projects and a plethora of implementers. This often resulted in inefficiencies and costly duplication of administrative services (even small projects had to have full fledged Admin/Finance teams). Coordination costs were also high when as many as three or four projects might be working around a single set of issues in a single geographic area.

USAID's structure and procedures made it nearly impossible to create projects that were as multi-sectoral as the problems they were trying to address.

Inconsistent suspension and evacuation procedures.

USAID projects fare poorly during Madagascar's intermittent political crises, often with negative consequences on program results (as will be discussed in later sections of this paper). Here, it should be noted that the apparent randomness in the way these situations are handled also undermines the clarity of the U.S.' message to the GoM. In 2002, expatriates working on contracted projects were sent home for several months (with serious consequences for project implementation). There may have been reasons for doing this (security was cited at the time), but if so, was it logical that related projects funded under cooperative agreements were not affected?

In 2009, in large part to send a message to the new regime, environment projects were suspended, while much larger health projects were not. While the humanitarian concern behind keeping the health projects going may have been laudable, what message really went out to the government when these projects continued? And do we really want to imply that our environment projects have no humanitarian value? The Department of State's internal logic⁴² on these issues can appear arbitrary to local governments, beneficiaries, and partners, and as such decisions can locally damage USAID's reputation and credibility.

Projects insufficiently self-critical. At least in the official documentation, projects too often tended to be insufficiently analytical and self-critical (though this was not always the case, as noted in the "positives" above), making it hard to learn lessons and improve approaches. One possible interpretation of these documents may be that this problem actually got worse over time as

42 Based on federal regulations and the differing in-country legal status of contractors and NGOs.

contractors and grantees got more invested and fearful of losing the next bid if they were perceived as underperforming. Reporting success at times seems to have taken precedence over managing for results.

The following chapters review the progress made in four broad areas considered vital to the success of Madagascar's environmental agenda: (1) policy frameworks and institution building, (2) forest management, (3) reducing local pressures on natural resources, and (4) valorizing the economic benefits of natural resources. There is, obviously, considerable overlap between these closely intertwined topics.

POLICIES AND INSTITUTIONS⁴³

This section on policies and institutions discusses first the policy framework, followed by institutional strengthening.

IMPROVED, ENVIRONMENTALLY FRIENDLY POLICY FRAMEWORK

A robust policy framework has always been seen as critical to preserving Madagascar's environment. USAID projects since EP I have maintained a balanced portfolio, addressing policy frameworks and institutional strengthening on one hand, and field interventions on the other. Those most active on the policy front have been: KEPEM (EP I), PAGE (EP II), and Jariala (EP III).

Work in this domain has included both helping Madagascar define appropriate natural resource management policies and providing the tools needed to implement these policies (e.g., information gathering, monitoring, and enforcement). These "tool kits" have been accompanied by training of government and agency personnel, as well as private Malagasy firms and consultants to ensure the availability of local technical expertise (to do environmental impact assessments, for example).

The Environmental Charter (1990) and the NEAP (1990) provided the policy foundation for all subsequent programs. They were visionary and extensive in their reach. Notably, from the outset they integrated conservation and sustainable economic development objectives. Intended to define the environmental agenda for 15 years, the NEAP was superseded by the Madagascar Action Plan (MAP) when it was issued by President Ravalomanana in 2006. The MAP was a comprehensive development program for Madagascar that focused on economic development, while highlighting environmental issues (Objective 7: "Cherish the Environment"). It built on principles established in the NEAP. MAP's slogan ("Madagascar, Naturally"), like the document itself, was more oriented to international consumption than to a domestic audience. The international partners, many of whom had been instrumental in its drafting, were appropriately impressed and, as had been hoped, began signing on to support various elements of the plan.

In addition to these overarching policy frameworks, specific codes and decrees governing forestry (1997), parks (2002), and mining (2006) were all issued, many of them with considerable help from USAID's environmental policy projects.

The Forestry Law deserves special mention. It was a critical step forward in 1997 as it allowed the State, in principle, to delegate management authority over forests to other actors, either public or private. In theory, this opened up opportunities for co-management by local communities, sustainable management contracts with private operators, and delegation of authority over parks. In fact, the decrees that would allow full implementation of this delegation have not yet been promulgated, except for the GELOSE Law and Forest Management Contract (GCF) decree that are focused on

43 Key documents for this section are Brinkerhoff and Yeager, *Madagascar's Environmental Action Plan: A Policy Implementation Perspective* (1993), Shaikh, *A Review of the Impact of the KEPEM Program on Environmental Policy in Madagascar* (1999), and Raik, *Forest Management in Madagascar: an Historical Overview* (2007). The latter reviews forest policy since pre-colonial times in Madagascar.

local communities. The Jariala project was moving ahead with the Ministry of Environment on texts that would expand delegation authority more generally, but they were caught short by the 2009 political crisis and the new rules were never put into effect.

Other key policies that have been instrumental in advancing the environmental agenda in Madagascar include:

Protected Area Entrance Fee (DEAP) regulations (1991) that allowed 50% of park entrance fees to be allocated to proximate communities as needed to address local development needs.

The **MECIE** (Environmental Impact Law, 1993) that required identification and mitigation of the negative environmental impacts associated with all economic investments.

The legal framework needed to create **Foundations** (1994 and revised in 2004). This was a critical step to working out sustainable financing mechanisms for both the national parks and Tany Meva.

GELOSE (1996, a forest management approach promoted by the French) and **GCF** (2001) laws that allowed for the delegation/sharing of management responsibilities with local communities.

The **Code des Aires Protégées (COAP)** (2003) that broadened the designation of national parks to include all six IUCN categories and, significantly, for the first time allowed for co-management of PAs.

Policy support projects have clearly recognized that while laws and overall frameworks are necessary to improve resource management, they are far from sufficient. Managers responsible for implementing such laws require practical tools to enable them to carry out their responsibilities. The USAID projects provided pragmatic and practical tools to help the ministries and other implementing agencies do their jobs well. Examples include:

The Environmental Impact Assessment Toolkit: Tools for tracking requests and decisions, training packages for people preparing and analyzing environmental dossiers.

Forest fire monitoring toolkit: GIS tools needed to detect and monitor forest fires, as well as track events over time.

Geographic databases Maps and statistics for USAID focal areas.

The Environmental Information Network System Association (ARSIE): Created in 1998 to facilitate access to environmental information at the national level. Among other things it collects environmental information, legislation, conservation and other data and makes them available through databases accessible via the ARSIE website: www.arsie.mg.

The Durban Vision prioritization group used **MARXAN, MAXENT, and ZONATION** spatial analyses tools that allowed analysis of huge data sets on the distribution of threatened species and then overlay of maps as needed to focus attention on ecological zones that would have the most impact on protecting threatened species.

INSTITUTIONAL STRENGTHENING

Environmental Institutions and Structures

Madagascar's partners have invested considerable attention and funds into setting up, nurturing, and reinforcing the institutions needed to implement the ambitious environmental vision laid out in the NEAP. Given Madagascar's extremely fragile State and lack of experience with results-oriented governance, it is perhaps not surprising that this has been at best an inefficient and at worst a Sisyphean process.

Donors have struggled from the outset with issues of where to place the core environmental institutions; there has been continuing tension between, on the one hand, efforts to engage government fully and promote ownership of the environmental movement and, on the other, trying to protect people and programs from the gross inefficiencies and potential manipulation/corruption to which they were vulnerable when fully embedded within the government. As independent and semi-independent institutions were created and supported (salary subsidies, equipment) to a level where they could become effective, rivalries have occurred with related government agencies. (This happened notably in regard to ONE's relationship with the various ministries to which it has been attached and ANGAP's relationship with DEF).

And yet, when projects and programs have tried to counterbalance with greater support to government institutions the results have been less than stellar: training investments are lost when ministries disappear or staff is transferred and agencies "pick and choose" among project elements (e.g. ignoring mechanisms designed for transparency while eagerly accepting material and salary support). The credibility of donors perceived to be closely involved with corrupt agents of the state can be severely compromised. While these issues are to be expected at a certain level, in Madagascar they are more systemic than occasional. The basic conundrum has yet to be resolved in any satisfactory way.

Still, there has been significant capacity building at the "technocratic" level within various ministries and institutions. Many people know what they're supposed to do and how to do it, whether at the ministry or field office level. The problem is less one of knowledge and competence, as it is the lack of government support and the authority to carry out one's job correctly. This point will be addressed further in the section on governance.

Even as they were defining the new institutional arrangements with the GoM and other donors, USAID programs recognized that the relatively long commitment to implementing the NEAP (three phases over 15 years) would only start the process. Without assurances of funding for institutions and processes started during the EPs, there was little hope of keeping the initiatives alive over the longer term. If EP I was focused largely on creating the institutional structures (e.g., Tany Meva) that would be necessary to "carry" sustainable funding mechanisms, EP II and III focused on identifying funding mechanisms that would not be dependent on project funding cycles and the typically short attention spans of donors.

While there has been ample frustration over the unevenness of policy implementation, projects working on carbon credit initiatives note that without the enabling policy framework (NEAP, Durban Vision, GELOSE in particular) it would be much harder to advance on carbon sales. The existence of these policies has been crucial to reassuring international partners and to implementing the complex institutional relationships needed to co-manage protected areas and demonstrate avoided deforestation.

The basic strategy for the PAs has been to create autonomous management structures (see ANGAP below) with long-term funding provided through an affiliated Foundation. Similarly, the Tany Meva Foundation was established to provide at least modest financing to local environmental interventions.

Direction des Eaux et Forêts. Madagascar's forest service was established as a control and enforcement organization during the colonial period when they were also responsible for encouraging local communities to plant eucalyptus plantations. In the 1960s and 70s DEF planted vast tracts of pine (often on land expropriated from local communities). As the main enforcers of the exclusion policy in protected areas and the government authority that seized lands for plantations, they have traditionally had an antagonistic relationship with local communities. They were, however, the jewel of the colonial administration in terms of training and professionalism, a characteristic that continued until the dramatic policy changes of the early 1970s. Problems only deepened with the increasing financial crises that deprived the organization of the funds needed to work properly at the same time that the government promoted what was essentially an open access regime to natural resources.

Over the past 40 years, respect for the forestry service has plummeted and they have been consistently handicapped by lack of capacity (e.g. transport) to enforce forest laws in very remote and inaccessible areas. In addition, as much of the forestry service is based in remote outposts and has been very poorly trained and paid, there has been a consistent problem of motivation and widespread petty corruption (at the local level) and not-so-petty corruption at the national level.

These weaknesses were well understood in the design of the NEAP. Two strategies were devised to overcome these weaknesses: capacity building of the DEF itself and the creation of semi-independent agencies (ONE and ANGAP) to implement some of the EP mandates viewed by the donors as most essential. The tension between creating semi-autonomous institutions (in the expectation that they would be more effective) while trying to reinforce government structures frustrated by their perceived marginalization has been a recurrent theme throughout the EPs.

Under EP I, U.S. institutional efforts were focused on creating ONE and ANGAP, while the World Bank put resources into DEF capacity building through the Forest Management Project.⁴⁴ The Debt-for-Nature project did train a cadre of some 400 nature protection agents at the local level. These people, recruited primarily from the rural areas where they lived, did not have enforcement power. Instead, they acted as liaisons with the forestry service for environmental education and "dissuasion" of illegal activities. Debt for Nature also helped to construct some DEF offices, provide uniforms, and otherwise increase the professionalism of the forest service.



Capacity building of national environmental management structures has been a pillar of USAID's program in Madagascar since EP I. In this picture, foresters practice techniques necessary for forest zoning. (Photo credit: Andy Keck)

44 This project closed early after a poor evaluation.

Once ANGAP was founded, DEF was deprived of management responsibilities for the national parks. (DEF opposed the creation of ANGAP, and jealousy over the greater resources contributed to the park service have been a continuous source of friction.) All other forests (about 90% of the total) remained under their purview, however.

KEPEM supported DEF on forest finance issues. The project initially estimated that stumpage fees were inappropriately low in relation to the real value of the wood and, in addition, only 2% to 5% of the fees were actually being collected. It worked with the forestry service to determine reasonable charges for wood extraction and to improve fee collection. The funds were partly paid into a National Forestry Fund (FFN) and partly allocated to reforestation activities.⁴⁵

Administrative and financial issues continued to plague the DEF. KEPEM evaluations noted that DEF was the only EP executing agency that received no direct donor subsidies.⁴⁶ As a result, staff were paid little and were often not very motivated to carry out their responsibilities.

Recognition of the continuing shortcomings of the forestry service led to the EP II strategy of transferring forest management from DEF to local communities. (See co-management). There was some resistance in the forestry service to ceding power under these arrangements, a tension that has persisted over the years. Attempts to strengthen the forestry service continued; the MIRAY project focused on DEF information systems, both at the national and regional level. Maps that allowed agents to carry out monitoring and evaluation of forest resources were prepared. A complete review of wood harvesting permits was undertaken.⁴⁷ Databases to enable follow-up were created in the priority corridor areas.⁴⁸

By the time Jariala (EP III) arrived, with a primary mission to reform DEF, it was judged to be still "outdated, under-financed, and unmotivated, both at staff and management levels." (Jariala Project Final Report 2009) Furthermore, discussions with stakeholders confirmed that they wanted a strong and more transparent state structure to manage forest issues. The project prepared a comprehensive reform plan (led by the Director General of DEF and involving extensive consultations with national and field staff). Implementation began in 2007. The project had to walk a tight wire between maintaining a sense of "ownership" within the Agency, while ensuring that there was indeed progress toward implementing necessary reforms. The approach involved embedding long-term staff and consultants within the agency as well as improving communications systems.

Progress was slow (in part due to frequent turnover of senior staff at the Ministry), but not insignificant. The World Bank committed to funding a voluntary departure plan (the average age of local forestry agents was 52 years) to rejuvenate the staff. The GoM agreed to the principle of hiring an additional 1,000 people over five years, and a new organizational chart⁴⁹ was put into effect. In the end, both retirements and recruitment have been delayed due to the political crisis of 2009, though

45 Prior to 1993, the National Forestry Fund never collected more than 200 million Fmg. By 1996, with KEPEM support, revenues had increased to nearly 2,000,000,000 Fmg (a 10-fold increase). Ambiguities over how these funds were being used persisted.

46 In 2004, DEF's operating budget was about \$400,000 to manage some 6-7 million ha of forest (WB EP III Project Appraisal Report).

47 The 2001 review found that only 13 of the 418 permits reviewed were fully in order. Another 71 were maintained on condition that the necessary fees were paid. A full 335 permits were revoked because they had expired or were not in compliance with the rules. (MIRAY, 17)

48 How to ensure the sustainability of such mechanisms remains perplexing. By the time Jariala arrived (EP III), they found no trace of the DEF databases introduced by MIRAY under EP II.

49 Jariala put significant effort into improving personnel management. Success was elusive: "Human resource management is a sensitive subject as it is perceived by decision-makers as the sole tool to establish their internal "political" management. Proposals aimed at a transparent action were ignored outright..." (Jariala 16)

250 new agents were employed in early 2010. The possibility of creating an autonomous semi-public agency (on the model of ANGAP) that would be called ANGEF was discussed (and supported by the World Bank) but ultimately rejected by the GoM.⁵⁰

Numerous technical interventions increased the capacity of DEF to carry out its core responsibilities. Regional offices were formed and trained. A fully operational GIS unit was established at DEF (with local capacity in several regions) and a Mobile Control Unit was tested. The GoM later followed recommendations (already suggested by KEPEM) to separate management and enforcement roles, creating an autonomous control directorate (Directorate for the Control and Improvement of Integrity), linked to DEF and represented in all 22 regions.

On the financial side, the Ministry (working with Jariala) strongly encouraged the transformation of the Forestry Fund into an Administrative Public Entity (EPA) in order to promote greater transparency and improve oversight. It also recommended that a significant portion of forest revenues be returned to regional/local offices in order to motivate local forestry officials and ensure that they had the resources needed to carry out their jobs. Much work went into creating the EPA, and it was signed by the Ministry of Finance just before the project came to a screeching halt with the political crisis of 2009.

Initial results of the reform efforts are promising, but those most closely involved remain wary. As the Jariala final report stated, "The main concern today is to sustain these results as a political decision could wipe them out." We can hope that at least the most immediately useful technical tools transferred (inventory methods, data management, "how-to" manuals for certification) will become part of the daily praxis, even if progress on some of the more dramatic reforms has been put on hold.

ONE. The National Environment Office was founded during EP I's KEPEM project when there was still no Environment Ministry and there was a desperate need for management of the environmental dossiers. It was initially intended to be a "small, but powerful, unit staffed with senior level technicians, whose mandate was to serve as leader, orchestrator, and monitor of the EAP" (Brinkerhoff and Yeager 1993, 20). It would also coordinate all donor assistance under the EAP. Three donors (USAID, UNDP, and the African Development Bank) provided initial support. It has had a rocky start-up, however, and was caught up in endless bureaucratic wrangling over its place and its responsibilities, especially once the Ministry of Environment was created. Initially given high prominence under the Ministry of Finance, it was later "side-lined" to the Ministry of Agriculture and then transferred among six different ministries between 1990 and 2000. ONE inevitably fell into a contradictory situation regarding its policy leadership role:

At the heart of the problem is that ONE no longer has the final authority of policy making, yet retains de facto power through its well-staffed structure, budget and general behavior vis-à-vis the Ministry of Environment and other EP II institutions... (PAGE policy advisor Gregory Wordsworth, 2000)

Over time this was resolved by reducing ONE's policy mandate and refocusing its mandate on environmental impact assessments. This meant that greater attention to strengthening policy within the mainstream government agencies was necessary.

50 By the time ANGEF was proposed, the idea that parastatals such as ANGAP would automatically be more motivated, transparent, and better governed was losing credibility. In addition, some of the key functions of ANGEF were inherently government issues (e.g. contracts for forests and protected areas). There was a fear that a semi-autonomous ANGEF would merely reproduce the endless bureaucratic wrangling and exorbitant operating costs that had characterized ANGAP.

The AGERAS process was developed between EP I and EP II to advance regional planning as needed to implement the eco-regional approach. AGERAS regional technical units were established under ONE to implement forest co-management arrangements and otherwise participate in the eco-regional process. This proved to be an overly heavy mandate for ONE and, after the 2001 mid-term review, a decision was made to allocate some of ONE's responsibilities to other organizations so that it could focus on its core mission. A new organization called Service d'Appui à la Gestion Environnementale (SAGE) was established to oversee AGERAS and co-management activities, while ONE continued to manage the environmental impact portfolio and environmental information systems (as it does to this day).

Not tied to the generally dismal employment conditions of the public sector, and with considerable donor support, ONE has generally been able to recruit good staff and keep them motivated. It is notable that the Director General has remained in his position since the beginning of EP III, which is a rarity in the more customary "revolving door" of Malagasy institutions. This contributed to a more positive working relationship with USAID leadership and projects than has been the case with some of the other Malagasy environmental agencies. ONE has, however, been recently criticized for inconsistent application of the MECIE regulations, even after extensive mentoring, leading some to question whether their "institutional heart" is really in the task.

During EP II, the eco-regional focus highlighted the lack of coordinating institutions at the regional level. While the projects, by default, carried out some of these responsibilities, this was correctly viewed as unsustainable. MIRAY, LDI, and others worked with local partners to establish participatory and neutral planning structures that brought together state, NGO, civil society, and project actors in a regional "platform" to deal with the practical aspects of eco-regional planning and action. These platforms, which have different names (Comité Multi-local de Planification – CMP) in Fianarantsoa, Comité Régional de Développement in Anosy) continue at various levels of operability today and the model has been picked up by various other local planning mechanisms.

ANGAP – Madagascar National Parks.⁵¹ USAID was the principal donor responsible for the institutional development of ANGAP. From the outset it was determined (based on prior experiences around the world) that park management should be independent of government. This was intended to avoid diversion and diffusion of park revenues and to ensure that professionals capable of implementing technical specifications needed to protect the resources were given management responsibilities. ANGAP was initially created (1990) as a non-profit association managing the parks on behalf of the Malagasy people, with power delegated by the State. This independent status meant, for example, that it was not subject to civil service hiring and firing regulations. Initially, nearly all operational funds were provided by USAID; over time funding sources were diversified. Staff were initially recruited primarily from DEF.

While ANGAP's technical skills have significantly increased there have been recurrent problems with serious financial mismanagement. A 2007 IUCN audit noted that ANGAP had increased its technical capacity to manage the park system, but still faced significant challenges. Specifically, the management of 12 parks (including the five most visited parks) was deemed satisfactory, three others were ranked "average," and the remaining 23 were judged "marginal" in terms of their management.

During the design of EP III programs, there was increasing pressure to "graduate" ANGAP and provide it direct funding rather than mentoring the agency via one of the contractor projects, as had happened previously. Substantial direct funding (\$2 million) to ANGAP was subsequently included under the MIARO project. During implementation, suspicion of mismanagement of an initial tranche of funds was later confirmed by an audit. USAID made future fund transfers conditional on ANGAP's adoption of a more robust financial management system. ANGAP resisted implementation

51 A key document for the early history of ANGAP is Swanson, *National Parks and Reserves, Madagascar's New Model for Biodiversity Conservation*, (1996).

of the new systems even when they were approaching bankruptcy. As such, USAID reallocated the \$1.3 million originally allocated to ANGAP to the creation of new terrestrial and marine protected areas. At this point the German agency KfW offered to partner ANGAP, implying that USAID had somehow failed the relationship. ANGAP was rebranded as Madagascar National Parks and KfW began another round of funding, accompanied by financial and administrative technical support and training. The recent misdirection of park funds in Antsiranana, similar to the Ranomafana abuses that caused the initial USAID audit, suggest that the problem has not yet been resolved.

Tany Meva. Tany Meva was established (in 1996) as a Foundation to carry out environmental activities at the local level. Initial funding was obtained through Debt-for-Nature swaps with the idea that this would be a significant long-term strategy for financing local level interventions and could eventually substitute for donor funding of community projects (such as that provided under SAVEM, LDI, and ERI). Tany Meva's stated goal remains "to become a national institution of reference in the funding of programs or conservation actions and the sustainable management of the environment on the community level." In fact, Tany Meva occupies a relatively modest niche in Madagascar's institutional landscape. It is, however, notable that Malagasy have begun to act as "donors" and not only recipients of project funds. Sustainable funding issues for Tany Meva are discussed below; the Foundation now gives out about approximately \$0.5 million per year to community groups who propose projects related to climate change, the urban environment, forest co-management initiatives, and environmental education and communication.

Sustainable Financing⁵²

The magnitude of Madagascar's environmental challenge has humbled its partners since the first days of the program and sent them scrambling for additional funding sources. The first debt-for-nature swap (1981) predated the NEAP and financed the \$2.1 million conservation program around protected areas as described in the projects section of this report. Since then, Madagascar has become one of only a few countries in the world that has had experience with both commercial and bi-lateral debt-for-nature swaps.

Acknowledging the need for long-term and reliable sources of funding, Madagascar and its partners developed a sustainable financing strategy. A Sustainable Financing Committee was created in 2000 (funded by the PAGE project) involving government, NGOs, private sector, and concerned individuals. The Committee organized a symposium the following year and began analyzing the feasibility of sustainable financing mechanisms for various components of the Environmental Program. Debt-for Nature Swaps and conservation trust funds were identified as the most likely near-term funding strategies, followed by carbon funding and tourism-related mechanisms.

Proponents of sustainable financing initially focused on assuring the long-term financial needs of the Madagascar national park system and Tany Meva.

The Protected Area and Biodiversity Trust Fund. Based on the strategy devised by the Sustainable Financing Committee, the Foundation for Protected Areas and Biodiversity⁵³ was created in 2005. Later that year, the President of Madagascar announced that 8% of the multilateral debt (that had been forgiven) would be allocated to protected areas. (This intention was thwarted by the 2009 political crisis.)

52 A key document for this section is Marie de Longcamp, *Le Financement de la Biodiversité à Madagascar*. (2007).

53 The French legal system has very little experience with foundations and the idea of philanthropic foundations is little known in francophone circles.

The Protected Area and Biodiversity Trust Fund was initially estimated to need about \$1-2 million per year (when parks represented less than 2 million ha) to meet a significant portion of park operations expenses. At the time, 50% was considered a reasonable share for the trust fund, with other funds coming from park revenues, government, etc. The size of the endowment needed to finance these recurrent expenditures (the Trust Fund “share”) was estimated at approximately \$20 million.

With the expansion of the protected areas under the Durban Vision/SAPM (to 6 million ha, of which 2.65 million ha will be managed by Madagascar National Parks and the rest by various co-management regimes), recurrent costs of management skyrocketed and are now estimated to be on the order of \$17-\$18 million annually.⁵⁴ In 2005, the Trust Fund for Protected Areas and Biodiversity in Madagascar (FAPBM) was created (with commitments from AFDI, CI, FFEM, KfW, WWF, and the World Bank) to serve this function. The initial goal was to provide an annuity of at least \$2.5-3 million per year to the protected areas. This has now been increased to a goal of \$5 million, which would cover about one-third of the MNP management costs. Currently the fund has about \$33 million, is expected to increase to \$50 million in the next year or two (negotiations to secure the funding are currently ongoing), and may eventually reach \$100 million.

Since the Fund is unlikely to generate sufficient funds anytime soon, it has been proposed to complement the trust funds with fees from eco-tourism concessions in the parks (approved in principle, but no concessions have yet been signed), a possible surcharge on air tickets into the country, and a portion of the park entrance fee (the GoM currently contributes about \$1 million from tourist taxes and park entrance fees).

The **Tany Meva Foundation’s** initial funding was set up as part of the USAID non-project assistance activities. In exchange for U.S. budget support (provided as the GoM fulfilled policy conditionalities), the GoM invested the equivalent of \$12 million (in Malagasy francs) to establish the Foundation. Set up under the old laws, the Foundation was severely handicapped by rules requiring, for example, that funds be held in-country and in local currency. Monetary devaluations quickly decimated the initial endowment. Since 2004, when the new Foundation Law was voted, funds may be held in off-shore accounts, with interest repatriated tax free to the country. The \$16 million trust fund generates approximately \$4-500,000 per year of funds that are used for small grants, as described above.

The initial presumption behind the EP phases, that government would somehow “graduate” to a level where structures were sufficiently robust and policies sufficiently internalized that they could manage environmental issues independent of donor support seems, in retrospect, to have been quaintly naïve.

Both Foundations are governed by independent boards made up of experts who bring specialist knowledge (private sector, conservation, philanthropy, finance) to bear. In both cases a majority of members hail from civil society. (The FAPBM remains under the tutelage of the Minister of Environment but the Ministry has no control over the allocation of resources.) All board members except one must reside in Madagascar.

One concern of funding these activities with an endowment is that yields can vary considerably based on the world financial situation. This poses risks, particularly for the park system, which must have a minimum income to ensure its operations.

54 These are anticipated recurrent costs from 2012 or whenever the system is fully established and do not include the approximately \$50 million needed to establish the new protected areas.

Eventually, both funds might benefit from infusions of carbon funds, though there is a dangerous tendency to overestimate the likely revenues from carbon funds (at least in the short to medium term) and imagine them covering far more needs than is realistically possible.

The use of carbon funding mechanisms to fund Payments for Eco-systems Services is addressed below.

Discussion

In general and without exception, all projects that have worked on institutional strengthening report that they were not able to fully implement their objectives, and that the challenge was too great for the time allowed. In retrospect, the initial presumption behind the EP phases (that government would somehow “graduate” to a level where structures were sufficiently robust and policies sufficiently internalized that they could manage environmental issues independent of donor support) seems to have been rather quaintly naïve.

One question that has surfaced with some regularity is the wisdom of putting so much effort into parallel structures (ONE, ANGAP) at the expense of directly strengthening government institutions (the ministries, DEF). Jariala worked with DEF in EP III, but belatedly. Would the situation have been any different if the same intensity of efforts had gone into reforming and energizing DEF from the outset? It is hard to answer this question retrospectively; many people suspect that even if significant funds had been put into government structures, the results would have been barely different, given all we now know about larger governance issues in Madagascar. Without doubt, the lack of effective enforcement of forestry policy (those powers never having been transferred to the new structures) has undermined many environment sector initiatives.

On the policy front, the MECIE, which mobilized enormous resources and effort under both KEPEM and PAGE, is considered to be a landmark success. It provided the GoM with the tools it needs to monitor investments and to protect critical natural resources. Results of MECIE implementation have been a mixed bag, however. There have now been a multitude of small environmental impact assessments, some of which have been properly carried out and monitored. But there have also been abuses where the process appears to have been used for little more than extorting funds from vulnerable investors.

There have also been some notable successes in getting the biggest actors to participate. Rio Tinto’s environmental assessment of the ilmenite mining operation near Fort Dauphin took years and the studies are generally well regarded. USAID was able to influence the company to conduct participatory consultation with local communities; this exposed numerous potential problems and contributed to QIT Fer Minerals Madagascar (QMM)’s decision to join the Global Development Alliance that worked on social mitigation issues for several years. The recent Sherritt nickel mining impact assessment, carried out on a huge scale in an ecologically fragile zone at Ambatovy, was much less rigorous and demanding than the one to which Rio Tinto was subjected, however.⁵⁵

As huge new mining projects move into Madagascar, the need for rigorous environmental assessments skyrockets. The technical challenges of evaluating and monitoring such investments quickly surpass local expertise. Madagascar is vulnerable to pressure from powerful interests, on one

55 Sherritt’s operation will mine nickel and cobalt near Moramanga (near the Mantadia-Zahamena corridor) and then transport the slurry via a 218 km buried pipeline to an industrial processing plant near Toamasina. Approximately 1,300 ha of ecologically sensitive semi-pristine forest will be cut at the mine site and extraction will produce acidic slurry that will have to be treated using limestone quarried near Toliara. There are concerns, for example, that the Impact Assessment addressed the possibility of a cyclone on the pipeline carrying the acidic slurry, but didn’t consider the possibility of two successive cyclones, which is not an infrequent occurrence in the affected zone.

hand, and its possible inability to comprehend the complex technical implications of sophisticated mining operations, on the other. Large western companies can be monitored by public opinion (alerted by the conservation agencies), limiting their scope for massive abuse in an environmentally sensitive and high visibility country like Madagascar. More worrisome are investments by countries or companies where there is little accountability. The emerging dominance of Chinese mining and oil interests in Madagascar raises worrisome issues in this regard.

MECIE's impact was expanded when the World Bank integrated many of its requirements and guidelines into the new mining code.

From policies to implementation. Having a complete policy framework for the environment and the tools needed to implement the policies represents an enormous step forward. But having tools and using them effectively are two different things. It is not, as several practitioners have reported, an accident that some policies are never effectively implemented, even when all the necessary tools are available to do so. Furthermore, decisions on whether information will be used are highly political. Several project reports indicated that monitoring tools have been neatly “forgotten” when the information they provided proved too politically sensitive or economically inconvenient. As noted in the quotes below, this is a persistent problem area and it has not significantly improved over time.

In 1999, assessing what had happened under EP I, Asif Shaikh noted:

Many of the most intractable current problems in enforcing environmental policy are, at their root, problems of “governance and transparency.” It is unrealistic to expect environmental programs alone to solve problems with much deeper socio-political origins. However, it is even more unrealistic to expect environmental policy to succeed if they are not addressed. (Shaikh 1999, 15)

In 2003, at the outset of EP III, The World Bank confirmed that:

*Over the years Madagascar has been able to streamline the environment into many of the sector policies and develop institutions capable of dealing with many important aspects of environmental governance. However, there is a **widening disconnect** [emphasis added] between stated policies and regulations, and the capacity to monitor and ensure enforcement of the new frameworks on the ground. (World Bank 2004, 11)*

On the sustainable financing front, enormous progress has been made. The commitments of various donors demonstrate notable collaboration. Completing the necessary endowments is expected to proceed without significant difficulty unless the government attempts to meddle in the financial affairs of the Foundations or the recipient institutions (notably the Madagascar National Parks) lose the confidence of the donors.

A related and as yet unresolved problem is how to sustainably finance ONE and the government implementing partners. Currently, ONE expenses are largely paid for by fees paid during the MECIE process, making ONE uncomfortably dependent on revenues from major mining interests – though at least they have funds to maintain their operations.

The government agencies pose a greater challenge. Until the crisis, the donors were financing approximately 70% of the Ministry of Environment budget. It is essential that the DEF (or whoever ends up with monitoring and enforcement authority within the government) be funded in order to do its job, but the culture of corruption within these government agencies makes it much more difficult for the donors to establish sustainable financing mechanisms with any confidence that the funds will be used as intended.

PROTECTED AREA DESIGNATION AND MANAGEMENT

THE NATIONAL PARKS

EP I was heavily focused on creating the national park system for which Madagascar is justifiably renowned. This built on the seminal 1986 nationwide survey (Nicoll and Langrand 1989) of existing protected areas and their known resources. Beginning with 450,000 ha under protected status, the parks expanded to 1.7 million ha over the next several years.⁵⁶ These parks were nearly all inherited from the colonial park system⁵⁷ that had reserved areas of particular beauty or known biological interest.⁵⁸ As a newly created agency, ANGAP was given what was called “coordination responsibility” for the 44 protected areas that included both national parks (there were 10 at the time) and strict natural reserves. During EP I, ANGAP had neither field management responsibility nor authority over funding, except for two small reserves and Isalo Park, for which they were the designated principal operator.

Several long-term international advisors (under SAVEM) worked very closely with ANGAP during this period to create the necessary organizational structure and procedures to carry out the coordination tasks. The remaining nine parks (as well as several of the reserves) were each assigned an international operator (in some cases a consortium) that managed the parks during this period when ANGAP was still becoming operational. The seven parks mentored with USAID support (and where ICDPs were introduced) were: Andasibe-Mantadia (principal operator: VITA), Ranomafana (SUNY/Stony Brook), Amber Mountain (WWF/CARE), Masoala (WCS/CARE), Andohahela (WWF), Zahamena (CI), and Isalo (ANGAP). A sister park relationship was established with the South African National Parks Board in 1995 and useful training and exchange visits took place.

While much of the commentary on this early period focuses on the ICDPs, important advances were also being made to better manage the park natural resources. Masoala Park, for example, carried out exhaustive biological inventories that informed the park boundaries and were used to establish a zoning plan with sustainable use buffer forests. Ranomafana also drew up an early comprehensive Park Plan (1995), identifying core conservation areas, zones to meet tourist and research needs, and multiple use buffer zones.

At this time, forests that were not under protected area status were officially considered (though not always by local communities) to be state lands and were under DEF’s management authority. Furthermore, ANGAP was accorded no enforcement powers, even in protected areas. This authority remained with DEF, which considerably muddled the situation. DEF also insisted on its

56 Note that Protected Area identification initially focused on terrestrial sites; only in EP III did attention expand to coastal and marine zones.

57 The earliest parks date to 1927.

58 In the meantime, scientific knowledge about biodiversity has increased enormously. One of the factors driving the expansion of protected areas was the recognition that the early parks (frequently recreational in nature) did not adequately cover threatened resources.

exclusive rights to set entry fees for parks. This issue was finally resolved in 1996 when ANGAP was authorized to set fees and manage park revenues. From the beginning, the principle was established that 50% of all park fees would be shared with local communities.

The initial plan was for ANGAP to take over direct management of the “ICDP” parks at the end of EP I (in 1997). In fact, ANGAP assumed responsibility for park management at five of the seven parks at the end of EP I; management responsibilities for Masoala and Zahamena parks were transferred only later, during EP III.⁵⁹ The MIRAY project closely mentored ANGAP during this transition period.

During EP II, there were significant advances in the tools needed to successfully manage the park network. Specifically, the Plan GRAP (Plan de Gestion du Réseau des Aires Protégées, developed with assistance from MIRAY) set out the overall vision as well as specific thematic management goals for conservation, eco-tourism, sustainable development, and environmental education. The GRAP also proposed a gradual increase in the size of protected areas so as to cover more ecologically critical areas. Pragmatic advances in forest zoning characterized this phase and conservationists began to classify the remaining forests according to those most suited for community management, forest conservation concessions, strict protected areas, and restoration zones. For each zone, the appropriate management regimes were determined by the primary function served by that forest, which might be:

- Ecological (forests representing a national biodiversity priority and requiring national scale management);
- Regulatory (forests particularly useful for erosion control, hydrological regulation, watershed management and considered regional priorities); or
- Productive (forests providing resources needed for local livelihoods).

Initially, these assessments were carried out at the broadest national scale, but later more focused discussions at the regional level permitted 1:50,000 scale zoning maps to be made for the forest corridors and other biodiversity priority areas. These proved to be valuable tools in advancing a more participatory vision of forest management and decentralized spatial planning.

THE DURBAN VISION/SAPM

All of these spatial analyses were (unbeknownst to some of the participants) leading up to Durban 2003. In the months leading up to the IUCN Worlds Parks Conference, the conservation triumvirate worked with President Ravalomanana and the DEF Director to prepare Madagascar’s commitment to allocate 10% of its territory to protected areas status. This would put Madagascar in compliance with the IUCN global goal established in Brazil a decade earlier. When President Ravalomanana



Madagascar has made enormous progress in establishing and funding its national parks since the NEAP was launched. In 2003, President Ravalomanana committed to putting 10% of the country’s land under protected area status. (Photo credit: Karen Freudenberger)

59 Transfer of parks under KfW sponsorship has only more recently taken place.

made his now famous surprise announcement at the 2003 Durban World Parks Congress (6 million hectares of Madagascar's territory would be put under protected status), the decision was cheered in the international community.

Unfortunately, few outside the conservation community were included in pre-announcement discussions; details of how the approach would be implemented and explained to local communities were not adequately prepared. As a result, the announcement sent shock waves along the forest corridors where USAID projects were working.⁶⁰ Local communities immediately feared the worst – that their traditional lands would be taken over by national parks. The projects in these areas, which were equally unsure of the real implications of the announcement, were caught off guard, having spent most of EP II trying to reassure skeptical communities that environmental interventions along the corridor would not deprive them of their traditional lands. Now, villagers with machetes, imagining the imminent seizure of “their” lands, had a sudden and fierce desire to create *tavy* fields and reinforce their traditional tenure rights before the arrival of the anticipated park.

Timber and mining interests also recognized the threat of an expanded park system and quickly laid claim to concessions. By 2006 maps of mining concessions showed that nearly 80% of the Fianarantsoa forest corridor was subject to mining claims.⁶¹

Operationalizing the Vision

In the months that followed, a Durban Vision Group⁶² (involving representatives of the GoM, ANGAP, funding partners, conservation organizations, and NGOs) with multiple committees was established to figure out how to operationalize the Vision. USAID played a key leadership role and the Mission's Environment/Rural Development Team Leader co-chaired the Technical Committee with the Director General of the ONE.

A Prioritization Committee was established to identify priority areas for protection, based on objective scientific criteria (plant and animal distribution and biodiversity threats) and using sophisticated tools for planning and analysis. The objective of the exercise was to:

- Conserve the entirety of Madagascar's unique biodiversity (ecosystems, species, and genetic biodiversity)
- Preserve Madagascar's cultural heritage
- Maintain ecological services and sustainable use of natural resources for poverty reduction and development

This process involved considerable internal debate (at multiple levels) and “bartering” over sites that would be more strictly controlled versus those that would allow sustainable forest production (especially as needed to meet local demand for fuel and wood products). Corson describes, for example, a tendency for the French Cooperation and Malagasy officials to favor more commercial exploitation. WWF tended toward the German position that advocated for at least small-scale commercial exploitation so as to motivate local people's interest in protecting a forest from which they might gain benefits. CI and WCS voiced the most protectionist policies. The seeming deadlock

60 Other projects also report having years of trust with local communities shattered as word of the Durban announcement filtered down to the field.

61 Many of these were for mining research permits. They established a claim to the territory but had for the most part not yet been activated. High alerts from projects in the affected areas caused the GoM (2004) to suspend all mining permits in areas that were anticipated to be put under protected area status. The suspension was lifted in 2008 but permit holders were reminded that environmental impact assessments were required before any mining could begin. (Raharinomenjanahary, et al. 2008, 8)

62 The name was later changed to the SAPM (Système des Aires Protégées de Madagascar) Commission.

was broken by the 2005 IUCN Mission, which encouraged a more supple approach allowing sustainable use of resources as needed to meet local livelihood concerns (Corson 305). Following two IUCN visits the label “conservation sites” was dropped in favor of “system of protected areas,” emphasizing the range of options available to protect the forests in question.

In the final plan for the SAPM de Madagascar, 2.65 million ha were designated for management as parks by the Madagascar National Parks, while 3.25 million ha (including all the territory in the USAID focal area corridors) was designated for co-management with local communities or sustainable use zones.

The most recent version of the SAPM exercise allocates land according to the IUCN categories as follows:

Table II : Categories of Protected Areas in Madagascar

IUCN Category	IUCN Management Objective	Madagascar IUCN Management Categories
I	la) Strict Managed Reserve (primarily for scientific purposes) lb) Wilderness area	Integral Nature Reserve (Tahirin-javaboary)
II	National Park (managed primarily for eco-system protection and recreation)	National Park and Natural Park (Valan-javaboarimpirena)
III	Natural Monument (managed primarily for conservation of specific natural features)	Natural Monument (Tahirim-bakoka Voajanahary)
IV	Habitat/Species Management Area (managed primarily for conservation)	Special Reserve (Tahirin-javaboary)
V	Protected Landscape/Seascape (managed primarily for landscape/seascape conservation, recreation, or culture)	Protected Harmonious Landscape (Tontolo Mirindra Voaro)
VI	Managed Resource Protected Area (managed primarily for the sustainable use of natural eco-systems)	Natural Resource Reserve (Tahirin-karena Voajanahary)

In addition to this use-based typology, there are four proposed management systems: (1) state management, (2) co-management, (3) private management, and (4) community management.

While this has not entirely assuaged the concerns of bordering villages (the limits of co-management will be discussed further below), the acceptance of multiple management regimes introduced a critical element of flexibility.

SAPM designated 2.65 million ha as parks (to be managed by Madagascar National Parks) and 3.25 million ha for co-management or sustainable use. While this did not entirely assuage the concerns of local communities, it was an important step toward accepting multiple management regimes for protected areas.

SAPM helped to resolve an institutional issue that was becoming increasingly problematic and was creating significant tensions between the government and ANGAP. Over time, an uneasy allocation of responsibility between ANGAP (responsible for the national parks) and DEF (responsible for all other forested public lands) had engendered numerous institutional conflicts. Under the new system, both forests and protected areas are under the ultimate jurisdiction of the Ministry of Environment and Forests (Department of the System of Protected Areas), who then delegates management responsibility for particular protected areas to ANGAP (later Madagascar National Parks), local communities (COBAS and CB), NGOs and conservation agencies, depending on the status of each area.

Discussion

Over the years, there has been tension between the stricter conservationists, who have favored a more exclusionary model of forest protection (e.g. parks with clear boundaries and strict rules of access), and conservation-development practitioners (who opt for co-management and some local resource use). Given the massive territories now being accorded conservation status, there is an increasing convergence of views around the idea that co-management is necessary since it is impossible to protect such huge areas against hostile and/or hungry populations.

The rush (one million ha per year) to designate new protected areas and implement co-management agreements as described below would have challenged even the most experienced government structures in countries with none of the communication and infrastructure issues faced in Madagascar. Whatever good intentions might have been behind the process, with looming time pressures and limited funding, high level participatory rhetoric was rarely matched by true consultation in the field. Many (though certainly not all) of the “dialogues” with local communities more closely resembled exhortations to accept and respect the new procedures. Given the scale of the operation and the need to contact every affected community (sometimes multiple times), there simply wasn't time to conduct meaningful consultations.

Conservationists are quick to point out that the process is ongoing and boundary decisions made up until this point are still “temporary” as consultation continues. And indeed, SAPM implementers have made a significant effort to increase local participation as the process has advanced. The fact remains that among many rural people SAPM gained an early reputation for being top-down and largely engineered by outsiders. This has bred skepticism and hostility that will be difficult to overcome and increases SAPM's vulnerability to facile political opposition (as happened when colonial conservation policies became the lightning rod for criticisms when the more radical and populist Ratsiraka regime came to power).

Madagascar has never (at least since 1972) had the capacity necessary to enforce forest policy over vast landscapes. As such, conservation depends in large

SAPM implementers have made a significant effort to increase local participation as the process has advanced. But for many rural people SAPM gained an early reputation for being top-down and largely engineered by outsiders. This bred skepticism and hostility that will be difficult to overcome.

part on the cooperation of the citizenry. The failure to get the “buy-in” of these populations in the establishment of SAPM,⁶³ whose success will now depend on co-management of more than half of the country’s protected areas, does not bode well.

There is a looming issue that risks becoming increasingly problematic as co-management and sustainable production regimes that allow off-take of wood and other products from non-core forests are implemented more widely (see valorization of forest resources). There is very little scientific information on the impact of various extractive activities on biodiversity.⁶⁴ How many trees (or other products) can be harvested (and from what type of forest?) before it starts affecting key biodiversity indicators? Are there harvesting methods that can reduce the negative impacts? How can economic and biodiversity concerns be optimally balanced in these non-core and sustainable production areas? These issues are likely to become increasingly important and increasingly controversial; the lack of objective scientific and economic studies to answer these questions is a handicap to strategic planning.

COMMUNITY-BASED NATURAL RESOURCE MANAGEMENT (CBNRM): CO-MANAGEMENT⁶⁵

The motivation for co-management. Two principal factors have motivated the push for co-management of natural resources. Early studies carried out during EP I emphasized the customary tenure rights of local communities around forests and the existence of traditional governance structures and management schemes for these natural resources. One of the factors identified as accelerating deforestation was the fact that “modern” tenure systems have undermined these traditional and customary arrangements creating a “race” to exploit forest resources. When outsiders were able to circumvent “modern” restrictions by, for example, paying off DEF agents to obtain permits, local communities no longer felt bound by traditional rules. To the contrary, they wanted to benefit from “their forests” before anyone else gained access. Co-management was proposed as a way for local communities to again take greater responsibility for the natural resources in their “terroir” (lands traditionally owned by the community) under limited authority delegated by the State. By transferring rights back to local communities, it was assumed that they would be motivated to manage the resources in a sustainable fashion.

The second factor pushing co-management was more pragmatic. The state has never had sufficient means to systematically exclude local populations from using forest resources, especially when those populations consider that the resources belong to them. (Each local forestry agent is responsible for, on average, 5,000 km² of territory, often without functional transport or communications systems.) If the State could perhaps protect a limited number of national parks from the worst cases of incursion, once it was decided to also conserve vast spaces between parks (the eco-regional approach of EP II and III, and then 6 million ha under SAPM), the limits of enforced exclusion became evident. The World Bank estimates that approximately one million people live proximate to SAPM-

63 While the overall situation is glum on this issue, there are notable exceptions of projects that have taken a people-centered approach to conservation activities and developed long and positive relationships with affected communities. The Malagasy NGO Fanamby, Durrell, Birdlife International, and some of the small but persistent and effective local projects (Ny Tanintsika in the Fianarantsoa corridor, for example) have commendable track records of promoting positive social relations and economic growth alongside conservation activities.

64 One of the very few is Hawkins and Wilme *Effects of Logging on Forest Birds* (1996), which studied the effects of logging in the Kirindy forest on birds. Their study dealt with a particular case, but this type of information is needed for various eco-systems and endangered species.

65 A key source for the early history of CBNRM is Hagen, *Evaluation des Projets Pilotes d'Aménagement des Forêts Naturelles à Madagascar* (2001). Hockley and Andriamarivololona, in *The Economics of Community Forestry Management in Madagascar: Is There a Free Lunch?* (2007) and Shaikh (1999) address more recent issues.

designated protected areas and will be affected by its provisions (Carret et al. 2010). With high pressures from surrounding communities and little or no enforcement, there was de facto “open-access” in many areas. Co-management provided a mechanism for transferring certain enforcement responsibilities from a weak and absent state to proximate local communities.

Mechanisms for co-management. Two procedures for co-management were put into place: Gestion Locale Sécurisée⁶⁶ (GELOSE 1996) and Gestion Contractualisée Forestière (GCF 2001). GELOSE was a major accomplishment, as one of the first laws to codify community-based resource management in francophone Africa. Under the GELOSE system, the rights transfer is highly legalistic. There is no actual transfer of title to the community; the State remains owner of the resources while limited use rights are transferred to local communities (via a legally constituted Communauté Locale de Base, or CLB). A management plan for the territory in question is drawn up between the parties and a formal contract spells out the specific rights being transferred to the community. Significantly, the contracts have no provision for transferring enforcement or sanctioning authority. This remains with the DEF agents who are usually far away and have little capacity to carry out this responsibility. If the State collects user fees (ristournes) from outsiders, these are shared with the local community. (Antona, et al. 2004, 837)

GELOSE procedures proved to be exceedingly complex with some 22 steps to get to the contract stage. Nevertheless, it represented an enormous conceptual breakthrough in its implicit recognition of customary tenure rights, designating a State-trained mediator to reconcile “formal” and “traditional” resource use rules. (In practice, this potentially positive element was too often short-changed by mediators who rushed through the process and merely applied preconceived formulas.)

Because GELOSE was so cumbersome, an alternative system (GCF) was implemented as a sort of “fast-track” to co-management for State forest land; it does not require a State mediator and can be negotiated directly between local authorities and community associations (called COBAs). Most of the co-management contracts implemented through USAID projects used the simplified GCF procedures.

GELOSE and GCF contracts are valid for only three years and must then be reviewed and renewed for an additional 10-year period. In fact, few of the first phase contracts have actually been through the review process (even though the time for doing so has passed), which puts their status in limbo (and resources at risk).

Implementation of co-management. Actual procedures for co-management have varied enormously depending on the “sponsoring” agency and their views of how the contracts should be implemented. In principle, a co-management contract includes three zones: a conservation zone with no resource extraction, a sustainable use zone for daily subsistence resource extraction, and a commercial zone (Raik and Decker, *A Multisector Framework for Assessing Community-Based Forest Management: Lessons from Madagascar* 2007). A recent review found, however, that only three of the six contracts studied had provisions for a “production zone” while the others demanded strict conservation practices over the whole area (Hockley and Andriamarovololona 2007, 56).

All contracts ban *tavy*. However restrictions on local use rights for forest products vary considerably. Knowledge about the impact of local harvesting on various non-timber forest products (sustainable practices and levels) remains patchy and policies based on sound scientific evidence have yet to be established for most products. Usually, extraction for subsistence needs (honey, crayfish, vines, medicinal plants, spade handles)⁶⁷ is permitted. In some cases, contracts impose blanket bans on harvesting forest products and in others they impose complicated restrictions with regard

⁶⁶ Antona 2004 gives a detailed description of Madagascar's GELOSE and its history.

⁶⁷ Forest products represent up to 30% of household revenues in communities along the forest corridors (Andrianandrasana, et al. 2008, 30)

to permissible quantities, harvesting dates, and technical specifications, often with little scientific justification. Variations on what is permitted across sites and the difficulty of enforcement make the rules appear arbitrary to community members. When contracts call for community monitoring of the resource to ensure that there is not excess off-take, this imposes additional costs relative to the benefits of participation. (Hockley, Jones, et al. 2005)

Controlling illicit activities. Co-management seems to work best when the area under management still contains significant resources of value to the local community (that is, it is not severely degraded), but is not known to have resources of higher extractive value (mining or wood) that would attract powerful outsiders. In short, COBAs are most effective in controlling non-powerful outside interests. (This would include, for example, villagers from other communities; where the power relations are relatively equal, local COBAs are confident enough to ban incursions into their territory.)

The system is less effective in controlling more powerful interests. Communities tend to cave in to organized or wealthy mining or logging interests bearing permits (legitimate or not). Since the COBAs are not delegated with any formal enforcement power and there is usually no local forest agent prepared to enforce the rules, outsiders behave with impunity. Up until now COBAs have appealed to local projects to intervene directly or to nag government agents to respond. Otherwise the system breaks down – not only do outsiders gain access to controlled resources, but the incursion undermines restrictions on local access. Residents see that others are not respecting the rules and therefore see no reason to follow them either. The situation reverts to de facto open access.

Communities also have problems controlling incursions by their own community members (who may live in the village but not belong to the COBA). Malagasy culture highly values the maintenance of good relations within a community, making it difficult for the COBA to call a neighbor to task. This raises questions about what the most appropriate and effective COBA should look like since rarely do all members of a community belong. The most “indigenous” and traditional structures are sometimes criticized because they are not democratic and representative of the community at large (immigrants to the area, for example, may not be invited to participate). “Modern” structures tend to favor the more educated elite, who are also then more likely to accrue benefits. In both cases, issues arise with participation and enforcement. There is no consensus around which model works the best.

The costs of management. Comparison of the costs of enforcing forest policies through DEF or through COBA mechanisms confirm that it is much less expensive to work through the COBAs. One recent set of estimates posited that it costs the COBAs about \$.08 to control a hectare of territory as opposed to ANGAP’s local cost of about \$5-\$8 per hectare to manage a small park (Hockley, 41). These co-management costs underestimate the other inputs needed to make this system sustainable and effective (notably the need to provide some external enforcement and the vulnerability of the co-management system when benefits are not sufficient to maintain community interest), but they are nonetheless telling. Given this advantage,



In this photo, COBA members monitor *tavy* activity at the forest edge. Enforcement of illicit activities within villages has proven difficult due to the need to maintain good social relations. The state rarely backs up COBA enforcement efforts. (Photo credit: Tom Erdmann)

there is a risk that co-management becomes little more than a cheap way to compensate for inadequacy of State control by transferring forest patrol responsibilities to local communities. This imposes both financial and time burdens on the community. The community may be willing to take on these responsibilities if they gain significant benefits in return, but this has rarely been the case.

Discussion

The failure of co-management agreements to transfer long-term tenure security to communities reduces the likelihood that they will engage in long-term sustainable management practices. Good resource management nearly always requires that a certain amount of current consumption be foregone in order to assure sustainability into the future. When contracts are only good for three years and political instability reduces confidence in future relations with the State, communities have little incentive to manage with a view to the long-term.

Hockley and Andriamarivololona distinguish between three CBNRM scenarios, which differ according to the degree of congruence between externally defined conservation objectives and the interests of the community.

- 1. The pure win-win scenario.** There are no conflicts between external conservation objectives and those of local people once communal action problems are solved. In other words, once any tragedy of the commons has been resolved through appropriate CBNRM institutions, conservation and development interests are perfectly congruent.
- 2. The net win-win.** As the interests of external stakeholders and communities begin to diverge, there might be some costs to communities but these are more than made up for by the benefits, meaning that CBNRM still benefits both communities and conservationists. For example, if communities reap benefits from only a narrow component of the area's biodiversity, they may neglect other less useful components. However if, overall, CBNRM is in their interest, this may be overcome as long as there is external monitoring to ensure all aspects of the CBNRM agreement are being met.
- 3. The assisted win-win case.** If the interests of communities and external agents are even less closely aligned, the community may suffer a net cost as a result of CBNRM which meets externally-defined criteria, and we can no longer speak of a true win-win scenario. In these circumstances, CBNRM will require ongoing external support to make it viable, in recognition of its wider benefits and the interest that external stakeholders have in its success. This external support will need to help secure a sustainable source of revenue. (Hockley and Andriamarivololona 2007, 13-14)

Outsiders implementing co-management implicitly assumed the first scenario. But, in fact, most community contracts fall into Scenarios Two or Three. (The difference resides primarily in the way the contract is set up and whether the forest resources produce benefits for community members.) This means that there is need to ensure both benefits and enforcement to achieve the desired outcomes.

Co-management cannot be carried out by the community alone. The “co” implies a partner who has, up until now, been largely absent. And, economics count. Communities that don't gain some immediate palpable benefits from protecting the forest quickly lose interest and return to business as usual, whether slash-and-burn agriculture or uncontrolled extraction of forest products.

There are various ways to compensate communities in the “assisted win-win scenario.” One of these is through development assistance and, indeed, many co-management interventions implicitly suggested that there would be a quid pro quo of development assistance in return for agreeing to forego slash-and-burn agriculture (as well as certain harvesting rights) in forest zones. Given the ambitious push to sign a very large number of contracts quickly (especially in the wake of the Durban Vision), these implied promises generated the desired contract signatures, but have only rarely resulted in the benefits anticipated by communities. Where costs are incurred and the benefits are largely uni-directional in favor of the state, people are losing interest. This is happening on a large scale in GCFs around the forest corridors where the number of villagers dropping out of the GCF COBAs is high. In general, USAID- “sponsored” agreements have fared better because they were implemented by projects with a standing presence in the area and could offer tangible benefits; it is not clear what will now happen in the absence of this project presence.

By the end of the ERI project, there was a strong move afoot to create Federations of COBAs (similar to the Federations of KoloHarena Associations) so that they could better defend their interests relative to the State. Five Federations (four in Fianarantsoa and one in Toamasina) had been created by 2008; without follow-up their future remains in doubt (Andrianandrasana, et al. 2008, 11). The critical tools needed to implement effective co-management are now available. The principles of co-management are now widely accepted, the policies and procedures needed to carry it out have been drawn up, and there are numerous examples of what works (and what doesn't) to guide future action. While the system can and should be fine-tuned in light of recent experience, the most important lesson to date may be that co-management cannot be carried out by the community alone. The “co” implies an active partner. Studies of management transfers consistently decry the absence of follow up and enforcement as needed to make the system work. Second, economics count. Communities that don't gain immediate benefits from protecting the forest quickly lose interest and return to business as usual, whether slash-and-burn agriculture or uncontrolled extraction of forest products.

These issues take on particular significance now that much of the nation's forests are to be co-managed under SAPM; weaknesses in the approach and its implementation will have far-reaching consequences.

REDUCING PRESSURES ON RESOURCES BY SURROUNDING COMMUNITIES

While local pressures on forests are not the only source of deforestation (some areas are subject to more commercial pressure than others), slash-and-burn agriculture remains the primary source of natural forest loss in most areas of the country. Wood-cutting for fuel is in general a lesser source of deforestation (especially in areas where charcoal is made from eucalyptus or other non-forest species), but continues to pose a serious risk in areas where natural forests are close to large towns. Starting with the ICDP approach of EP I and continuing through the landscape approaches of EP II and III, USAID's programs have put significant resources into trying to reduce these agricultural pressures.

The Economic Context.⁶⁸ It is important to understand the economic context in which the NEAP operated to comprehend the challenges faced by projects working in rural communities. The crisis of 1972 was primarily an urban crisis that spawned a culture of *rotaka* (periodic unrest), usually accompanied by strikes, student demonstrations, and other public manifestations of discontent. In an effort to calm this debilitating pattern of urban civil disorder, successive governments have systematically favored urban populations, often at the expense of the rural agricultural economy. This has affected nearly all areas of economic policy, including monetary, fiscal, exchange rate, and taxation policies. Most critically for rural people, rice pricing policies have consistently capped prices in order to increase affordability for urban consumers, with the result that farmers have little motivation to produce surplus rice and cannot afford to use inputs as needed to increase yields. As a result, Madagascar (which has the highest per capita consumption of rice in the world) imports hundreds of thousands of tons of rice every year. Projects focusing on rural development as a way to stem pressures on natural resources have consequently been swimming upstream against a highly unfavorable economic policy current.⁶⁹

ICDPs⁷⁰

EP I adopted the ICDP approach, implementing community development activities around protected areas (generally within five miles) in order to persuade communities of the advantages of supporting these nature reserves in their backyards. SAVEM required that bidders for ICDP funds establish consortia of at least one environmental NGO with at least one rural development NGO so as to ensure that biodiversity and park-related activities were accompanied by development interventions.

68 I am indebted to Leon Rajaobelina for this succinct summary of the rural economic challenge.

69 In recognition of this unfavorable economic context, the BAMEX project was beginning to address key economic issues impinging on rural development, including rice and fertilizer pricing. These initiatives were unfortunately stopped when the Economic Growth strategic objective was dropped from USAID's portfolio (and BAMEX funding severely cut) in 2006.

70 Key documents for this section are McCoy/Madagascar's *Integrated Conservation and Development Projects: Lessons Learned by Participants* (1997) and Swanson, *Hypothesis Testing: Do Targeted Activities Reduce Pressures on Parks/Reserves Through Changed Human Behavior* (1996).

This was viewed as a grand experiment where hypotheses were tested by different implementers to assess which approach was the most successful and to compare the effectiveness of various strategies.

While ICDP interventions were supposed to be focused on reducing deforestation, evaluations of the program suggest that they were not sufficiently targeted. In many cases, the implementers lacked adequate understanding of the factors driving local populations to cut the forests and seemed mainly intent on ensuring that the local populations did not get overly annoyed at the newly established parks by buying them off with a range of social services and small income-generating activities. This was at times likened to a “shot-gun approach” in which buckshot was let loose with hopes that one or more projectiles would, by chance, hit the target. (Swanson 1996, 37) The main threat (slash-and-burn agriculture) was largely neglected.

There were of course some benefits to local populations, but the overall results were judged largely inadequate.⁷¹ Furthermore, controlling deforestation by proximate populations was only one part of the solution since many forests were also under pressure by outsiders (whether immigrant farmers from distant areas, charcoal makers or harvesters of valuable wood). And, it was recognized that even if the vast majority of the population was willing to respect the rules, there would always be a few who would seek to profit for private gain, highlighting the need for effective enforcement (a stick to accompany the ICDP carrot).

Finally, information coming in from conservation assessments showed that (1) most of the country’s biodiversity remained outside the national parks, and (2) the parks themselves were in many cases too small to be sustainable and to ensure survival of some key species over evolutionary time. This led to an emphasis on maintaining forest corridors (usually connecting significant protected areas) and larger forest blocks so as to allow species migration over larger areas and altitude gradients.

THE ECO-REGIONAL APPROACH⁷²

As such, starting in EP II (and continuing through EP III), the approach was expanded to an eco-regional focus, where all the factors impinging on sustainable resource use around both parks and forest corridors were considered. This required multi-level analysis in order to capture the local threats (at the farming system) but also more structural issues (such as lack of markets, agricultural inputs, etc.). EP II focused initially on three geographic areas (the Mantadia-Zahamena corridor; the Ranomafana-Andringitra Corridor; and the Belalitra-Ambalamanga landscape (later dropped as a priority zone) near Mahajanga.

The eco-regional (or landscape) approach required both sophisticated analyses of the threats and ambitious programs to address them across vast areas. In fact, the amount of project funds available (as well as the restrictions imposed by the biodiversity earmark and MOBIS funding mechanisms)

71 Peters, who was the Conservation Technical Advisor to the Ranomafana ICDP summarized the benefits (which he considered clearly insufficient) as follows: “...tourism in the area benefited less than 100 people, infrastructure improvements were carried out in fewer than a dozen villages, and the project directly employed just over 100 people, less than half of whom were from area villages. Although tourism to Ranomafana generated approximately \$30,000 in revenues in 1992, less than a quarter of that amount (about \$6,000) was retained locally in the form of wages. There is further evidence that those who have benefitted from tourism, improved infrastructure, and direct project employment, were not always poor local villagers, but rather wealthier outsiders. Even RNPP social services like environmental education and health sporadically reached only 18 villages during Phase I. It therefore stands to reason as well that very few of those who threaten the park’s resources through *tavy* and other forms of resources exploitation have obtained tangible benefits from the existence of the park or its associated ICDP.” (Peters 1998, 27)

72 Key documents for this section are Freudenberger (Freudenberger and Freudenberger 2002) and Erdmann, *Eco-Regional Conservation and Development in Madagascar: A Review of USAID-funded Efforts in Two Priority Landscapes* (2010)

severely limited both the amplitude and the nature of interventions, which fell short of the need identified by the projects. Nevertheless, a wide range of studies and interventions generated large amounts of information about farmer practices and receptiveness to changing traditional agricultural practices, and there were modest reductions in deforestation rates in the areas where the projects were most active.

Persuading farmers to abandon *tavy*⁷³

As the primary proximate cause of forest conversion in many of the priority biodiversity zones (nationwide estimates suggest that 80-95% of deforestation is caused by agricultural conversion, while the remainder is caused by extraction of wood for fuel or building materials), the PE II and PE III eco-regional projects put enormous effort into persuading farmers to forego the extensive slash-and-burn agricultural production system.⁷⁴ While these production systems were sustainable in the past, when the population was small, fertile land was abundant, and 15-year fallows allowed soil fertility to regenerate before land was put back into production, these conditions no longer exist in Madagascar. With fallows that rarely exceed three years, there is rapid deterioration of soil fertility and many lands are more or less abandoned for agriculture after 20-30 years (which equates with fewer than 10 harvests).



Tavy remains the principal cause of humid forest destruction as forest reserves are transferred into agricultural production zones; this photo from Ambodigavy in the Zahamena forest corridor c. 1998. (Photo credit: Karen Freudenberger)

Because land in the forest has been owned (depending on whose tenure rules are applied) either collectively by the neighboring community or by the State (but never by individuals), *tevy-ala*⁷⁵ has long been a strategy used by farmers to acquire private rights to land that was otherwise “off-bounds.” Under *tevy-ala*, once land is cleared by a farmer, it becomes his to farm, to fallow, or to pass on to his descendants. The person who cleared the land gains ownership rights. Under traditional community tenure systems, the village authorities strictly regulated access to reserve land in the forest that was only parsimoniously cleared if there was a demonstrable shortage of land to meet the community’s basic needs. As traditional land tenure systems broke down, these restrictions weakened, and farmers with the means to do so made *tevy-ala* a deliberate strategy for increasing their family holdings.

There have been centuries of attempts to ban *tavy*⁷⁶ (going back to the Merina – the highland ethnic group that governed Madagascar before colonization, then the French, now the Madagascar National Parks.) Its persistence over time suggests a deliberate flouting of the regulations in part to reinforce communities’ traditional claims to forest lands. As such, *tavy* is a livelihood strategy, but also a symbol of resistance against outsiders who presume to own lands that villagers consider to be theirs.

73 A key document for this section is Styger, Rakotondramasy, et al *Influence of Slash-and-Burn Farming Practices on Fallow Succession and Land Degradation in the Rainforest Region of Madagascar* (2006)

74 This section refers specifically to interventions in the priority forest corridors. Slash-and-burn agriculture also occurs in other areas of Madagascar and is sometimes known by terms other than *tavy* (*hatsake* in the Menabe region of western Madagascar and much of the south, for example).

75 *Tevy-ala* refers to an initial cycle of slash-and-burn agriculture, when forest is first cleared for agricultural production.

76 This term refers to the whole cycle of slash-and-burn agriculture, not just the initial forest clearing.

Tavy and the Environment. Outsiders' understanding of slash-and-burn as practiced in Madagascar has advanced enormously thanks to numerous dissertations and other research (some funded by USAID) that have carefully studied soil characteristics and farmers' production decisions. It is important, first, to distinguish between *tavy* (more generally slash-and-burn or swidden agriculture, which includes fields that are being put back into production after a fallow period) and *tevy-ala* (the start of the process, when forests are initially cleared to create fields). The latter is of particular concern because it directly clears primary forest and is an immediate cause of forest conversion.

We also know that *tevy-ala* does not primarily affect the forest fringes as was initially thought. Instead, farmers go deep into the forest in search of desirable land (characterized by sunny slopes and/or water sources). These pioneer colonies⁷⁷ act as poles of attraction for other farmers and contribute to the very serious fragmentation that has now been observed in most of Madagascar's forests. *Tavy*, where farmers return to previously cultivated fields that were then put into fallow, is less immediately threatening but (because it is unsustainable) will eventually result in farmers seeking new forest lands when their *tavy* fields become infertile.

Ultimately, both environmental protection and improvements to local livelihoods depend on transformation from the current extensive system of agriculture which "uses up"⁷⁸ and then discards the land to an intensive and sustainable production system where farmers can continue to cultivate the same land in perpetuity. This will almost certainly happen, as it has in just about every agricultural system around the world that has been constrained by increasing populations on limited lands (the Boserupian model). If left to its own timing, however, there is a very strong likelihood that the system will not evolve until after most of the accessible forests have been converted into fields (from the Malagasy farmer's perspective the land is not "limited" until the forest is gone). One of the primary goals of USAID's eco-regional projects was to motivate and facilitate this transformation to a more intensive agricultural production system well before the forest resources have been exhausted.

Alternatives to tavy. Numerous technical approaches were essayed with varying degrees of success. In EP I much attention was focused on the valley rice-growing areas where it was thought that substantial increases in yields could significantly reduce farmer interest in *tavy*. This assumption had several flaws. While there were dramatic improvements in yields (using System of Rice Intensification – SRI⁷⁹ techniques) on very small



Intensifying rice production (here a farmer in the Ranomafana corridor has adopted some of the SRI recommendations) can help to reduce pressures on the forest but increased revenues can also give farmers the means to hire labor to make additional *tavy* fields. (Photo credit: Karen Freudenberger)

77 A census of five communes on the western (Betsileo) side of the Ranomafana-Andringitra corridor found more than 2,800 families living inside the forest in 2008. The rate of occupation had significantly increased since 2005, when the corridor was declared a Durban Vision Protected Area (Raharinomenjanahary, et al. 2008, 20)

78 Farmers are acutely aware that their current practices discard the land; indeed that is why they engage so vigorously in *tevy-ala*, which is very hard work. In some areas those who can afford to do so systematically clear another hectare or so every year, just to make sure that they and their children will have adequate land when they need it (Styger, personal communication).

79 SRI is a method for increasing rice yields that was developed in Madagascar by a French missionary-agronomist in the 1980s. It requires very few (if any) additional inputs (improved seed varieties are not required) but does demand a careful adherence to certain practices that are alien to both the Malagasy rice growing tradition and, in some cases, practices recommended by rice researchers (e.g. initial seeding on a dry bed, very early transplanting, no standing water in the rice field). The effect on yields is subject to some controversy but can range from twice to many times that obtained by traditional Malagasy rice-growing methods. Oddly to some, adoption in Madagascar has been much lower than expected, while higher adoption rates are observed in parts of Asia and West Africa (Barrett, et al. 2004).

plots, adoption rates were much lower than expected primarily because poor farmers faced labor constraints that discouraged them from adopting the new method and the new techniques introduced higher risks. SRI also demanded that farmers manage water meticulously (to get just the right amount at particular times), which required investments in small dams and water diversion technologies.⁸⁰

The projects noticed that the very poorest farmers were not the primary cutters of the forest for *tevy-ala*. Pressure was greater from modestly more prosperous farmers who generated at least small surplus; they could afford to take time (or hire others) to clear new fields.⁸¹ These farmers tended to have valley rice fields and, contrary to initial expectations, increasing yields perversely encouraged their interest in *tevy-ala*. (While this did not suggest a moratorium on rice improvement technologies, neither were they a panacea for deforestation.) And finally, many of the farmers nearest to the forest didn't have valley land for paddy rice fields and were entirely dependent on upland agriculture; they needed technologies that would work on hillside crops (upland rice, often intercropped with beans, sesame, cucumbers, etc.).

The agricultural system must change from the current extensive system that “uses up” and then discards the land to an intensive and sustainable production system. The eco-regional projects tried to motivate and facilitate this transition before the forests are all cut.

Adoption and resistance. Over time the projects developed a panoply of proposed improvements to the household livelihood system. Some addressed valley fields (i.e. SRI, fish-rice culture, introduction of off-season crops such as sweet potatoes); some were focused on upland fields (i.e. soil fertility interventions using compost and mulch, cover crops, contour plantings, no-fire clearing methods, new crop rotations); while still others proposed off-field improvements to household income (i.e. fish farming, honey). Perhaps the most interesting conclusion from all this was that nearly every intervention was successful in certain areas⁸² but little appreciated in others for reasons that were not always immediately evident.

It is generally clear that labor constraints were underestimated and were a major reason why some techniques (e.g. composting) had low adoption rates (and why burning continued to be a popular labor-saving strategy for many, as discussed below). Land tenure issues also played a role since farmers who borrowed land (a frequent occurrence) were less willing to invest in soil improvement techniques. And finally, proposed interventions may not have adequately considered the positive impact that fire (ash) has on increasing PH values on acidic soils.⁸³ Nutrients are not effectively used

80 Under LDI, the project could contribute to these investment costs; the project financing mechanism in ERI did not allow such investments.

81 This phenomenon was identified and labeled the “poverty paradox” by Ferraro and Kramer (Ferraro and Kramer, *A Framework for Affecting Household Behavior to Promote Biodiversity Conservation*, 1995). They pointed out that poverty is at once a driver and a constraint of deforestation. Reducing the poverty constraint to a point where people can hire labor may actually increase deforestation, especially since such families are still very poor (their livelihoods remain natural resource dependent even after their incomes rise).

82 In the Fianarantsoa region, two of the most popular interventions were (1) rice-fish culture (introducing tilapia and carp into valley rice fields, adding nutrients to the paddy field and providing protein and/or revenues to the family at harvest) and (2) off-season sweet potato (a low-labor high-yield crop) production because it provided food during the hungry season. An initiative that didn't take hold was using vetiver grass to contour farmers' upland fields. Tenure insecurity was too uncertain on such fields to merit the labor investment needed to plant vetiver (and vetiver risked causing conflict with the landowner). New techniques were tested either on demonstration plots managed by the KoloHarena, or in Farmer Field Schools, where a particular technical topic was selected for study each season and various techniques were tested under real farm conditions.

83 Personal communication, Erika Styger.

if the soils are too acidic, as they typically are in eastern Madagascar, and the addition of organic matter or fertilizer does not adjust the PH fast enough. Farmers need to burn to address this problem (or add lime or some other base to their fields). Agroforestry systems that fail to account for the PH problem produce only mediocre yields of food crops and farmers have been reluctant to plant trees that would interfere with burning.

For small farmers in remote areas, diversification remains a desirable characteristic of the production system, especially under conditions of extremely high risk (whether meteorological, political, economic, or physical). Farmers legitimately protect themselves against outsider efforts to “improve efficiency” at the expense of increasing risk. High variability in conditions (soil fertility, land tenure, labor availability) faced by farmers even within the same community meant that interventions had to be customized according to very local (even individual) needs. This helps to explain why there were so very few examples of across-the-board adoption of particular new techniques.

The need for structural change. In general, projects felt that they reached the limits of what could be achieved at the micro-level long before the desired adoption rates or impact had been reached. In short, the desired transformation of the local economy almost always necessitated more fundamental investments at the landscape scale (which were only occasionally carried out due to funding constraints). The populations that pose the most threat to forests usually live in extremely remote areas without adequate energy, transport, communication, credit, or markets. This poses enormous barriers to the use of agricultural inputs, to commercialization, and to value-added processing. On the positive side, in the cases where these systemic changes did occur (the road or train was repaired, credit was made available under favorable conditions, an old irrigation system was put back into operation or a new one built), farmers were quick to exploit new market opportunities. Indeed, their response was often even higher than had been expected.

The landscape projects, in collaboration with projects working to reinforce civil society, devoted significant efforts to developing social capital as needed to compensate for constraints faced by dispersed and low-density populations living at the forest fringes. They helped establish and then nurtured the KoloHarena farmers movement (which will be discussed further later in this paper). ERI introduced the farmer-to-farmer extension system⁸⁴ which, in the absence of other agricultural services, permitted experimentation and sharing of ideas. These two networks were interrelated and complementary in working on the most fundamental problems faced by local farmers (access to agricultural inputs, commercialization of agricultural products, and sharing of information), while effectively linking these communities to outside services. Toward the end of the project, farmers were paying for extension services offered by farmer field agents (specially trained KoloHarena members), demonstrating the extent to which such information was valued.

Projects faced a constant and unresolved tension between the need to put enough investments into particular areas/communities to have a real impact and the danger of creating dependencies and unreasonable expectations, which could have a rebound effect when project activities cease. If people perceive that benefits are an exchange for not using the forest, then an end to the benefits may be perceived as a license to return to extractive activities. This issue would have been mitigated had long-term structural improvements (transport, sustainable credit institutions, etc.) been introduced more broadly but, in fact, projects ended up essentially “buying off” people to not engage in *tevy-ala* by offering discrete and, in some cases, probably ephemeral benefits. As such, there remain questions about whether people will continue the new livelihood patterns once the projects leave.

84 Initially the ERI project hired field agronomists to live and work in remote communities near the corridors. Later the system was changed so that the KoloHarens actually hired their own agronomists, providing extension services to KoloHarena members and others in the community. ERI provided refresher courses and technical materials to these agronomists. Additionally, villages could designate *Paysans Vulgarisateurs* and *Paysans Animateurs* who received special training and were certified after passing a competency exam. These village extension agents were also compensated in cash or kind by the KoloHarens.

Fire⁸⁵

Fire is a source of much controversy and debate since as much as 33,000 ha of Madagascar's forests and 839,000 ha of other wooded land burn every year. Much of the burning is on grasslands in areas far from forest areas (primarily used for pasture management), but forest fires that leave thousands of hectares of charred vegetation in their wake are an annual occurrence.

Attempts to ban fires have been made since the colonial period and have rarely been successful, in part because not all fires are man-made. In many cases it is virtually impossible to identify the real source of a fire, a characteristic that endears them to fire-setters who prefer anonymity. Furthermore, fire policy has often been indifferent to the causes and implications of various types of fires. In lumping fires together under blanket bans that don't distinguish between fires linked to ordinary "livelihood" activities, fires that are malicious or political, or fires that target forests, they have confused both the farmers and the authorities who are supposed to enforce the policies. This undermines the credibility of all fire restrictions.

Types of Fire. It is important to distinguish between fires whose purpose is deforestation and those that are intended for agricultural land management. The first (unless they are political) are *tevy-ala* fires, set when farmers slash and then burn primary forest areas to create new fields. Fire here is the tool for completing forest clearing. Outsider complaints would be the same if heavy equipment or plant-killing chemicals were used to destroy the woody vegetation since the result (fields replacing forests) is identical. The issue here is not so much fire as it is forest transformation.

The second type of fire is used to clear fallow fields of brush and pests. Farmers use fire in this case primarily as a labor-saving tool to rid the area of secondary vegetation before replanting and as a way to control soil acidity. Many of the fires that light the October skies are field-clearing fires. As long as they do not get out of control, they have little direct impact on the forest (and many are in areas far distant from remaining forests). Their indirect effects are more insidious, however: Fields that are cleared with fire suffer more rapid nutrient loss, in part because the plant species that are best suited for fallows (because they more rapidly replenish nutrient loss) do not easily regenerate on burned lands. As a result, after repeated burning these fallow fields are characterized by herbaceous plants, rather than the woody species that would more effectively cycle nutrients. This leads to decreased productivity and shortens the length of time until the fields become so infertile that they are no longer worth planting. The sooner a field becomes unproductive, the more new land farmers have to acquire, usually from the remaining forests. In this case, the objection is to the use of fire as a tool. The farmer could gain the same result (or better) using a different field-clearing technique.⁸⁶ This is why projects have tried to promote agricultural systems that do not depend on burning.

In both cases, the fires can get out of control and burn much larger areas than were initially intended. If the act is perpetrated in secrecy, when fires get out of control there are no other people around to help control the conflagration.⁸⁷ In still other cases, fires are deliberately set, not to gain land but as a manifestation of political discontent. Fires almost always increase during periods of political unrest and to the extent that there are conflicts over resource management, people will deliberately burn the forests to express their frustration.

85 Key references for this section are Kull, *Madagascar's Burning Issue: The Persistent Conflict over Fire* (2002), Styger, *Mid-term Program Evaluation Report: Profitable and Environmentally Sound Farming Practices Replace Slash-and-Burn Agricultural Practices at the Landscape Level* (2006), Rakotoson, *Mobilizing Farmers' Knowledge of the Soil* (2009).

86 Though, as discussed above, provision must be made for controlling soil acidity if burning is not allowed.

87 The ERI project found this such a problem that they finally came to an uneasy compromise, where they unofficially accepted controlled burns on old fields as long as farmers made provisions to ensure that the fires would not escape control.

Fire Policy. State attempts to ban or restrict fire have been unsuccessful for several reasons. The first is the most obvious: fires will happen, regardless of human intervention (Kull describes this as “ecological inevitability”). The second, however, is that policies have not adequately distinguished between what types of fire are banned and why. Lumping fallow management fires with forest-clearing fires seems absurd to the farmer who is just trying to plant a field. When policies seem nonsensical and there is little capacity for enforcement or sanctions, people tend to ignore the rules. Third, there is an acute shortage of enforcement capacity (in many areas, one forest agent is responsible for thousands of hectares in areas where there are few or no roads). Not only are there not enough officials to implement such policies, but those present are likely to sympathize with farmers who use fire to clear their fields since they probably use the same methods themselves. And fourth, as noted above, it is devilishly difficult to identify the people who actually set the most pernicious fires since they have strong motives and multiple strategies for hiding their actions.

Since top-down enforcement has significant limits, projects have experimented with local monitoring and control in priority zones. Under the MIRAY project, communes that could demonstrate achievement of fire reduction goals received a “Green Label” certificate that gave them priority for receiving funds for local development projects.

One thing that has changed significantly in recent years is the ability to monitor fire. With automated monitoring systems that use satellite images to detect fire in real time⁸⁸ (available at DEF since 2006 with the help of the Jariala project), it is now possible to accurately identify the extent and evolution of burning. It is not yet clear how this will be used in practice since fire control still requires enforcement at the field level, but it should provide information that can be used to make more strategic decisions about which types of fire should concern the conservation community and enable resources to be targeted to those areas. At a minimum, this should reduce the time and effort that is devoted to railing against fires that are relatively harmless, and diminish the fall-out from unnecessarily antagonizing rural populations.

Discussion

Unlike the ICDPs, the eco-regional approach has not been fundamentally called into question, although the resources available to implement the response were not up to the challenge. This was particularly a problem because most of the target populations live in dispersed and extremely remote communities where it is expensive to reach them with project services. Project reports lament their inability to address the infrastructure issues such as transport and irrigation, which they considered imperative to meeting local needs and changing farmers' production and commercialization strategies. The eco-regional approach identified these structural issues, without providing the means to address them on any significant scale.

EFFORTS TO ALIGN CONSERVATION AND LIVELIHOOD OBJECTIVES

The landscape projects internalized critiques of the ICDP approach and made a concerted effort to better understand why farmers were using forest resources in unsustainable ways so as to identify “best bets” for changing these behaviors. Discussions with communities proximate to threatened resources quickly revealed that, not surprisingly, conserving biodiversity was not a significant concern. Lemurs meant protein for lunch and dark, loamy forests provoked dreams of future rice fields.

88 Fire Information for Resource Managers (FIRMS . <http://maps.geog.umd.edu/firms/>) and <http://firealerts.conservation.org>.

Recognizing that the use of protectionist language could backfire given villagers' extreme sensitivity to perceived threats that their land might be taken over for a national park, projects reoriented the approach and sought to package the message to make it understandable and motivating to local communities. This was not just a matter of disguising a wolf in lamb's clothes or "putting something over" on local communities. It was rather a question of searching for the common interest around the remaining Malagasy forests.

Save the Forest: Save Your Rice Fields. The forest is valuable to the world at large because of its unique biodiversity; a more or less intact forest is valuable to local communities because of its hydrological function and especially the role it plays in regulating water supplies to valley rice fields. Projects focused on this theme in part because farmers are so sensitive to rice yields and had themselves observed that when the forest was cut back, production suffered.⁸⁹ "Save the forest, save your paddy fields" or some variation on this theme thus became the primary message used in efforts to convince farmers that it was not in their interest to deforest the hills around their villages nor to let others come in and do so. Simultaneously, the projects worked with community members to reorient the household economy away from extractive or destructive forest activities.

This message proved to be somewhat controversial and largely ineffectual. Critics have questioned the scientific veracity of the message. Some researchers have been adamant that the message does not reflect reality and that the hydrological effect of the forest on rice field production has been vastly overestimated (Serpanie, Henckel, and Toillier 6-8 July 2009). To the extent that the message has worked, it is because villagers really do believe that there is a connection between forest cover and rice harvests, but for most the connection has proven too tenuous to justify foregoing immediate benefits (whether *tavy* or the collection of forest products). If farmers could directly sell the water collected in "nature's sponge," and would lose those revenues if the forest disappeared, the message might have been convincing. For most, given current realities, it was not.

The presumption that there is a fundamental alignment of interests between the international community and local residents may have been a major conceptual flaw in USAID's approach over the last 25 years...

This has led others to observe that, fundamentally, there may not be a significant alignment of interests between the international community, which values biodiversity for its own sake, and Malagasy farmers who are being asked to protect the forests on which biodiversity depends. Even if we persist in the argument that there is a relevant connection between forest cover and hydrology, one does not need a biodiverse forest to serve the hydrological function.

The presumption that there is a fundamental alignment of interests between the international community and local communities may be a conceptual flaw in the approach of the last 25 years. USAID's strategy through EP III implicitly assumed that since there was a substantial alignment of interests, all parties would willingly contribute to achieving the common goal of saving Madagascar's remaining forests. If indeed the objective is not common (or sufficiently motivating) and interests do not align, then we move to a scenario in which the international community wants something that the local community does not value, and probably has to pay for it (see Payments for Ecosystem Services (PES)).

⁸⁹ In some cases farmers reported that after deforestation they were only able to produce one rice harvest a year rather than two.

Payments for Ecosystem Services⁹⁰

Growing recognition of the practical challenges of implementing conservation through development (made more difficult if, indeed, the local community does not share outsider concerns for protecting the environment), along with the realization that this would be a long and expensive undertaking, made the idea of conservation payments increasingly attractive. Such payments were proposed by academics as early as 1995 as a possibly more efficient way of meeting rural needs around protected areas (Ferraro). Proponents suggested that direct payments to local communities who demonstrably refrained from cutting the forest would reduce the lofty overhead expenses of projects and direct more benefits to people in remote areas near the parks.

There was a juncture, in the design of EP II, when the flaws of the ICDP approach might either have been “fixed” via a conservation payments approach or by moving to a landscape strategy. In part because the idea still seemed impractical (how would you keep payments going over the long term?) and untested and in part because the reaction among key Malagasy officials was resoundingly negative, EP II took the landscape route.

Developing a project around conservation payments. Over the next few years, concerns over carbon emissions and global warming began to focus attention on the potential of tropical forests to sequester carbon. The emergence of carbon markets, in which countries could potentially fund reforestation in developing countries (and, in later iterations, pay for avoided deforestation) in exchange for being allowed to pollute in their own countries, suddenly added a whole new dimension to conservation finance. The PAGE project, under PE II, took up the challenge of imagining how such a concept could be translated into practice and chose as its pilot site the Makira forest in northeast Madagascar.

That initial idea slowly and painstakingly evolved into project interventions over the next decade (in an experiment that continues today). A consortium of partners has developed practical implementation tools to field test the concept. As such, the Makira project has been groundbreaking both in Madagascar and in the larger conservation world. It has faced the particular challenges of being “ahead of its time” insofar as the larger international policy framework for carbon credits is evolving parallel to (and sometimes behind) the local mechanisms being developed and tested in Makira.

While a relatively small project in the grand scheme of the Madagascar portfolio, Makira is worth addressing in some detail because any new projects are likely to consider adopting at least some of its approaches.

Avoided deforestation. In general, the focus in Madagascar has been on avoiding deforestation (keeping existing forests intact), rather than reforestation or afforestation (although CI is currently doing some reforestation of forest corridors in Zahamena), largely because the fundamental environmental concern is biodiversity, rather than merely “greening” the country. This has complicated PES implementation because avoiding deforestation was not, in



This Menabe photo shows the well built with PES funds in Tsitakabasia in return for villager protection of forest resources. (Photo credit: Matt Sommerville)

⁹⁰ Key documents for this section are Christopher Holmes *Forest Carbon Financing for Biodiversity Conservation, Climate Change Mitigation and Improved Livelihoods: the Makira Forest Protected Area, Madagascar* (2008), Sommerville, *The Role of Fairness and Benefit Distribution in Community-Based Payment for Environmental Services Interventions: A Case Study from Menabe, Madagascar* (2009), Ferguson, *REDD in Madagascar: An Overview of Progress* (2009).

USAID and partners pioneer carbon credit sales.

The Makira project, in addition to its important contribution to advancing knowledge and practical mechanisms for implementing carbon sequestration/PES payments, offers an interesting case study of the complex relations between USAID and its partners.

In this particular case, we highlight how complementary institutional strengths have helped to overcome implementation constraints and created a productive learning environment. All have learned from this experiment, whose results will now be “mainstreamed” into broader conservation and development projects.

Since 1992, Wildlife Conservation Society (WCS) has worked with ANGAP in the creation and management of Masoala National Park. Some years later, when the PAGE project was looking for a pilot site for eco-service payments, they identified Makira (near Masoala) and relied heavily on WCS’s knowledge of the area to design the project and facilitate access. Given the technical complexity of this type of intervention, and the fact that it was entering into issues far outside the experience of the conservation organizations, it is highly unlikely that WCS would have taken on a PES program without the help of PAGE.

When it came to actually implementing the project, however, USAID was no longer in a position to move things forward. The Masoala peninsula was not one of USAID’s priority areas at the time and, as initially designed, it was anticipated that the project might go through the Kyoto funding mechanisms. (Since the United States has not signed the Kyoto Accord, USAID would not have been an eligible partner.) Seed funding for the project was thus provided by WCS and Conservation International (CI).

Since 2008, Translinks (a centrally funded cooperative agreement) is helping to globally disseminate the results of the project, bringing the learning back into the USAID fold.

the end, eligible under the Kyoto Protocol.⁹¹ As a result, Madagascar carbon sales from reduced deforestation have so far gone through the voluntary carbon market.

Makira is a forest with very high biodiversity that is threatened by *tavy*, quartz, and wood extraction, and burning for pasture land. The forest in question covers about 401,000 ha and was being converted to agricultural land at a rate of about 1,500 ha per year. Approximately 150,000 people live around the protected area, which suffers from the usual problems of poverty, insufficient infrastructure, and remoteness. Complex institutional arrangements were necessary to get the project off the ground, including DEF’s delegation of the management of the protected area to WCS and the buffer area to local communities.

Developing methodologies. The PAGE project carried out initial assessments to determine how much carbon is actually stored in the Makira forest and methodologies were refined for calculating the carbon value that could be attributed to avoided deforestation. Essentially, this involved taking measurements of the carbon value found in three types of plots (dense forest, degraded forest, and farmed or fallow lands).⁹² The amount of forest that would be cut with and without the project were then estimated, based on an analysis of different threats in different areas of the forest. Then the carbon sequestration difference was calculated (how much more carbon will be sequestered by the standing forest over time vs. what would have been sequestered if the forest had been cut or degraded).

For this particular pilot project, the potential sequestered carbon turned out to be about 9.5 million tCO₂ equivalent over 30 years. The Makira project is carrying out a pilot operation to sell up to 300,000 tons of carbon on the voluntary market. A total of 100,000 tons have been sold to date and the revenues are being directly re-invested into the management of Makira Protected Area and the peripheral zones. In 2008, WCS created a non-profit private sector

91 It is anticipated, however, that some sort of Reducing Emissions from Deforestation and Degradation (REDD) mechanism will be accepted under the United Nations Framework Convention on Climate Change (UNFCCC) and procedures for measurements and monitoring are currently being negotiated.

92 It was conservatively estimated that the natural forest sequestered about 322 tC/ha, the degraded forest about 122 tC/ha and the farmed/fallow plots about 13 tC/ha.

company (the Makira Carbon Company, incorporated in the U.S.) with responsibilities for marketing future emissions reductions from avoided deforestation in the Makira forest through an agreement between WCS and the Government of Madagascar.⁹³

For our purposes, the exact numbers are of little concern except to note that there have been considerable advances in developing the complex methodologies needed to measure biomass and stored carbon and to estimate the benefits of avoided deforestation. The financial institution needed to actually sell the carbon has been incorporated, and there are accepted contract models governing relations between the Malagasy government, the project, and local communities including how funds will be shared among the different entities. Under the current procedures, in a distribution reminiscent of Protected Area Entrance Fee (DEAP) funds, 50% of the funds are returned to the local communities for natural resource management, forest conservation, and community development activities; 25% of the revenues are designated for management of the Makira Protected Area; and the last 25% is to be allocated in part to the GoM, and in part to cover various administrative costs, including monitoring and verification.

The lessons learned from Makira are also informing the carbon industry's Voluntary Carbon Standard (VCS). As one of the first projects in the world to actually submit an avoided deforestation dossier to the VCS, Makira is helping to define appropriate methodologies and standards. VCS certification will confer a "seal of approval" to potential buyers that the site can deliver on the avoided deforestation that it promises.

Discussion

Eco-service payment projects are still young, with many bugs to be worked out. The Makira project has not ventured into the world where local farmers (or communities) are directly paid off in exchange for demonstrating that "their" forest has not been cut, as some have proposed.⁹⁴ Instead, they have set up mechanisms to capture carbon credits, 50% of which are then allocated to development projects around the protected forests. The actual interventions have so far resembled those implemented under the landscape approach (i.e. improved rice growing methods, provision of credit, tree nurseries, income-generating activities, and health and population interventions).

In the Makira model, far from eliminating the "middle-man," the development and conservation organizations remain actively involved. In this particular project they are co-managers, with the community, of the community forest zones. They are also implementing the development interventions that compensate communities for not deforesting Makira, while helping them adopt alternative livelihood strategies. In short, the main difference with previous landscape projects (not insignificant if it actually happens) will be the sustainable financing from a carbon marketplace that will not be based on donor resources, project timetables, or financing whims.

Unresolved issues. There is currently much greater willingness to consider Payments for Ecosystem Services as a way to motivate local protection of priority biodiversity sites. There are still many unresolved issues in actually implementing such a program, however:

- How to protect it from financial abuse and corruption?
- How to ensure that motivating payments actually get to those who are doing the most damage to the forest?

⁹³ Actual use of this mechanism is pending due to the current political crisis.

⁹⁴ Payment schedules for such cash transfers were, in fact, calculated in some of the early studies (Minten 2003).

- How to ensure that the system doesn't fall apart if someone offers a slightly higher price to cut the forest?
- Will there be diminishing returns over time; once people get used to receiving benefits, will they up the ante or will the benefits become less motivating?
- How to devise a payment system that is sufficiently robust to survive political manipulation and inevitable crises?
- Might not the rupture of payments be viewed as a license to deforest once people become accustomed to being paid to protect?
- How to maintain people's food security? Few remote people will be willing to depend on purchasing food in areas where food imports depend on precarious transport systems. Weaning farmers from *tavy* will require significant improvements to alternative food production systems.
- Will these very local/individual payments really be enough to help farmers transition to non-subsistence livelihoods and assure necessary growth in the economy?

Many of these questions are little different from those faced by conservation-through-development projects. They will probably only be answered over the next decade as more experimentation takes place, just as the potential and limits of the ICDP and landscape approaches only became clear once they were actually tried. There does seem to be a growing consensus that the most effective next strategy will probably involve some combination of payment for ecosystem services and the landscape approach (to identify and address some of the structural needs for transport, agricultural extension, economic and agricultural policies) since neither appears sufficient to address the complex challenges.

What is REDD really worth? The realistic potential of REDD payments must also be considered. Madagascar's existing forests cover something like 9.5 million ha. Estimates suggest that these forests sequester roughly 350T CO₂ per hectare (probably too high since approximately half the forests in question are dry or spiny forests). The World Bank has estimated that if carbon rights are sold for \$5 per ton of CO₂, avoiding deforestation could generate something like \$6 million per year (World Bank 2010). If we also take the World Bank's estimate that approximately 1 million people are affected by the SAPM protected areas and would be eligible for some form of payment (though perhaps at varying levels), we can quickly see that carbon funds will be insufficient to compensate proximate populations (who are unlikely to change their behaviors for \$6/person/year).

The problem is even more acute for the spiny and dry forests that have much lower sequestration potential (because the forests are so "thin"). For such cases, if PES is the chosen strategy, sources of funds other than carbon sales will have to be identified.

And finally, unless the forest is actually protected, REDD payments are, of course, not worth anything.

FIREWOOD AND CONSTRUCTION WOOD EXPLOITATION⁹⁵

Until recently, most attention to small-scale forest aggression was focused on *tavy*, which is not unjustified given that wood extraction is thought to account for only 5-20% of Madagascar's deforestation (Van de Plas cited in Jariala Stocktaking, 15). However, firewood harvesting is a threat

⁹⁵ A key source for this section is Jariala, *Etude Sur la Consommation et le Potentiel de Production de Bois* (2009).

in particular areas where fuel wood is collected from the natural forest (around Mahajanga, for example), rather than eucalyptus plantations. Recent studies suggest that it will be a growing threat as demand increases and the state seeks to protect greater expanses of natural forest. This is likely to become a point of increasing conflict.

Current estimates put domestic wood consumption at 21.7 million m³, of which nearly 18 million m³ is for firewood or charcoal production (household energy needs). Theoretically, available forests (outside protected areas) can produce up to 26 million m³ on a sustainable basis, though the production is not currently being managed in a sustainable fashion in most areas of the country. Even more worrisome, however, is the fact that this equation will change over the next 15 years. Since demand is growing by about 180,000 m³ per year and supply is shrinking by about 70,000 m³ annually, by 2027 there will be an overall deficit. As urban populations grow, the deficit will accelerate because urban populations consume nearly twice as much wood as rural populations (mostly because they use charcoal rather than firewood; charcoal, as it is currently produced, is a highly inefficient use of wood energy).

While not yet widely disseminated, projects have experimented with improving techniques both for charcoal production and for harvesting of construction wood (currently, on average, 5m³ of wood is harvested to obtain 1m³ of usable boards). If these techniques were widely adopted, they would push back the time when overall deficits are likely to occur by about 20 years. Given that much charcoal production and wood production (60-80%) takes place illicitly, however, it will not be easy to achieve widespread adoption rates.

While recommendations that Madagascar put more emphasis on gas or electricity as energy sources for cooking resurge with predictable regularity, most studies show that this is neither realistic (as they are much more expensive) nor advisable (as it would replace locally grown and, theoretically, sustainable wood with imported non-renewable energy sources).

Malagasy villagers' apparent apathy toward the natural forest (except as a potential source of land or other extractable resources) does not extend to trees in general. Many communities carefully tend their eucalyptus stands, planted under duress during the colonial period, but managed, sustained, and even expanded in the interim because of the high value placed on firewood and pole production. From the villager's perspective: if you plant a eucalyptus tree, it belongs to you and it's there when you need to cut it; if you protect a natural forest, there's a good chance that someone will announce rules that will limit your rights to cut, harvest, or otherwise take what you want from it. The choice at the community level is clear and explains why a village whose natural forest has been subject to fire, *tavy*, and extractive behavior may have been simultaneously nurturing and protecting its eucalyptus grove.

VALORIZING NATURAL RESOURCES

COMMERCIAL FOREST EXPLOITATION⁹⁶

Two assessments by international foresters in 2001 concluded that Madagascar's forests should be more productively managed and with an eye to increasing the commercial benefits. In his assessment Hagen lamented that there was not a single commercial forest being exploited on the basis of a management plan.⁹⁷ Winterbottom added:

Forest exploitation practices were highly inefficient. Based on human transport over long distances and the use of axes and other locally produced hand tools, it was uneconomic to use and market anything other than higher value species and hand-hewn planks. Only the highest value and most commercially valuable trees were cut – and less than 15% of the harvested trees were ultimately used. Secondary species were underused, and no efforts were made to ensure regeneration of a high-value second crop. With few controls or criteria for issuing permits in existence, many undercapitalized entrepreneurs were left to high-grade expanses of forests. Economic returns were low, production was unsustainable, incentives for regeneration were absent, and forest land use was unable to compete with shifting cultivation or conversion to other uses.

Some years later, Jariala (Jariala Annual Report 2006) judged that 80-90% of wood was still being extracted illegally.

In the battle over Madagascar's forests, local timber interests have often found themselves sidelined, especially once the Durban Vision threatened to put nearly all of Madagascar's remaining natural forests under protected status. Where, asked DEF, would the wood for fuel and construction come from under this plan?

As it turns out, after the SAPM goes into effect (affecting 6 million ha of land, of which 4.7 million ha is forested) there will still be over 4 million ha of forest (much of it in poor condition) that is not under formal protected area status. The Jariala project worked with DEF to develop a KoloAla (sustainable production forest) strategy.⁹⁸ The idea behind the KoloAla forest sites is to make sure that these forests are placed under active management as needed to meet Madagascar's needs for wood products, while contributing to economic development, and protecting essential ecosystem and conservation functions. It is estimated that a minimum of 2 million hectares needs to be set aside for production forests to meet Madagascar's current domestic requirements⁹⁹ for fuel and building wood.

96 Two key documents for this section are *Jariala Note Conceptuelle/KoloAla* (2006) and *Jariala Note d'Application/KoloAla* (2006).

97 He also noted that there was too much emphasis on developing management plans and not enough on making sure that they made sense and were actually followed (Hagen 2001, 8-9).

98 This equates with what UNDP/GEF have called Managed Resource Protected Areas (MRPA), balancing conservation with economic growth; the World Bank and European Union have also put considerable resources into KoloAla approaches.

99 These domestic needs are currently estimated at 4 million m³ per year, of which about 50% can be assured from existing pine and eucalyptus plantations. Humid forests can produce about 2m³ per ha of woody forest products (fuel and construction) and dry forests about 0.2m³ per ha.

Theoretically humid forests could produce up to 10 times more (240m³) usable wood per hectare than they do now (10-40m³ per ha). Sixty-year rotation schedules are assumed as a default necessity to ensure regrowth of slow-growing tropical species, though data is still lacking to determine optimal rotation patterns. As much as 40% of a given parcel would be reserved for biodiversity and hydrological purposes. The size of the parcels attributed to a particular manager would vary considerably according to the operator's management capacity but would be calculated to generate a profit while respecting sustainable management guidelines. A small community forest contract would perhaps cover only 5-10,000 hectares, while a larger operator might have a concession agreement covering 100,000 ha.

There are several management options available under the 2006 Forest Code, which allows for public-private partnership: (1) long-term contracts with the private sector under careful monitoring to ensure respect of management guidelines, (2) management by community groups (COBAs), and (3) government-managed but with short-term harvesting permits. The third option is the least promising due to likely problems with transparent and timely rebidding as well as high administrative costs.

Currently, about 803,000 ha of natural forest have been defined as KoloAla sites by the Ministry. Of these, about 100,000 ha are anticipated to be managed under government contract, 185,000 under contract with communities, and 113,000 under contract with private operators. Only 3,700 ha had actually been tendered with contracts awarded by the end of the Jariala project but management schemes had been drawn up for another five sites (370,000 ha). As with so many USAID interventions, these pilot interventions set the stage and have established procedures (manuals, standards for management plans, improved inventory and management techniques, draft contracts) that show the way to more widespread adoption.

Scaling up to a level beyond what can be mentored and supervised carefully by a project opens another set of issues and comes back to questions of sustainable governance. To be sustainable such management plans anticipate long-term (60-120 year) rotation strategies for various parcels within a forest block; private operators or communities who do not have confidence in the security of the contracts signed with the government are unlikely to adopt optimal long-term management strategies. Short-term contracts may be more credible, but would not result in the desired long-term sustainable management.

For sustainable harvesting to work, it is critical that "legitimate" forest products be differentiated from those that have been harvested illegally since it is more expensive to harvest sustainably and illegal products engender unfair competition. The "chain of custody" model (a series of procedural reforms, accompanied by a new wood marking system, computer monitoring software, and training) developed by DEF and Jariala at least theoretically enables forest products to be tracked from place of origin to final use. If legally adopted and applied, this tool will be a powerful addition to the forest management arsenal.



Protected areas under the new SAPM system will be zoned into various categories, approximately half of which will involve some degree of co-management with either local communities or private operators. Some KoloAla (production forest sites) will be within the protected areas, while others may be defined outside the protected area system. (Photo credit: IRG)

These sustainable forestry practices are at a nascent stage in Madagascar and their effective deployment will require a sustained effort on the part of the international community. Risks are inherent in the extraction of natural resources, especially when the State is weak and corruption is systemic. There is a strong sense, however, that the alternative (no harvesting from Madagascar's natural forests) is both socially untenable and economically wasteful.

NATURAL PRODUCTS MARKETS¹⁰⁰

Several projects (specifically LDI and BAMEX) have studied the potential of natural product markets. Their work confirms the conclusions of studies carried out in other parts of the world: natural products have significant economic potential but they often involve worrisome trade-offs between conservation and development objectives.

Natural products and sustainable harvest. While it is sometimes assumed that the product's economic value will motivate producers/collectors to manage the resource sustainably, growing demand frequently leads to overexploitation. This is especially true when tenure relations are unclear and people harvest from common areas. Where people are very poor and have a high discount rate, they are also likely to try to capture maximum present benefits, rather than planning for a modest but more sustainable income stream into the future.

Both phenomena have been observed in Madagascar. There are cases where the collection of silk worms has caused farmers to control fire in the worms' natural forest habitat, for example, as there are cases where commercial harvesting has seriously damaged a natural population. *Prunus Africana*, whose bark is used in herbal medicines is in the second category. It was eventually put on a CITES (Convention on International Trade in Endangered Species of Wild Fauna and Flora) list banning exports in order to encourage regeneration of the over-harvested populations. In short, the motivation to sustainably manage commercial forest products cannot be assumed; instead, clear harvesting guidelines and enforcement measures are necessary.

In theory, natural markets provide interesting economic potential for remote communities where they represent secondary economic activities that complement farming. This is a complicated sector; however, where local harvesters are easily exploited. Products that are commercialized locally (and there are many, as Malagasy are heavy users of natural medicines) are considerably less complex, but also less lucrative. Some sell on the informal market and some enter the domestic formal sector. The Institut Malgache de Recherches Appliquées, for example, conducts research on natural product-based medicines and markets quality products domestically. When products (especially medicinal) enter the international market the stakes rise considerably. These products are highly regulated and often demand international certification (e.g. organic, fair trade). These complex issues, as well as the long distances to market, mean that there are multiple layers between the harvester and the final buyer. It is promising that the KoloHarena cooperatives have, in a few cases, succeeded in substituting for some of these intermediaries, thereby increasing benefits to their members.

In short, like so many niche markets in Madagascar, this sector holds some promise but requires significant inputs to meet its full potential and to guarantee the quality and quantity of products put on the market. In addition, there must be careful monitoring to be sure that rapacious extraction for short-term benefit does not do more damage to the environment.

¹⁰⁰ A key document for this section is Juliard et al. *Madagascar Aromatic and Medicinal Plant Value Chain Analysis* (2006)

ECO-TOURISM¹⁰¹

Eco-tourism was viewed as a promising lever for environmentally friendly economic development from the first days of the NEAP. The early ICDP experiences anticipated that eco-tourism could make a significant contribution to about one-quarter of the country's parks, while the others were unlikely to benefit due to their remoteness, lack of facilities, and lesser interest for visitors. Experience of the past decades has continued to emphasize that this sector should generate moderate benefits, but cannot solve all the financial problems for communities and parks, as some of the more quixotic reports seem to expect. Having said this, before the 2009 political crisis, tourism was the second most important source of foreign exchange (\$400 million in 2008), after shrimp exports (World Bank 2010).

Favorable characteristics of the tourism sector. The tourism sector in Madagascar has some characteristics that are favorable, while others are more challenging. On the favorable side, the dispersal of sites of attraction in different areas of the country, and the fact that most are fairly remote and rural, make it easier to link tourism to poverty reduction and, at least theoretically, to ensure that benefits are more widely distributed. The rules calling for 50% of tourist park entrance fees (DEAP funds) to be used for local development projects have been a source of major benefits for some park neighbors. The pressures on these funds are great, however; at times, local officials have tried to get their hands on the money, while during other periods ANGAP/MNP has called for all the funds to be returned to headquarters and then redistributed from there. Supposedly this was to enable less popular parks to gain some of the tourism benefits but it has raised suspicion and angered communities around the flagship parks.

Tourism challenges. Several issues line up on the challenging side, however. First, the overall number of tourists has thus far been limited by the number of incoming flights, which are few in number. This not only physically limits the number of incoming visitors, it also keeps prices high. On average, 60% of tourism expenditures go to airfare into the country, which is unusually high. Second, the extremely poor transport infrastructure means that most tourists do not venture forth on their own, but depend on central Antananarivo-based agencies. These groups tend to channel tourists on well established routes, which limits the dispersal of benefits. It also causes overcrowding at some parks and underutilization of others. Third, the whole industry is highly vulnerable to the political crises that get broad international coverage and can decimate the industry for extended periods.¹⁰²

One of the issues is whether eco-tourism is intended primarily to help the environment (benefiting the national parks and immediate surroundings, for example) or whether it is being asked to contribute more generally to poverty reduction. For the moment, the former seems more promising, especially as Madagascar has accepted the principle that private investors will be allowed to acquire concessions (for hotels, food service, etc.) within the park boundaries. USAID projects have recommended a concessioning policy since EP I, but ANGAP has been reluctant to relinquish hold over this potentially lucrative sector. This issue has now been resolved in favor of private management of facilities within the parks. Model contracts and even potential financing through the International Finance Corporation (IFC) are available for interested investors, though the crisis and dramatic drop in tourist numbers has dampened interest for the moment.

Within the parks, sometimes arbitrary rules (e.g. no night-walks in some parks and discouraging camping in the parks) limit the tourist products that can be offered and can lead tour operators to propose similar products outside the parks, with a pursuant loss of revenues to the park system.

101 A key document for this section is USAID/CI, Increasing Competitiveness of Micro and Small Enterprise in the Tourism Industry of Madagascar (2009)

102 International visitors to Madagascar fell from 345,000 in 2008 to 156,000 in 2009. From 2001 to 2002, there was a drop from 170,000 to 62,000.

Fearing that anarchic development might kill the golden egg of tourism around the most popular parks, several USAID-funded projects have tried to address tourism development issues. The CAP, LDI, and BAMEX projects all worked with the government to establish Zones of Economic Activity where, on one hand, eco-tourism would be encouraged if it met certain standards of the industry, while prohibiting random development in these ecologically sensitive areas. This effort was more successful in addressing the first issue than the second. There are several examples of large eco-friendly hotels in areas where they were formerly lacking, but in many cases they are surrounded by haphazard development that little honors the milieu.

There have also been efforts, both by projects and the eco-establishments themselves, to encourage backward linkages that would benefit local communities. While again, there are isolated successful examples, many operators have been frustrated by the lack of response by local communities. The biggest hotel in the vicinity of Isalo Park (one of the most visited parks at 30,000 tourists per year), continues to provision its vegetables from cities more than 200 km away. From these and similar experiences, it is now clear that these types of linkages will require considerably more inputs to help farmers and local communities meet the rigorous requirements of the tourism industry.

Land tenure issues are also a constraint to developing community friendly tourism. In one recent case a project purposely tried to attract an investor to build a hotel in a community-managed forest. In the end, the business decided to seek a concession in one of the national parks, fearful that tenure arrangements were too insecure on community lands.

In looking ahead to the development of the tourism sector in Madagascar, several analyses have noted that higher tourist numbers have been accompanied by lower “yields” (expenditures) per tourist. This is generally not considered positive in the industry and specialists in the field have encouraged Madagascar to focus on higher end visitors. While there are certainly some benefits to this approach, others caution that maintaining diversity in the tourism sector (as in so many other areas of the Malagasy economy) may be a sensible risk aversion strategy.¹⁰³

On the positive side, there is a growing movement in Madagascar to promote village-level tourism by the “backpacker” set. While this will never have a significant impact at the national scale, it can have a very notable effect on local communities. Some NGOs are working to develop a network of these sites, thereby making them more accessible to international tourists (via web sites, etc.). Some of the corridor villages in priority eco-regions have been able to benefit from these initiatives.

103 Different tourism profiles react differently to political crises, for example, with independent and French tourists returning sooner than high spending tour groups.

GOVERNANCE

This penultimate chapter discusses the thorny problem of bad governance which, unlike the spiny forests of Madagascar, shows little sign of disappearing. From the earliest NEAP documents, there has been a strong emphasis on institutional capacity building. Yet, as USAID projects have invested monumental efforts to create and support environmental institutions, they have come up against governance issues that paint a constant backdrop of frustration and periodic episodes of massive upheaval.



There have been tremendous efforts to improve governance. Here, a photo shows one of the National Leadership Institute's training programs for Madagascar's 17,500 fokontany chiefs. While both leadership and government training efforts have taken place at all levels, they have not yet produced the "good enough" governance needed for economic development and environmental protection. (Photo credit: Paul Porteous)

In assessing the impact of governance issues on Madagascar's environment and program results, we should look at both "normal" and crisis periods, and wonder whether crises have become a characteristic feature of Madagascar's political landscape.

PROBLEMATIC CHARACTERISTICS OF MALAGASY GOVERNANCE

Business as usual

A culture of turn-taking. The uncertainty of political tenure in Madagascar, combined with the lack of democratic and civil society institutions that could demand accountability, has created a culture of political "turn-taking" where top posts in government are viewed by many as opportunities to "take one's share" before being thrown out. Governments are reformulated with great frequency. Ravalomanana reshuffled his cabinet no fewer than 11 times during his

first five-year term in office. Because lower staff positions in the ministries are distributed as political booty and ministers need sympathetic staff who will not be unduly rigorous in their management of state assets, key officials with substantive responsibilities are swept out with changes at the top. The results of painstaking training and mentoring exercises are lost as ministers and their staff are dispatched from the scene. This results not only in expensive loss of management capital, but it can take months after such a ministerial reshuffle for basic services to resume to some degree of normalcy, leaving policies – and their enforcement – in limbo.

Corruption. As the potential to reap personal benefits from the environmental sector are considerable (logging permits, significant donor funds), the ministry in charge of environment¹⁰⁴ is among those most highly coveted and many of its ministers are known to have benefited from illicit activities (as have the presidents under whom they served). When ministers are blatantly corrupt

104 As previously noted, environmental issues have been treated by different ministries over the period in question.

and are not sanctioned for their activities, it is nearly impossible to create a culture of honesty lower in the organization. Project documents comment repeatedly that corrupt practices are rampant throughout the system.¹⁰⁵

Corruption undermines environmental programs at all levels and its insidious impacts reverberate throughout the system. Permits for logging, mining, and even *tevy-ala* are distributed liberally in ecologically sensitive zones. When a local DEF agent knows that the Minister is selling precious hardwoods by the shipload, he can hardly be blamed for taking a \$12 bribe (about half his monthly pay) to issue a woodcutting permit. The permit itself might result in only 2 or 3 hectares of forest being cut. But it ends up having a much greater impact if a village of 100 people who had agreed to forego *tavy* observes the illicit deforestation, and everyone decides that they might as well get a piece of the forest before it all disappears to the logger.

While rent-seeking behavior can be found at all levels and in all sectors, financial reserves pose particular temptation, especially for authorities who do not expect to be around very long and have, as a result, little motivation to anticipate future problems. Graft has direct effects on the environment. Funds set up for road repair (Fonds d'Entretien Routière or FER) are diverted to other purposes and roads built by USAID projects (usually farm-to-market roads needed to encourage commercial agriculture and reduce forest pressures) are often nearly impassable after a few years due to lack of maintenance.¹⁰⁶ Politicians have tried to divert DEAP funds (revenues from the parks, to be split with local communities where they are supposed to be used for development interventions) for political purposes. Such incidents, multiplied across a multitude of sites, sectors, and levels, begin to play a systemic role in undermining policy implementation.¹⁰⁷

Corruption, multiplied across a multitude of sites, sectors, and levels, plays a systemic role in undermining policy implementation. When the donors are physically present and vigilant, they are able to modulate some of the worst abuses, but this addresses neither the problem of leakage, nor its likely resurgence once the project is no longer present.

The office responsible for controlling corruption is the Bureau Indépendant Anti-Corruption (BIANCO), established under the Ravalomanana administration and supported by MISONGA. While BIANCO has made significant progress in dealing with local level corruption, larger and more politically sensitive transgressions are rarely addressed (the DEF agent is more likely to end up in court than the Minister). This is in part because BIANCO operates directly under the presidency and has only limited independence. (More politically sensitive transgressions are rarely addressed: the DEF agent is more likely to end up in court than the Minister.) BIANCO is also handicapped by corruption in the courts, recently rated as the third most corrupt

105 This looting of natural resources for private gain and its various nefarious effects is sometimes known as the "resource curse." It has been identified as a factor restraining economic growth in many very poor countries.

106 Recognizing this problem, the CAP project put in a system of tolls on its rural roads. The system, in which local communities collected the tolls and actually carried out the repairs themselves, worked well until a few well placed truckers got the President's ear and tolls were banned.

107 While one hesitates to venture into cultural issues in discussing patterns of corruption and bad governance, many people (including Malagasy interviewed for this paper) surmise that certain fundamental aspects of the Malagasy culture contribute to the perpetuation of these practices. Specifically, Malagasy are very hesitant to call others to task since maintaining positive social relations is a paramount social value that can in some cases trump concern for actual results. (For example, you would not fire someone simply for incompetence since this would cause the person to lose face and could result in an undesirable social backlash.) This phenomenon also undermines social accountability and leads to what some have labeled a "culture of impunity."

institution in Madagascar, after the Gendarmerie and Lands offices. Even if BIANCO succeeds in getting a violation to court,¹⁰⁸ cases against wealthy or powerful individuals are frequently thrown out.

BIANCO has had serious capacity problems, made worse by recent donor funding freezes. In 2008, USAID, Norway, the World Bank, FDR, IMC, and the GoM funded BIANCO. Of those only Norway has continued to fund the corruption office and their budget has been slashed in half (to less than \$7 million a year). As a result only about 300 of the 5,000 cases submitted in 2009 were actually pursued.¹⁰⁹

Projects have dealt with the problem by trying to control corruption within their direct zone of influence, whether at the community, commune, or central level. When the donors are physically present and vigilant, they are able to modulate some of the worst abuses, but this addresses neither the problem of leakage (corruption moves to a place where no one's looking) nor its likely resurgence once the project is no longer present.

Are crises normal?

Madagascar has suffered four acute political crises since Independence, three of them – 1991, 2002, and 2009 – during the 25 years covered by this report. This begs the question of whether such intermittent crises have become a normal characteristic of the political landscape. If so, this may differentiate Madagascar from other countries which suffer from similarly weak institutions and structures. This paper will not attempt to analyze the underlying politico-cultural context that contributes to this pattern but we note that the basic elements necessary for orderly political transitions do not yet exist (e.g. solid political parties, objective electoral systems and courts, systems of governmental checks and balances).

The political system has low credibility with the population, which opens the door to movements that appeal directly to the populace, mobilizing their discontent to effectuate change outside the electoral system. Each of the four crises has capitalized on widespread frustrations, calling people into the streets to demand change. These movements have succeeded in ousting unpopular leaders, without dealing with any of the underlying frustrations, whether lack of political voice or difficult living conditions, that caused the initial discontent.¹¹⁰ The pattern of political change being brought about by social movements motivated more by frustration with past abuses than any forward-looking vision for how power should be used to advance the national interest is becoming more deeply entrenched. As such, it is not irrational to think that intermittent crises will remain a predictable part of the political landscape for at least the foreseeable future.

108 Another interesting example of enforcement complexity is the Task Force established in October 2009 to try to control illegal rosewood exports from the northeast forests. Joint patrols by the army, gendarmerie, and police have been very effective in arresting some 300 loggers, all of them local workers (not the powerful interests behind the exports). The Tribunals have not been able to keep up and most of the cases have been thrown out or not dealt with. Rosewood exports continue unabated with poor farmers under pressure to participate in the logging since otherwise the vanilla exporters (who also control the rosewood sector) refuse to buy their vanilla. (Personal communication, Richard Marcus)

109 Personal communication, Richard Marcus.

110 The first crisis (1972) may be an exception to the extent that it did finally rupture colonial bonds, though the economic situation that followed was undeniably worse for most Malagasy. The 2002 crisis brought people to the streets to protest electoral vote rigging and resulted in President Ravalomanana taking power. His regime was later accused of similar electoral abuses.

LOCAL GOVERNMENT

Project experience working with local government institutions has been somewhat more positive, though far from consistent across sites and situations.¹¹¹ In particular, there have been some successes at the commune level. There are several reasons for this, notably that people actually know one another at this scale so there is a greater sense of accountability. Communes, focused primarily on immediate and usually pragmatic concerns, resist hyper-politicization and grandiose empty promises. In addition, people can clearly monitor whether promises (or funds) are translated into interventions and whether those interventions actually benefit the population or not. This introduces a degree of transparency and accountability that is largely absent at higher levels. Finally, the nature of these usually rural and often remote communities is that people tend to stay put. This means that even when there are changes in elected officials, people who have been trained remain in the community where their skills can be used.

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skills to manage their internal affairs, raise and properly use tax funds, and lobby government authorities to address critical problems (e.g., road washouts). This was beginning to have some positive results. The EP III “Commune Mendrika” program focused on commune level planning and interventions, with rewards for good governance and other achievements. MISONGA began to get promising results with its mentoring program for female commune mayors.



The Commune Mendrika (Progressive Communes) program rewarded communities that made significant progress toward environment, health, governance, and economic goals. (Photo credit: Erica Brewster)

Still, we should remember that Madagascar is a highly centralized country, with 97% of revenues generated from the center and less than 3% ending up at the commune level (Civil Society 87). ERI provided administrative and mentoring support to communes along the forest corridors by supporting the Centre d'Appui aux Communes (CAC) and reinforcing commune

¹¹¹ Variability is high and it is dangerous to assume that communes behave responsively and accountably, though it is sometimes happily the case.

While publicly lauding the communes, recent government policies have done much to undermine their independence, demanding upward accountability rather than responsiveness to constituents. The Ravalomanana “decentralization” was in fact a deconcentration¹¹² of power that translated into a massive national effort to dominate and control not only the 1,392 communes (to the point of imposing election results if necessary) but also the even smaller fokontany (approximately 17,000 in number, each with roughly 1,000-4,000 inhabitants). This was particularly insidious as it extended the reach of the predatory state to this previously relatively responsive level of local government.

CIVIL SOCIETY¹¹³

There is widespread agreement that a more robust, daring, and visionary civil society movement could positively influence the political situation in Madagascar; help to temper abuses of power; and possibly facilitate the emergence of more democratic and sustainable institutions. In other parts of the developing world, civil society organizations serve as the training ground for future leaders. This is not the case in Madagascar where civil society institutions remain notoriously weak, even in comparison to African countries.

Characteristics of Malagasy civil society

While there are many types of civil society institutions, most in Madagascar fall under the category of “associations,” which is a catch-all term used to denote voluntary organizations separate from the State, whose purpose is not primarily profit-sharing (i.e., clubs, associations, and groups). Registering an association is relatively simple (Association Law of 1960) and there are a multitude of small and very resource-poor associations that, even in their own estimation, accomplish little. A recent World Bank survey found that 42% had budgets of less than \$100. The same survey found, not surprisingly, that 67% judged that they were never or only occasionally effective (World Bank 2010, 94) To the extent that they have an impact, it is usually at the community level.

About 9% of the civil society institutions in Madagascar are registered as NGOs. The NGO law was put in place in 1997, with help from the KEPEN project, in part to identify and certify the more robust organizations. As such, NGO status is more exigent, requiring a board of directors, a regular income flow, and a financial controller. The requirements are so rigorous that few apply and Madagascar currently has only 116 officially registered national NGOs. Furthermore, as the Bank’s Civil Society Assessment notes, most of these NGOs are not representative bodies and therefore do not qualify as civil society organizations.

Instead, many of Madagascar’s NGOs are focused primarily on service delivery. The disengagement of the State in the 1980s left large areas of Madagascar with few, if any, social services. This, alongside the donor desire to work through local NGOs and promote capacity building, spurred the creation of a cadre of semi-specialized service-oriented NGOs (including several in the environment sector) that work primarily to implement donor activities. Linkages with donors accord them a more solid

112 Madagascar’s international partners have too frequently confused decentralization (which should normally transfer power to local authorities, thereby empowering the base) with deconcentration of power (which extends state power further and has often been used primarily for political ends or to extract resources from the base). As such they have at times been unwitting accomplices in undermining local empowerment.

113 A key document for this section is the World Bank’s *Civil Society and Social Accountability in Madagascar* (Forthcoming). In this document, **civil society** is defined as “the arena, distinct from the market and the state – in which citizens come together to pursue common interests through collective action, neither for profit nor for the exercise of political power.” **Social accountability** is defined as the articulation of accountability relationships between citizens and the state, referring to (1) the broad range of actions and mechanisms (beyond voting) that citizens can use to hold the state to account; and (2) actions on the part of government, civil society, media, and other social actors that promote or facilitate these efforts.” (World Bank 2010, 15)

financial status, but their principal ties are often to the donor whose programs they are implementing rather than to a constituent interest group. While these NGOs play a useful role, they are unlikely to rock the boat by demanding State accountability or transparency.

The melding of politics and civil society. There is considerable overlap between civil society and political leadership, especially in civil society organizations operating at the national level. Consequently, ties between civil society and political power are closer than the ties between civil society and their base (Personal communication, Marcus). In fact, many civil society organizations have no real base and are composed of an elite clique surrounding an influential – or “wannabe” – politico. Such organizations will not act as government watchdogs and are vulnerable during periods of political upheaval as they jockey for influence.

The churches represent the broadest based civil society movement in Madagascar and do play a role in demanding social accountability (calling for less corruption and more electoral transparency, for example) but their credibility has been compromised by internal corruption and the intertwining of church and political leadership.¹¹⁴ This results in easy manipulation of the church for political ends.

USAID efforts to strengthen civil society

USAID has intermittently attempted to reinforce civil society institutions (from the earliest days of EP I, with the PVO-NRMS project, then the LOVA component of SAVEM, ILO, RARY, and MIRAY, concluding with the abbreviated MISONGA project in EP III) but the results are far from conclusive. One of the factors limiting USAID's success in this domain has been the fragility of DG funding and the short time frames of projects. ILO was a three year project (that unfortunately coincided with the 2001 crisis) and MISONGA closed early when funding for the Mission's Democracy strategic objective was substantially decreased. In Madagascar, where success is based on carefully nurtured relationships and trust, these brief projects barely advanced beyond the start-up phase. This has seriously hampered capacity building¹¹⁵ efforts, which require sustained and gently persistent interventions.

Communications and information. Among the more promising interventions intended to facilitate civil society organization are those that have significantly improved Madagascar's notoriously poor rural communications and access to information¹¹⁶ more generally. While the situation has improved considerably over the past decade, many of the more remote areas of Madagascar have until very recently had no cell phone coverage (and this is still the case in many mountainous areas near the threatened rainforests). MISONGA distributed hand-crank radios and created rural listening groups; the Last Mile Initiative facilitated internet service in Ranomafana village next to the park; ERI put ham radios into corridor villages allowing them to communicate with one another and with the city for the first time and successfully pressured the private sector to extend the cell phone coverage to at least parts of the corridor.

114 The current situation where ex-President Ravalomanana is the Vice President of the FJKM, ex-President of the National Assembly Lahaniriko is a pillar of the Lutheran church, and the Catholic hierarchy rather quickly gravitated to putschist Rajaolina is a case in point.

115 We make a distinction here between sectoral projects that use NGOs as implementers for their interventions and build sectoral capacity (in health, for example) and projects that are specifically focused on civil society capacity building, strengthening locally based agendas and advocacy.

116 Civil society has been trying to get a law passed guaranteeing the public's access to state information. Promoted by the President's Council to Fight Corruption (CSLCC) and validated by various technical committees and donors, efforts to promulgate the law were abruptly nixed by President Ravalomanana in 2006.

The effects of these types of intervention are hard to quantify, but without basic communication services it is hard to imagine any serious mobilization of civil society in these remote areas. Similarly important as a building block for civil society was ILO and MISONGA support for documentation centers in Fianarantsoa and Mahajanga that have significantly increased access to information and continue to promote non-political policy dialogues on relevant local issues.

Civil society coordination. The fragility of civil society institutions is reflected in their coordinating bodies. The recent MISONGA effort (2005) to create the Common Charter for Civil Society Organizations and the Plate-forme Nationale de la Société Civile Malgache (PFNSCM) is the third effort to establish a civil society coalition over the past 15 years. The first (under PVO-NRMS) failed when politics created internal divisions in the coalition; the second association was also killed by political maneuvering when opposition leaders tried to use the association to destabilize the government. The latest association is said to represent over 2,000 civil society organizations from all sectors but is already subject to internal strife. The President of PFNSCM is the wife of a former minister, and there is concern that it will also be drawn into politics.¹¹⁷ As has so often been the case

with DG interventions in Madagascar, support from USAID has not been sustained enough to provide the continued mentoring needed to get these coordinating bodies beyond the start-up hurdles.

The KoloHarena Farmers Associations.

It is interesting that the civil society movement that may be the most well established among those mentored under USAID projects is the KoloHarena farmers movement.¹¹⁸ Initially, the KoloHarena associations had a strong environmental focus. The target population was the farmers living immediately adjacent to the USAID priority forest corridors. In return for agreeing to forego *tavy*, farmers who joined the association were eligible for credit and other project assistance to help them undertake alternative agricultural and livelihood ventures. The movement has gained strength over the years as it has responded to the practical needs of its members (e.g. running remote agricultural supply centers and helping farmers connect to buyers for commercial crops). KoloHarena effectiveness has been greatly enhanced by their access to the ham radio communications system that the projects installed in communities along the forest corridors.



The KoloHarena Farmers movement has been one of the most successful civil society interventions implemented under USAID projects. As the association has grown and matured, however, some of the environmental focus has dissipated. Here community extension agents receive certificates honoring their work. (Photo credit: Pierrot Men)

117 MISONGA also helped the Ravalomanana government create the Consortium pour la Participation Citoyenne (CNPC 2005) that is intended as a meeting place for government, civil society, and the private sector. It includes representatives from civil society, religious organizations, the public sector, high level government and political parties, the private sector, and the media. The relationship between the Plate-forme and the Consortium has been conflictual, and it is not clear what will happen to the consortium with the change in government.

118 Supported by environment projects (LDI and ERI) for more than a decade, this intervention was not dependent on DG funding.

The KoloHarena movement now numbers nearly 1,700 associations, serving about 20,000 members. They are joined in 30 cooperatives and 18 federations. Concomitant with KoloHarena growth, however, has been a corresponding decline in its environmental focus. New associations are being formed far away from the corridors and the emphasis has shifted to meeting agricultural needs. From a sustainability perspective this is probably good, since it reflects the association's responsiveness to member concerns rather than the interests of the project that founded it. The movement offers some hope that people can and will organize around shared interests, though it's still too early to judge how it will fare now that the sponsoring projects have ended. It can hardly be said to represent, however, the still elusive "indigenous environmental movement."

Civil society, politics, and fear

There are few studies of why civil society institutions are so persistently weak, but their tendency to politicization is undoubtedly a factor. With few outlets for political expression and notoriously weak political parties, they often become tools for short-term political maneuvering, without reference to guiding principles, or allegiance from a solid community base. This discourages participation by citizens who fear being drawn into risky political machinations.

Civil society institutions focused on service delivery are understandably reluctant to mobilize for social accountability (calling politicians to task for corruption or even advocating for local interests) because this is immediately defined as "oppositional" by those in power. There are multiple avenues for punishing those viewed as being too critical, whether through tax audits, sending thugs to intimidate, or withdrawing visas (when foreigners are involved).

As donors encourage civil society institutions to move beyond the immediate needs of their members and demand state transparency and accountability, we risk burdening them with an inherently political responsibility. In so doing, we may sabotage their chances for success on more mundane, but nevertheless crucial issues (e.g., selling beans and ginger). It is critical that the international partners remain sensitive to this paradox as they work with fledgling groups like the KoloHarena.

Finally, it is worth asking not only whether strengthening civil society is possible in the short and medium term (experience to date is inconclusive), but also whether doing so will indeed translate into a stronger indigenous environmental agenda. If there is not a genuine, grassroots concern for the environment, there is little reason to think that civil society would adopt this as a long-term issue.

As donors encourage civil society institutions to demand greater transparency and social accountability from the State, we burden them with an inherently political responsibility. In so doing, we may sabotage their chances for success on more mundane issues like selling beans and ginger.

GOVERNANCE AND THE ENVIRONMENT

The intricate interdependence of economics, environment, and governance is manifest every day at every level in Madagascar. The cumulative result of their mutual sabotage is a rural economy that has been stagnant or deteriorating for four decades. The periodic political crises have impacts that are anything but subtle, however, and illuminate the extent to which environmental programs and economic development are both fundamentally hostage to bad governance.

In each of Madagascar's political crises (1972, 1991, 2002, and 2009), the economy has suffered huge setbacks as a result of extended political turmoil. It can take years to re-establish stability and get political and economic structures back to the point where they operate "normally." The cumulative effect of multiple crises is particularly damaging as investors realize that these are not isolated incidents. With two crises in less than a decade, Madagascar has now lost substantial credibility with its business partners. This is especially serious in sectors like tourism and textiles (an industry that is set up to enable rapid flight if conditions turn unfavorable) that are sensitive to political instability. Returning the situation to day-to-day "normalcy" does not necessarily translate into immediate reinvestment in these sectors.

Madagascar's political crises invariably involve long periods of confusion where government systems falter, salaries are not paid, and there are few attempts to enforce the law. When, as now, donor projects are put on hold, there is a near total vacuum in terms of monitoring and control. The result is a free-for-all, open access situation where pent up demand for resources is liberated and massive amounts of irreversible damage can be done in a very short time.¹¹⁹

As the economy goes into a tailspin and people living at the margins are thrown into even more extreme poverty, *tevy-ala* induced pressures also intensify. Again, the long-term effects are greater than the immediate deforestation impact. We now know that agricultural pressures on the forest corridor are not only peripheral. With most of the corridors so narrow as to be easily accessible throughout their width, patterns of occupation are highly opportunistic. Farmers seek the best land, often far into the interior of the forests. These farmer pioneers act as poles of attraction for other newcomers, further fragmenting vulnerable corridors. It is extremely difficult to later remove people from these established settlements. The effects of a political crisis on the environment can undo years of program investments.

Another often uncounted cost of political crises is brain-drain. The longer the duration of the crisis¹²⁰ and the more that donor activities are thrown into disarray, the more likely that the most competent and highly skilled Malagasy will find jobs outside the country. If and when (presumably under more propitious conditions) USAID projects return to Madagascar it will be important to attract this professional cadre back to Madagascar and to valorize their skills in the new projects.

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119 Some of this is done by opportunistic and highly organized forces, sometimes with government linkages. The current rapacious exploitation and export of hardwoods from the northeast is an example. In 2009, 25,000m³ of illegal (the GoM issued "exceptional permits") precious hardwoods were exported from the northeast PAs. While conservationists believe that this will not have a huge biodiversity impact (unless the logging continues for an extended time), its financial effects are undeniable. The World Bank estimates the value of this wood at \$200 million, of which 25% would have been captured by the State if the wood had passed through normal legal channels (Carret, et al. 2010).

120 The 1991 crisis was lengthy, but few Malagasy were yet working in projects. The 2002 crisis was shorter; the current crisis has now lasted more than a year and is likely to disrupt the economy for significantly longer even if the political issues are resolved. Several former project and USAID employees have already left to take up long-term positions managing environment programs in other African countries.

Discussion

Bilateral and multilateral donors are more or less obliged to partner with recipient governments, which may explain their institutional optimism that the State is a benign force, or can be trained to be one. This attitude is reflected in continued efforts to “reform” the public sector and to train and mentor state institutions. It assumes, implicitly, that “The State” wants to be reformed. It is perhaps time to question this assumption and reflect on what it means for environmental programs should it prove to be false.

While not funded by USAID, the difficulties encountered by Harvard's Kennedy School (which intensively mentored the Ravalomanana regime to the point of seconding professors to work within the Presidency and key ministries and carried out major leadership training exercises) in effecting significant governance improvements offers an interesting case study of the limits of such reform-minded approaches. Initial donor optimism that the Ravalomanana regime (2002-2009), which campaigned on a platform of change and seemed to start off with genuine proclivities to reform, would carry out significant governance improvements was dashed as the positive rhetoric of the earlier years was overtaken by practices sadly similar to those employed by previous corrupt regimes.¹²¹

We are left with the question of whether progress on environmental issues can take place in a context of a State that may not want to be reformed and may not have a true commitment to sustainably manage its environment.

Real or expedient commitment?

Documents such as the NEAP, the Durban Vision, and the MAP were largely drafted by outsiders. Both donor governments (that have to demonstrate local buy-in) and the GoM (that desperately needs the accompanying financial resources) have an interest in demonstrating a Malagasy commitment to the principles of these documents in order to maintain aid flows. If, as some have suggested, the GoM commitment to these donor-driven agendas is at times more expedient than real (Brinkerhoff and Yeager 1993), it is not surprising that implementation is characterized by passive, but very deliberate, resistance. This helps to explain the litany of substandard achievements in the environment policy sector, which may not be entirely accidental. Were there a robust grass-roots (or even intellectual) environmental movement to hold leaders accountable for their rhetoric, the words might actually start to mean something over time. In fact, however, there is little apparent support from the base. To the contrary, in many cases politician-leaders tread a fine line between persuading the donors that they are assiduously following an environmental agenda, while simultaneously reassuring the populace that they won't go very far in that direction.

It's getting harder to impose good government. On the donor side, it is increasingly difficult for donors to “impose” good governance procedures in Madagascar or to hold the GoM to its own stated policy goals. Development trends of the last decade have favored direct government support and limited oversight (so as not to be accused of meddling or non-respect of recipient governments). If one donor puts conditionalities on its support, the GoM merely seeks out another

121 The World Bank's Corruption Control Index gave Madagascar a score of 59.7% in 2002, but considered that the situation had deteriorated to merit a score of only 51.5% in 2006 (Carret, et al. 2010, 85).

who will provide similar assistance with fewer management strings attached.¹²² While this tames donor arrogance, it has reduced accountability across the system and allowed inefficiencies and corrupt practices to persist longer than they otherwise might have.

The issues raised here are by no means unique to Madagascar; though Madagascar's governance problems are profound and persistent. The fact that other countries face similar issues is not much consolation, however; unless we can show that those countries have made rapid and significant progress on economic and environment indicators in spite of governance weakness. In Madagascar, we are left with the question of whether progress on environmental issues can take place in the context of a State which may not want to be reformed and may not have a true commitment to sustainably managing its environment. At a minimum that conclusion would beg a change in the "benign state" approach employed by donors over the past quarter century.



Saving the Fianarantsoa forest corridor depends in large measure on saving this train line that traverses the corridor. The FCE railway debacle sadly illustrates how bad governance can sabotage economic and environmental progress. (Photo credit: Pierrot Men)

The Perfect Failure

The Fianarantsoa-East Coast (FCE) railway intervention reflects USAID's efforts at their best. Creativity, continuity, cooperation, flexibility, strategic "out-of-the-box" thinking and extraordinary mobilization of local communities all contributed to what might have been a winning project... yet turned out to be a spectacular failure. The following is a sobering illustration of the interconnectedness of environment, economics, and governance.

The railway crosses the Ranomafana-Andringitra forest corridor: During EP I, the CAP project began some tentative efforts to repair the ailing line because commercial agriculture in the region depends on viable transport systems. In 2000, the railway was devastated by two cyclones. With train service halted and the line buried by landslides, the PAGE project carried out a cost-benefit analysis to assess the consequences if the line did not resume operation. The results showed that a likely 100,000 ha of primary forest would be cut by farmers who, deprived of the opportunity to sell commercial crops, would revert to slash-and-burn agriculture.

This conclusion engendered a rapid response: LDI worked with USAID to mount an intense campaign to save the railway. Eventually, \$4.7 million of supplemental congressional funds were obtained to carry out an FCE Rehabilitation (FCER) Project. Armed with the PAGE

¹²² Still, even in the 1990s when USAID was one of the largest donors, threats to withdraw funds if the government did not make adequate progress on structural adjustment fell on deaf ears. USAID did actually carry through on the threat and pull back significantly (as described in the first chapter). A more recent example was MNP's ability to ignore USAID demands for more rigorous accounting. When USAID withdrew its funds, the Park Service turned to the Germans for support.

studies and a new Master Plan of what was needed to properly rehabilitate the line, FCER persuaded other donors to add more than \$10 million to the endeavor, leveraging the Congressional funds several times over.

In the meantime, on the ground, FCER and the governance projects (ILO, MISONGA) were working on “social capital” issues, building solidarity among local stakeholders (train users, mayors of villages along the line, the train workers) and reinforcing civil society organizations to defend the interests of local users.

Rehabilitation work involved heavy construction but also mobilized hundreds of farmers along the line to implement innovative bio-engineering solutions; they planted thousands of fruit trees and millions of anti-erosive grasses on fragile embankments. Local people began to “take ownership” of the railway. When political terrorists threatened to blow up the rail infrastructures during the crisis of 2002, local civil society organizations assigned volunteer guards to sleep in the tunnels for months on end, protecting them from sabotage.

Even with only half the intended rehabilitation program completed, the trains began running on schedule and the FCE was able to double the number of trains per week. The local economy responded with marked increases in the commercialization of bananas, coffee, and other sustainably produced crops. Schools and health clinics reopened. In accord with the agreements signed between USAID and the GoM, a privatization tender was launched and two credible international consortia responded.

Then, disaster struck. The President decided, without explanation, that he did not want to end parastatal management of the line after all. No amount of advocacy from the well organized communities along the line, the railway workers, and international donors could budge him from his position. In the past, when politicians knew they needed critical votes from along the line, political pressure had sometimes helped. Now, with public accountability replaced by obsequious appointed officials and rigged local elections, government was impervious to the people's voice.

The privatization tender was scrapped; donors pulled back (the World Bank alone withdrew \$7 million of promised funds) and the rehabilitation program ground to a halt. The fundamental issues of parastatal management have not been resolved. The FCE is back to the situation where there is a serious risk of accident and service is far too unreliable to attract the businesses (eco-tourism and food processing) that had previously indicated an interest in investing in the region. As farmers lose hope in the future of commercial agriculture, *tavy* has resumed in the adjacent forest corridor.

STEPPING BACK: ASSESSING RESULTS IN TERMS OF THE OVERALL IMPACT ON MADAGASCAR'S NATURAL ENVIRONMENT

THE BOTTOM LINE

There has been notable progress in all areas where USAID has worked: at the policy and institutional level, in park management and the creation of protected areas, in reducing pressures on forest resources in particular locales. These successes have been much celebrated and have kept hope alive that indeed progress is possible. Yet, as we step back after 25 years, honesty compels us to conclude that the environmental crisis in Madagascar is far more acute now than it was at the outset of EP I:

- Forest area has diminished significantly (10,650,142 ha of forest in 1990 vs. 9,413,218 ha in 2005: more than a million ha was lost in 15 years).¹²³
- Forests are still disappearing at an alarming rate (0.53% or about 100-150,000 ha lost per year): deforestation has slowed, but come nowhere close to stopping or reversing forest conversion.¹²⁴
- 80% of Madagascar's forests are now located within 1 km of a non-forest edge (Harper 2007), which means that a determined or desperate farmer with a machete and a box of matches can walk to them within an hour.
- More than 3,300 families live and farm inside the Ranomafana-Andringitra corridor (Raharinomenjanahary, et al. 2008, 20-21) Eight million more

In 1990 Madagascar had about 11 million ha of forest and 11 million people.

Today the country has about 9 million ha of forest and 20 million people.

¹²³ *Evolution de la couverture de forêts naturelles à Madagascar (2009)*

¹²⁴ Up until 2001, the donors described the objective of NEAP as reversing Madagascar's deforestation. In that year, a multi-donor evaluation of the environmental program deemed that to be overambitious and impossible to achieve. The consequence was that the objective was reformulated as slowing the rate of degradation.

people are exerting pressure on natural resources than when NEAP was announced. Family planning interventions have had some promising results on contraceptive prevalence rates, but the overall population growth rate still hovers near 3%. As welcome as lowered population growth rates in the future may be, they do not change the fact that Madagascar's population will double again in the next 20 years.

- The unacceptable economic situation has not changed; to the extent that the economy has enjoyed limited growth in some areas, this has not translated into economic improvements in the rural areas that put the greatest pressure on forests and which remain desperately poor by any standards.

Bluntly put: in 1990 Madagascar had about 11 million ha of forest and 11 m people. Today the country has about 9 million ha of forest and 20 million people.

WITH SO MANY POSITIVE RESULTS, WHY HAVEN'T WE SAVED THE FORESTS?

The NEAP vision in Madagascar was robust at the outset and has remained fundamentally relevant even as new information has refined our understanding of the problem. While one can quibble over specific interventions, criticize inappropriate administrative imperatives, and lament funding limits, USAID's approach has been admirably strategic and (at least on the environment front) sustained.

Scaling up: the logic

The program also had a persistent logic. It was founded on a solid base of field activities that reached into the lives of people living at the farthest frontier and having the greatest immediate impact on the forests. From early on, however, it was recognized that while such localized project interventions were desirable and necessary, their results would be limited in scope and time. It was necessary to scale out in space and to ensure sustainability over time.

This was to occur through two mechanisms. At the local/regional level, investments in "structural" factors (e.g. transport as needed to help farmers reorient from a purely subsistence livelihood to a more diversified economic strategy) were intended to exert a systemic influence on the local economy and have an impact on vastly more people than could be reached by direct household level interventions. At the national level, USAID would help the government create a favorable policy framework that would also positively influence the behavior of massive numbers of people. Together (and with the complementary interventions of other donors) this would extend the reach of USAID's intervention over time and space.

USAID's projects were at their strongest when they promoted active dialogue (and therefore synergies) between the field and policy levels so that policy interventions were ground-truthed with local realities and approaches were coherent and mutually reinforcing. And this did happen, if sometimes imperfectly. As such, both the strategy and its implementation were fundamentally sound; they probably deserved to have better, more lasting results than they did. Once again, we are brought back to the context in which these projects have operated. While it would be wrong to suggest that the fault has been entirely exogenous to the projects, failure to acknowledge the larger context is equally dangerous because it implies that correcting project flaws would render their results more profound and durable, which may not be the case.

Scaling down: the reality

Going back to a model in which specific ground level interventions are acknowledged to generate results that are limited in scale and must thus be accompanied by structural changes (whether



Without adequate rural infrastructures, it is almost impossible to transform rural economies away from subsistence agriculture yet this is critical to reducing pressures on highly threatened forests. (Photo credit: IRG)

infrastructure or policy) that will have a broader and more lasting impact, we are obliged to confront the evidence from the last 25 years: in Madagascar policies and infrastructures are as ephemeral – or more so – than project interventions. When governments sweep in and out of power on decennial breezes and people and policies sweep in and out with them, when the whole structure from top to bottom is shaken with every change in constitution, when the government is incapable of maintaining or restoring infrastructures and every cyclone wipes out dams and roads on which farmers depend for their livelihoods (with no systematic provision for rebuilding), it is almost impossible to build a program that will have sustainable results at the scale needed to protect Madagascar's forests. In the end, battered by these realities, USAID projects too often settled for scaling down, celebrating the micro-victories because that was all they had.

The economy

It is not news to say that Madagascar's environment problem is, fundamentally, an economic development problem. The NEAP stated it as far back as 1988:

The different aspects of environmental degradation appear to be symptoms of a more serious problem affecting Malagasy society. A variety of economic and historical factors are involved – extensive changes within government, pricing mechanisms that provide little incentive for producers, and excessive state control... (NEAP 29).

The World Bank's 1996 Staff Appraisal Report (EP II) reiterated: "At the root of Madagascar's environmental problem is the economy's failure to take off." It then continued:

The environmental program ... will endow the country with the capacity to manage its environmental resources more effectively and reduce the rate at which its natural resources are being depleted. It will not be able to stop environmental degradation altogether or to reverse it. This can only be achieved through an improvement in Madagascar's development performance. As in many other developing countries, the ultimate outcome for the environment will depend on the economy's ability to intensify the use of land and develop non-agricultural sources of income. (The World Bank 2007, 11)

Yet, as we have seen throughout this paper, governance issues continue, inexorably, to undermine economic progress. In the early years of NEAP implementation around Africa, institutional capacity was consistently identified as the most critical factor in project success (Talbot 1993, 10). This, correctly, drove a huge investment of resources into institutional capacity building in Madagascar. It is now clear that while this was undoubtedly necessary, it was also insufficient: in Madagascar increased capacity has spectacularly failed to translate into more benign or effective governance. Environmental

Environmental preservation is hostage to economic development. Economic development is hostage to bad governance. We knew this 25 years ago when NEAP was launched. We have lost significant ground in the interim and time is running out.

preservation is hostage to economic development. Economic development is hostage to bad governance. We knew this 25 years ago when the NEAP was first promulgated (though with perhaps less certitude and sophistication than we know it now). We have lost significant ground in the interim and time is running out.

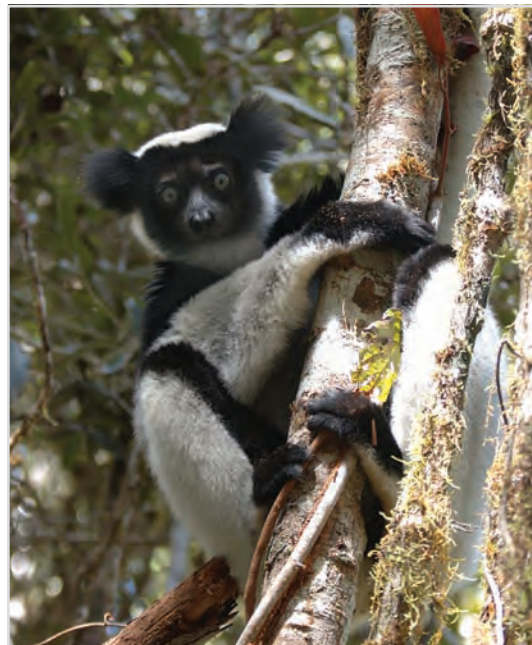
IS MADAGASCAR DIFFERENT?

As we assess USAID's environment program results in Madagascar and consider implications both for future programs and for transferring lessons learned to other countries, it may be useful to reflect on the extent to which conditions in Madagascar are special, in comparison with other countries under severe environmental threat.

How is Madagascar different and what does that imply for future interventions?

Time. The first factor that makes Madagascar different is time. For many of Madagascar's forests and species, the tipping point (used here to describe the point where natural resources have become too scarce to support the species that depend on them and the resource base can no longer be easily resurrected) is perilously close. Each species has its own tipping point and some, we know, are tragically already living on the wrong side of the balance. Time is truly running out. Slowing the rate of degradation is not enough because, inexorably, you still arrive at the tipping point. The issue for Madagascar more urgently than many other countries is not just slowing the rate, but stopping it before we reach that point of no return.

The difference in value accorded nature (international concern vs. domestic/local interest). The second characteristic that must be highlighted is the divergence in the value the international community places on Madagascar's natural resources compared to that accorded by the Malagasy (whether the State or local communities). This difference is probably greater for Madagascar than for any other country in the world though specific sites elsewhere may have similar challenges.¹²⁵ The international community places an extremely high value on Madagascar's biodiversity because it is unique; it is found nowhere else on earth. If we fail to protect the resources in Madagascar, we can't count on a neighboring country to perhaps do better. Furthermore, to meet the biodiversity



The Indri (or *babakoto*) lemur, with a remaining population of fewer than 10,000 and a rapidly diminishing habitat, may already be on the wrong side of its ecological tipping point. How much, collectively, do we care? (Photo credit: Julie Larsen Maher © Wildlife Conservation Society)

¹²⁵ In 1996, the World Bank wrote, "The discrepancy in Madagascar between threats to globally-significant biodiversity and government capacity to address them is unparalleled." (World Bank 1996, 15) After 15 years of capacity building, we might now ask an even more profound question, "Even if endowed with the capacity to act, do the government and people wish to do so...?"

concerns of the international community, Madagascar needs to maintain the entire spectrum of species in all ecological niches. It all matters. This challenge is immensely greater than just ensuring the “greening” of a country or space, or maintaining a few discrete areas as national parks.

On the other side of the equation, the Malagasy perspective on the natural forest *per se* can best be characterized as indifferent. For most people (and certainly those that pose the greatest threat to the forest) nature is appreciated if and when it can provide direct and palpable benefits, not as a more intrinsic or general good. People need firewood, not trees. They may need green mountain ridges to encourage water infiltration that benefits rice fields, but it makes not the least bit of difference whether that green band is composed of exotic or endemic species or whether it provides a favorable ecosystem for lemurs or birds. People may well value particular elements within the natural forest for medicine, fuel, or food, but pragmatic and urgent subsistence needs for those goods do not necessarily translate into a determination to save the larger ecosystem so as to maintain access to those goods in the future.

This unbalanced equation between intense international concern and local indifference is driving the push toward conservation payments.

Vulnerability to natural disaster. A third characteristic, though sadly similar to some other desperately poor countries, is Madagascar’s vulnerability to cyclones and natural disasters. In many years, Madagascar is hit by two to five cyclones, enough so that people have developed an array of coping strategies (e.g., easily rebuilt houses in cyclone prone zones, avoidance of likely flood zones) to deal with these “normal” events. This has mitigated, though certainly not fully avoided, the human suffering. Infrastructure, however, continues to be enormously vulnerable to these disasters. It is rare to enter a community where there is not some infrastructure that was destroyed by a past cyclone and never repaired. In many cases, these broken irrigation systems or road and bridge washouts have severely depressed the economic potential of the area.

This situation is likely to get dramatically worse over the next generation. Climate change scientists think that cyclones will probably become more intense and therefore more destructive. In the absence of enforced building and zoning codes, many of the millions of people who will be added to Madagascar’s population over the next decades are likely to live in unsuitable areas, be they flood plains or unstable slopes. This pattern is already terrifyingly visible in Antananarivo and other urban areas.

When government demonstrates little responsiveness to local people’s concerns and there is no functional taxation system to return money to local areas, the pattern of abandoned infrastructure is unlikely to change. The “after the fact” ad hoc emergency responses of donors¹²⁶ are insufficient, slow, and haphazard. This issue must be addressed in future environmental and economic development strategies. It is as important to implement sustainable financing mechanisms to deal with inevitable infrastructure damage from natural disasters as it is to ensure the funds needed to manage the national parks. In the absence of such mechanisms, efforts to help rural communities move away from subsistence agriculture will be futile and natural resources will continue to be the insurance of last resort.

126 USAID invests significant food aid resources in preparedness, but they are insufficient to cover all vulnerable communities given how widespread disasters are and neither do they systematically address the more fundamental infrastructure issues. A possible solution would be to establish a system whereby a portion of all donor funds for infrastructure projects are set aside in an endowed fund to repair those infrastructures after natural disasters.

EXTERNALITIES

Before looking ahead to the future, let us briefly touch on a few of the many exogenous factors that will impinge on Madagascar's environment and possible U.S. responses. This section highlights three that are particularly relevant: climate change, increasing Chinese (and other non-Western investments), and U.S. politics and aid policies.

Climate Change

Concern about the effects of climate change on Madagascar's biodiversity and livelihoods motivated the organization of the 2008 Climate Change workshop in Antananarivo. USAID and its partners (among them CI and WWF) played a key role in helping the GoM to organize the workshop with MacArthur Foundation support. The U.S. Ambassador was a keynote speaker. More than 130 experts participated, some bringing experiences from Madagascar, while others used sophisticated models to predict the likely effects of climate change on different species and eco-systems.



The arrival of multinational mining companies (here a photo of Rio Tinto's operations near Fort Dauphin) adds new challenges to environmental conservation in Madagascar. (Photo credit: Qit Madagascar Minerals)

While this is not the place to review the extensive and sobering results of the workshop,¹²⁷ the participants concluded that virtually all environmental issues now on the table will be exacerbated by climate change.¹²⁸ The preservation of current forest corridors (as well as the protection of riverine forests that are important avenues of connectivity and were identified as needing additional research) becomes even more critical as threatened species will have to respond to climate variation as well as disappearing habitats. Humans will become more vulnerable to intense weather patterns and the incidence of cyclones is likely to increase by as much as 46% (Carret et al. 2010). There will be considerable variation in weather changes across the country (some areas of the country will become drier and hotter and some areas wetter), making it hard to devise general strategies. Upland rain-fed agricultural systems will be particularly vulnerable. Coastal resources (including mangroves, which are important shrimp reproduction zones) are likely to suffer significant damage,¹²⁹ with increased flooding in low-lying areas. Other second-order economic impacts may be felt in sectors like tourism.

Improvements in climate monitoring data were identified as a priority need (even basic rainfall statistics are lacking for much of Madagascar), especially in conservation priority areas. An acute paucity of information was noted for marine and coastal ecosystems, including especially mangroves and reefs.

¹²⁷ See the Workshop Report: Assessing the Impacts of Climate Change on Madagascar's Biodiversity and Livelihoods.

¹²⁸ Madagascar contributes little to climate change, producing only very modest gas emissions, estimated at 0.2T per capita per year, or about 1/20th as high as South Africa and 1/40th of US rates (Carret et al. 2010).

¹²⁹ Madagascar's marine and coastal areas are estimated to contribute 50% of national economic wealth; shrimp represent 71% of the total value of fisheries exports (USAID/Biodiversity Analysis and Technical Support 2008, 36).

The workshop issued a plea that greater attention be paid to protecting marine resources and proposed that Marine Protected Areas extending from the shore to the continental shelf and deep sea habitats be established.

The conference positively noted Madagascar's role in implementing carbon sequestration pilot projects (especially those focused on avoiding deforestation) and helping to develop practical methodologies and approaches to making REDD work.

Increasing Chinese (and other non-Western Investment) in Madagascar

When the NEAP was being drafted, Madagascar was coming out of a period of political and economic isolationism where the country was largely sealed off from at least western international forces. (Isolationism is a recurrent pattern in Malagasy politics, used as an international and domestic policy tool since the 19th century.) The strategy faltered when pragmatic economic considerations trumped political idealism. Madagascar signed a structural adjustment agreement with the IMF in 1984 and began soliciting donor funds. Shortly after, the first aid workers arrived to find acute shortages of soap and toilet paper, among other problems of the day.

If Madagascar was at a different place at the dawn of the NEAP, so was Africa and the world. NEAP evolved in a global context still dominated by the posturing that characterized the end of the Cold War and (in Africa) francophone–anglophone rivalries. A prominent political observer in 1992 wrote, “It is hard to make a case that Africa matters very much to China” (Segal 1992, 115). To all but a die-hard few, francophone–anglophone tensions seem rather trivial at this point. And Africa now matters to China a great deal.

Given the history of western interventions in Africa over the past centuries, it feels hypocritically ethnocentric to comment on the “Chinese invasion”¹³⁰ or the arrival of numerous other “non-traditional” (e.g. Saudi Arabia, South Korea) prospecting countries in Madagascar. The increasing importance of these countries and their industries (which operate outside the constraints of most western business) does, however, raise two cautionary notes relevant to the issues discussed in this paper:

The first issue concerns environmentally responsible extraction and investment. The Chinese are interested in Madagascar's oil,¹³¹ minerals, and metals (e.g., bauxite), most of which are extracted from environmentally sensitive areas. The objective is similar to those of western firms, whether Total or Rio Tinto, seeking the same products. The differences play out in the amount of transparency surrounding the deals, the environmental standards to which the operations must comply, and the level of accountability to which the companies (or State firms) can be held.

Many of these operations are not being held to the standards of Madagascar's Environmental Impact laws. Chinese disregard for environmental concerns in many parts of its own country are well documented; it is unlikely that China¹³² would voluntarily impose higher standards on its operations in Madagascar. Furthermore, the very existence of such major international contracts is often hidden

130 Neither is this section intended to imply that there have not been benefits from the Chinese-Malagasy relationship. Specifically, the Chinese have completed several important infrastructure projects.

131 In 2007 the Chinese won 30 and 35-year production rights to two major oil blocks, anticipated to produce more than 5 billion barrels (Reuters).

132 It is interesting that the biggest, formal sector Chinese (sometimes national) companies are feeling some international pressure on these points. Some large Chinese companies have participated in World Bank discussions on responsible mining, for example. More worrisome are the small “rogue” industries that play by few international rules. See H. French (2010) for a discussion of how these companies have operated in the Congo.

from the public. Even the deal struck by Daewoo-South Korea to farm 1.3 million ha of farmland with maize and palm trees (with the production to be exported to Korea) was hidden from the Malagasy people and some sectors of government until it was finally uncovered by the Financial Times. Soon after, it became a cause célèbre, contributing to President Ravalomanana's overthrow.

When deals are secretly cut with high level government officials, it is difficult for concerned environmentalists to leverage opposition. (The Korean land deal was somewhat different because it alienated enormous tracts of land, which has always been a sore point in Madagascar: Spatially limited environmental damage, or deals that affect State forests rather than privately owned farm land, are likely to engender a lesser reaction from the populace.) Western companies, while far from perfect in their environmental mitigation strategies, are at least subject to public pressure. Embassies, conservation organizations, the popular press, and shareholders can all make life miserable for large western companies who do environmental damage in charismatic poor countries such as Madagascar. The result is evident: Rio Tinto has more than 70 people working specifically on socio-economic and environmental mitigation efforts around its ilmenite industry in Tolagnara¹³³ and Sherritt's Ambatovy vision statement commits to delivering "outstanding environmental and social results."

The second concern is the effect of these operations on governance. The "resource curse," when countries gain a significant portion of their revenues from natural resources, has been shown to consistently undermine good governance in poor countries. Specifically, when government revenues come primarily from natural resources, authorities are not dependent on taxes or other locally collected funds that would force a measure of accountability. Then, when the funds are received, if they are not invested in ways that will have long-term public benefits, the country remains poor, while having lost its resources assets. Future generations are condemned to perpetual poverty.

In a country like Madagascar where social accountability is extremely low and there is a culture of "political turn-taking" the risks of this happening are exceedingly high.¹³⁴ The costs of such operations are even higher when the extraction of the minerals (or metals or oil) not only uses up the resource in question, but also destroys forests or other natural treasures (e.g. reefs) whose ancillary destruction will have far-reaching consequences on the economy. In Madagascar, we could imagine dire consequences on watersheds, shrimp production, etc. And finally, the riches generated by these contracts cannot help but attract unscrupulous politicians into the fray, increasing the likelihood of extra-legal transfers of power, to which Madagascar has already proven itself sadly vulnerable.

The Chinese policy of non-interference. All of these issues are exacerbated by the Chinese principle of respecting State sovereignty and non-interference, as well as their general antipathy to transparency and the promotion of good governance. Mutually beneficial (to the individuals, not necessarily the country) relationships are built with African leaders based in part on a shared disdain for such western concepts. As summed up by the Sierra Leonean Ambassador to China (and proudly reported in an official Chinese publication):

"The Chinese just come and do it. They don't hold meetings about environmental impact assessments, human rights, bad governance and good governance. I'm not saying it's right, just that Chinese investment is succeeding because they don't set high benchmarks." (ChinAfrica February 2006, quoted in Taylor (2007, 16).

¹³³ Rio Tinto has also named an International Advisory Panel, composed of two international scientists and one highly renowned Malagasy conservationist to help them comply with sound environmental practices.

¹³⁴ The country is currently experiencing a classic example. The Rajoelina camp gained power in large part by criticizing Ravalomanana abuses (e.g. land sales to the Koreans and contracts to sell water to the Saudis, both of which were cancelled with considerable fanfare when Rajoelina took office). But, within months of taking office, the Rajoelina administration was complicit with massive export operations for precious rosewood, destined for China.

As noted above, this makes it all the harder for western countries to take the high road and insist on “good-enough” governance. Threats (to withhold donor funds, for example) only work when the beneficiary needs what you have to offer more than you value what they have. When someone else is willing to replace the lost funding, without requiring comparable compliance, the ability to leverage better governance or any other behavior is much reduced.

The primary challenge for the last generation of environmentalists, already difficult enough, was *tavy* pressure by hundreds of thousands of small farmers. Remoteness, dispersal, and poverty made this behavior difficult to influence. For the next generation, the number of small farmer *tavy*ists has grown to exceed a million. In addition, the environmental defense team will have to confront pressure from enormous multinational companies and foreign powers seeking to extract valuable mineral and fossil energy assets. The power, wealth, and (in some cases) unscrupulousness of the latter are likely to prove formidable.¹³⁵

U.S. politics and aid policies

While this retrospective has focused primarily on what was happening in Madagascar over the past quarter century, there have been numerous allusions to the larger USAID context and the myriad ways in which it supported, constrained, and generally influenced the program in Madagascar. The relative abundance of development dollars during EP I quickly turned into a perpetual struggle to make ends meet, and then just to keep the Mission open. Funding ebbs and flows were due in small measure to what was happening in Madagascar at the time; the far larger influence came from U.S. foreign and international aid policies determined independently of anything happening in country. Budget trends have not generally been favorable to Africa (with the exception of just a few countries) in recent years and were it not for the biodiversity earmarks, many believe that Madagascar’s USAID Mission would already have been closed, with funding maintained for only a very few programs managed from afar.

As has been noted several times in this paper, decisions regarding USAID project funding are made based on a basket of concerns, only some of which have to do with the results obtained in the field. This has been most evident in the cases where programs and projects have been suspended in order to make a political statement, with catastrophic results on the ground.

Given the high importance this retrospective has accorded to “good-enough” governance as a prerequisite to environmental success, it would be illogical to deny the use of conditionalities as a mechanism for achieving better governance. However, pragmatism demands a close look at decisions to suspend environmental programs as a way to “send a message” to successive Malagasy governments. My reading of the evidence suggests that threats, conditionalities, and suspensions have had little impact on the political situation in Madagascar, yet they have significantly undermined project results in the field. As such, they have been costly and counterproductive.

As USAID considers its future interventions in Madagascar, it should anticipate these types of issues (even accepting that one of the few certainties in Madagascar is the unpredictability of what happens next) and think through likely responses before tying down an investment strategy. There will be stressful confrontations of pragmatism and principle, and no easy answers. But we have enough experience in Madagascar to know that the issue is likely to arise; only a very rich ostrich would go into the next phase of operations unprepared.

¹³⁵ In its recent policy document outlining future environmental challenges for Madagascar, the World Bank lists as its Third Challenge: “Controlling the environmental impacts of large, especially mining, projects.” (Carret et al. 2010).

With a relatively new administration working in the context of a severe international financial crisis it is hard to predict future funding levels, but few experts think that Madagascar is likely to benefit from a major resurgence of bilateral development assistance. This reality must inform strategic discussions so that aid funds are allocated where they have the greatest chance of making a difference. There is currently pressure to expand interventions to coastal areas, which are undoubtedly highly meritorious of international attention. But can we do it all? Will this divert funds from forest conservation and land-based biodiversity? What matters most? With needs certainly greater and resources probably smaller; how will USAID position itself for future interventions? And what would a USAID “commitment” look like in an agency that is now widely viewed as ineffectual/weak and which is under intense critiques from both the left and the right, not to mention internally. When funding vagaries make it difficult for the Agency to respect even two and three year contracts, can we at this point imagine a credible 20-year commitment?

Given these realities, there is growing momentum to repackage the issues in an entirely different way. Rather than focusing on USAID’s role in saving Madagascar’s forests, we would define the issue as a collective mission to protect earth’s biodiversity heritage that happens to reside, in large measure, in Madagascar. This approach forms the basis of Scenario 3 below.

WHAT NEXT?

It is clear that if USAID decides to continue to support the Madagascar environment program, it will be worthwhile only if:

- It can mobilize significantly greater resources for the endeavor.
- It is willing to commit to truly long-term support (long enough to offer reasonable hope that Madagascar will exit its current vicious cycle of political self-destruction) and has a clear strategy for dealing with inevitable political disruptions.
- It is allowed to move beyond the artificial distinction between environment and economic growth/development to develop a more ambitious, coherent, and comprehensive plan that allows environmental issues to be addressed in tandem with economic concerns.



Many of Madagascar’s rural people, as this family who farms next to Andringitra Park, depend on natural resources for their livelihoods. Difficult as it may be, it is imperative that future interventions do even better at incorporating local voices and social justice issues into our treatment of biodiversity issues in Madagascar. (Photo credit: Karen Freudemberger)

All actors in the next phase of environmental planning should incorporate significant changes in the international context into their analyses. If Madagascar’s environmental profile has risen over the past 25 years, so has interest in its mineral and petroleum riches. Influencing these giant national and multinational industries will require different strategies from those employed in previous environmental programs.

At the other end of the spectrum, we must better incorporate local voices and social justice approaches into our treatment of biodiversity issues in Madagascar. This is not to say that we have not listened; indeed there are many who have taken this seriously from the outset and others who

have learned to take it more seriously over the past 25 years. Regrettably, however, we collectively blew it over SAPM, which was a critical test of whether we had mastered the art of taking local concerns seriously, integrally, and from the outset. Instead, we remembered only belatedly that people matter. We will pay dearly for that error in the years ahead.

As we move ahead, we must study alternative livelihood strategies before we impose restrictions on forest use. We must understand where our interests correspond and where they don't, and we must not sweep the latter under the carpet. And finally, we must once and for all move beyond the misplaced debate that frames the issue as forests/biodiversity versus the Malagasy people and instead focus on real livelihood issues. Too often, critics sympathetic to the admittedly sad plight of rural peoples exhort the international community to leave the villagers to their time-honored *tavy* practices. In the very short term that may be a defensible position, but it seeds its own ominous failure.

Once the forest is gone, there will be no chameleons, no lemurs ... but also no *tavy*. In many communities, in well less than a generation, families will confront barren hillsides, infertile fields, and landscapes and livelihoods that bear an eerie resemblance to Haiti. It is essential that we put concern for the wellbeing of Madagascar's poor on an equal footing with our concern for the environment. But the status quo is not an acceptable solution. If we fail in our efforts to save Madagascar's forests, there will be no winners.

Three scenarios

The following section lays out three broad scenarios for how international donors in general, and USAID in particular, might intervene in Madagascar. It is purposefully provocative in an attempt to open up the debate and lay out issues that may otherwise be neglected in discussions that focus primarily on fine-tuning the current approach.

Scenario 1: Forget it; it's already too late and nothing we can realistically do will be able to save the remaining resources.

No one who has been working seriously on environmental issues in Madagascar over the past 25 years will come easily to the conclusion that it is too late and too impossible. There's not much more to say about this, a tragically defeatist conclusion that absolutely no one wants but probably more than a few (intellectually, if not in their hearts) would judge to be the most honest.

This scenario proposes that scarce resources be devoted to other countries and contexts where we have a better chance of success. The people who opt for this scenario would argue that even if we commit to substantial interventions, the ultimate results will be little different and would, at best, only insignificantly postpone the day of reckoning.

The likely result? Consequences for Madagascar's people and the Earth's precious biodiversity that are far too depressing to commit to paper.

Scenario 2: Keep on track – Do more of the same, but better. This scenario would follow the spirit of what has been done over the past 25 years, with additional fine- (and not-so-fine) tuning.¹³⁶ Partners would have to mobilize significantly more resources than what USAID has been contributing up until now. There are lessons of the last 15 years that can certainly improve future programs.

¹³⁶ USAID/Biodiversity Analysis and Technical Support (2008), pp. 122-124, has a summary of priority goals and recommended entry points for project interventions that could usefully build on USAID's investments to date.

At a minimum, in order to have any significant impact, USAID (and its international partners) would have to commit more funds than previously and for a period at least as long. Such an intervention would work best if it had a long time frame of guaranteed funding (a minimum of 20 years) and implementer continuity; results should be assured by periodic re-evaluation and fine-tuning, not stopping and starting projects every few years.

Since the funds available would almost certainly be insufficient to “do it all,” it would be essential to use the best information currently available to reprioritize and select the area(s) where we would have the best chance to forestall arrival at a tipping point. While it is true that the more funds that are available, the more areas that could be addressed, spreading funds too thinly would have no impact at all. Wherever the intervention takes place, it would have to seriously address the economic development side of the equation (including infrastructure), and work at least locally on a consistent program of nurturing civil society.

Both this strategy and the next should make a concerted effort to attract talented Malagasy back to the country. There are Malagasy working on environmental issues (or unemployed) all around the world. The world needs them back in Madagascar. Giving these talented professionals the “cover” they need to work effectively would be a critical contribution to Madagascar’s development.

The projects would, at a minimum, have to do serious damage control, designing projects to make them as invulnerable as possible to government derailment. Unless there were to be strong evidence of a genuine government commitment to the environmental program, it would probably not make sense to invest significant further resources in reforming the public sector.

The likely result? It’s hard to say, of course, but probably similar to what has happened to date. Localized impact in the immediate project zone could be quite positive, but would depend on how the project is implemented and the extent to which it succeeds in transforming at least the local economy. We know, however, that the success of local projects cannot be separated from national and international economies. This leaves results always vulnerable to larger governance and economic development issues. Since USAID would only be able to “adopt” a relatively small part of the environmental challenge, overall success would depend on the extent to which other donors pick up the rest of the pieces and then coordinate to create programmatic and geographical synergies. Forest loss would likely continue in areas where there is not a significant and effective donor presence.

Scenario 3: The ends justify the means – Break all the rules and GO FOR IT. This scenario would be based on the conviction that Madagascar’s biodiversity is so important to the world at large that we will collectively do everything that is needed to protect it. This would require breaking many rules, or at least going against the “norms” that have governed development projects in recent years.

This approach would require a common strategic vision (let’s not call it NEAP but, say, an International Plan to Protect Madagascar’s Biodiversity) among the major international environmental and development actors. It would studiously avoid assuming that this is Madagascar’s vision and would be designed to work irrespective of whether Malagasy love their forests or care about biodiversity.

Designing this scenario would require a multi-disciplinary summit of thoughtful Malagasy and international thinkers to come up with a plan that has the best chance of success. There must be serious attention to ensuring that people from all sectors of Malagasy society are included in discussions about how to implement the approach. These consultations must be serious, deep, and extensive.

This scenario would probably involve massive conservation payments¹³⁷ that would last long into the future. Funds would be spent on cash payments to individuals or local communities that protect forest resources, on infrastructure investments¹³⁸ as needed to help transform the local economy, or some combination of both. The payments would need to be sufficient to cover most, if not all, of Madagascar's remaining forests. Economic improvement at all levels of the economy, and reaching to the forest fringes, would be key. It would also be necessary to find a formula giving government enough of a stake so that they would not be tempted to undermine the process.

Implementation could be spear-headed by a consortium of the non-governmental conservation and development organizations or by a multi-lateral agency. Continuity would be of the essence. While USAID's own resources are likely to be miniscule compared to the total size of this international campaign, it could use its respected position to help conceptualize the new approach and identify a role that would maintain its presence (and memory) at the table.

"Breaking the rules" in this case means going against current development notions that donors/projects should be working themselves out of a job and "handing over the stick." To the contrary, this strategy would imply doing more than we have in the past and for much longer.

We would start with an implicit assumption that national governance/administrative systems may not work. Therefore, alternative systems (e.g. payment management, monitoring of forest use) would be established wherever necessary for the success of the program.¹³⁹ Care should be taken to do this in a way that wouldn't crowd out positive government initiatives, but also doesn't shy away from making necessary things happen. The donors or their designated partners might have to be involved in all aspects of the program to ensure that it works according to plan: administering payments, carrying out local development interventions at the landscape level, ensuring that the necessary infrastructure and policies are implemented to move forward. We could not afford to lose sight of the primary goal (ensuring protection of the forest). Other objectives, such as empowering local institutions, would become clearly secondary.

National sovereignty? This is a serious concern. If this strategy were to be implemented without economic benefits to the people and be administered alongside a visibly rapacious and self-serving government, there would inevitably be further revolts. The forests, having acquired greater political and economic value, would also have greater value as symbols of protest and would massively burn. If, however, the new strategy were to be implemented in conjunction with generalized improvements in economic opportunity at all levels of the economy, and with an administration perceived to nominally operate in the interest of the country (or more subtle when it doesn't do so), the populace would be more likely to tolerate the infringements on national sovereignty implied when international interests prevail over perceived national concerns.

Long-term commitment to this process would be absolutely critical for success. Fundamentally, the world at large would need to pay to protect Madagascar's environment until such time as Malagasy interests are roughly equivalent to outsider interests in environmental protection. At such time,

137 REDD payments would be largely insufficient, at least at current carbon prices. This approach would more likely require some sort of international "tax" explicitly devoted to biodiversity preservation.

138 Infrastructure here refers to both the physical (roads, irrigation) and the social (education, agricultural extension). Consideration should be given to engaging the Chinese as a partner since they have proven themselves generally more competent than other donors at generating infrastructure results at the necessary scale and speed. Remember, we expect to break some rules in this scenario. In this case there would likely be a quid pro quo to meet Chinese interests; the environmental community might have to accept some trade-offs in order to achieve the overall objective. The key is that these decisions would be made strategically so as to optimize the overall impact on the environment.

139 Paul Collier's *The Bottom Billion* addresses issues of working with fragile states. He notes that it is sometimes necessary to bypass weak governmental institutions in the short term, while reinforcing those institutions over the longer term.

Madagascar would also have to have a government capable of enforcing rules to prevent private/minority interests from trumping the public/national interest. It could be a very – very – long time before these two conditions occur:

This approach would require us to believe that it could work, and then to collectively commit the resources to make it work. But we would also need clear benchmarks to assess whether we were succeeding or not. We couldn't let people continue to cut the forest while being paid the king's ransom not to do so. Pretending success might fool ourselves but would not fool Mother Nature.

Regular reviews should be scheduled and followed in order to identify and correct problems, but the overall commitment could not waver unless the system proved unworkable. Participants should be prepared to stay the course and weather political crises.

The likely results? One of the rules that would be broken would be a willingness to try even if the results were uncertain. We would take the risk because we had run out of other options, we didn't think anything else would work in the time remaining, and the consequences of not trying were unacceptable.

The challenges would be significant. We could not afford to make the mistake of rolling this out too fast, before all the details were worked out and sufficient consultation had taken place as described above. On the other hand, the clock is ticking and the longer we wait before the program is implemented, the more forests will have disappeared (50,000-80,000 ha of deforestation a year, with the largest impact on the most vulnerable dry forests, seems a not unreasonable estimate of the costs of delay). And doing it badly could be more damaging to the environment than not doing it at all.

The risks of such an approach are not insignificant; this strategy could result in Madagascar holding the world hostage to environmental extortion with demands to pay ever more for the coveted resources. If we stopped paying, we could lose our entire investment in a very short period of time. Madagascar would lose too, of course, but thus far the threat of catastrophic consequences for the nation has proved largely ineffectual in bringing Malagasy leaders to reason.

CONCLUSION

Whether we conclude from this story that we have accomplished much or little is a matter of personality and perspective. Regardless, Madagascar's situation today and her prospects for the future are profoundly troubling for all who care about her people and her environment.

A Malagasy proverb reminds us:

"Tsy mahafovy vola hamidy takotra, ka manta vary."

If you won't spend money to buy a lid for your pot, the rice won't cook.

For environmentalists, the question no longer concerns our willingness to purchase a lid. Rather, what are we going to do about the pot...?

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