

**CEPF and Poverty Reduction:
A Review of the CEPF Madagascar Portfolio**

December 2006

The benefits from intact habitats and healthy ecosystems extend well beyond biodiversity. This report is part of an ongoing effort by the Critical Ecosystem Partnership Fund (CEPF) to analyze the relationship between the projects it supports and poverty reduction.

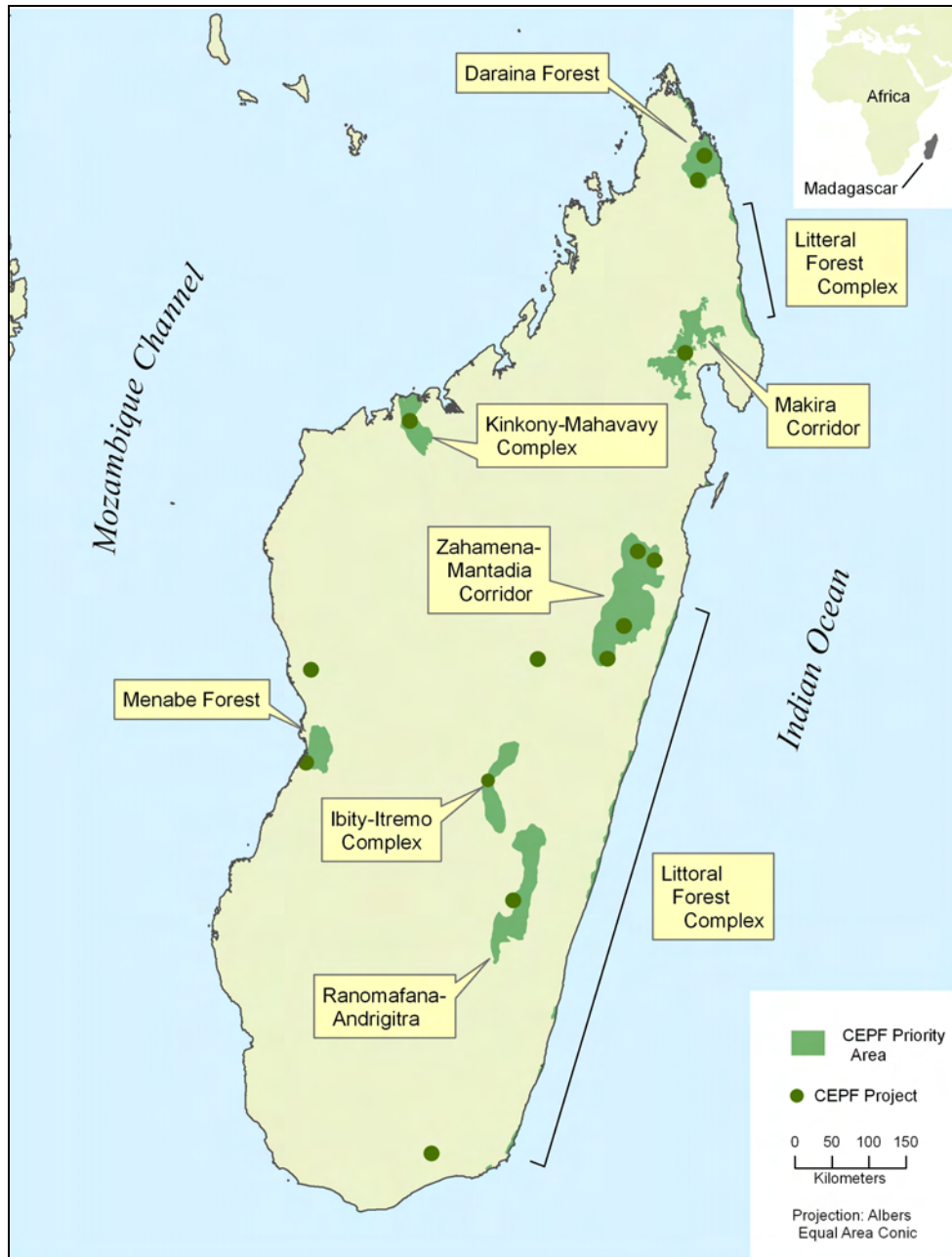
This analysis includes a socioeconomic study across the CEPF geographic funding area and a project- and portfolio-specific study performed through administering questionnaires to grantees. The socioeconomic information provides CEPF with more detailed information about the areas where it invests, and can be layered with existing biodiversity data to present a more comprehensive picture of the priority areas. Project-specific information, collected through questionnaires, provides specific data on key indicators agreed upon by the CEPF donor partners. In addition, this report incorporates narrative examples of how CEPF-supported conservation projects contribute to poverty reduction.

The project-level information is presented in a standard format agreed upon with the CEPF donor partners that is then globally aggregated as a part of the regular quarterly reporting to the partners. This approach has so far been completed in ten regions: Atlantic Forest, Cape Floristic Region, Guinean Forests of West Africa, Madagascar and Indian Ocean Islands, Philippines, Southern Mesoamerica, Succulent Karoo, Sundaland, Tropical Andes, and Tumbes-Chocó-Magdalena. The following report presents the results from a study of the Madagascar and Indian Ocean Islands Hotspot, with a specific focus on CEPF investments in Madagascar.

CEPF's strategic investments in Madagascar were built initially on initiatives developed during the 1990s under the National Environmental Action Plan and recommendations resulting from the Madagascar Conservation Priority-Setting Workshop of 1995. Initially emphasizing selected ecoregions of Madagascar, the geographic focus of the CEPF investment portfolio was refined by a 2001 workshop attended by experts on Madagascar biodiversity and preparation for the 5th IUCN World Parks Congress in Durban, South Africa. The result has been an investment portfolio that largely involves eight priority areas—the Daraina Forest, Ibity-Itemo Complex, Kinkony-Mahavavy Complex, Littoral Forest Complex, Makira Corridor, Menabe Forest, Ranomafana-Adringitra Complex, and Zahamena-Mantadia Corridor (Figure 1).

Data from various, complementary sources were used for the analyses presented in this report. For the entire region and each corridor, we compiled and examined available socioeconomic data from Madagascar. For individual projects, we collected and analyzed data from CEPF grantees. This report summarizes the data analysis at a regional scale, at a corridor scale, and for individual projects.

Figure 1. Map of Key Conservation Regions for CEPF Investments in Madagascar



Initiative-Wide (Regional) Level

Madagascar is the world's fourth largest island, covering about 587,000 square kilometers. Known widely for its incredible biodiversity, this island nation also is home to extremely high levels of poverty. Standard measures of socioeconomic conditions such as the human development index and the poverty index indicate the magnitude of poverty in this nation (Table 1). In 2001 more than 60 percent of the nation's population survived on less than \$1 per day, with more than 85 percent living on less than \$2 per day. Much of the island is rural, with portions of the central highlands and selected localities on the coast the locations of denser settlement associated with one or more communities.

Table 1. National development and poverty levels for Madagascar

	<i>Madagascar</i>
Human Development Index: value (rank ^a)	0.499 (#146)
Human Poverty Index: value (rank ^a)	35.3 (#63)
% population living on less than \$2 per day	85.1
% population living on less than \$1 per day	61.0

a : Rank among less developed countries globally

Source: United Nations Development Programme-Human Development Reports online: <http://www.undp.org/reports/>

Corridor Level

To explore the socioeconomic context of CEPF corridors in Madagascar, this study examined measures of poverty different from those studied in previous investment regions. In contrast to other countries where such analyses rely on various socioeconomic *indicators* of poverty, thanks to recent World Bank research more direct poverty measures are available. These measures can be presented in map form, presented for small geographic units known locally as *firaisana*, though the information analyzed dates to 1993, the year of the most recent population census.

A map of annual expenditures, shown in Malagasy francs, reveals the geographic breadth of poverty in Madagascar—with the lowest mapped annual expenditure of 354,000 francs per person per year, representing the poverty line for the nation, covering much of the island (Figure 2). Poverty is widespread, and characterizes all CEPF priority areas, the Kinkony-Mahavavy Complex showing slightly less tendency to host the poor. On most of the island, the proportion of population categorized as poor is 60 percent or more (Figure 3). Again, most CEPF priority areas are largely poor, with the exception of portions of Kinkony-Mahavavy Complex and Menabe Forest, while much of Daraina Forest contains extremely high levels of poverty. Mapping the number of poor persons per square kilometer indicates that most corridors do not contain dense concentrations of poor people (Figure 4), likely reflecting the generally sparse occupation characteristic of rural settlement. Again, there are exceptions to the tendency for sparse densities of poor people in the CEPF priority areas, notably the Ibity-Itremo Complex.

Figure 2. Average per capita annual expenditure in Madagascar, 1993
(Data source: Poverty Mapping Project: Small Area Estimates of Poverty and Inequality, <http://www.ciesin.columbia.edu/povmap/>)

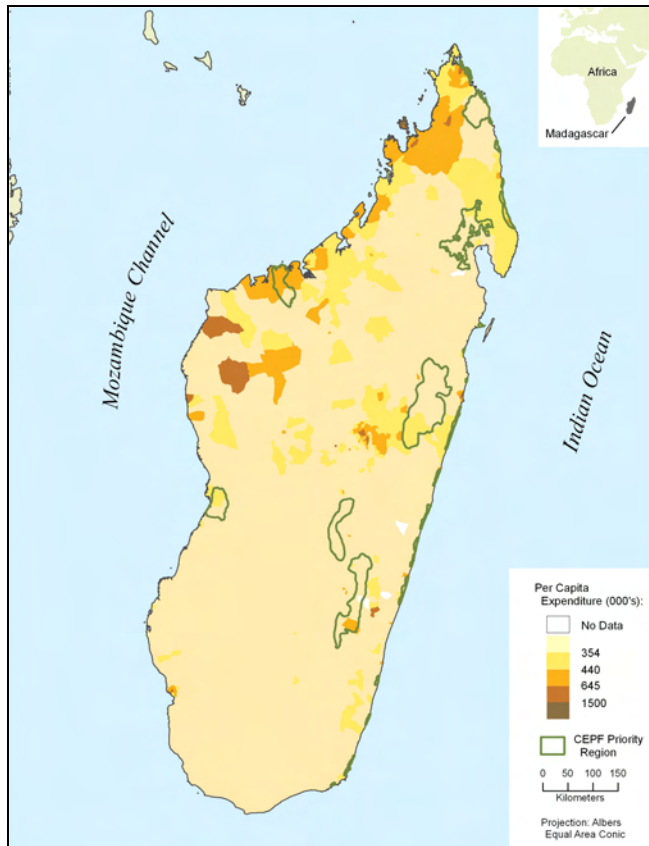


Figure 3. Proportion of population categorized as poor in Madagascar, 1993 (Data source: Poverty Mapping Project: Small Area Estimates of Poverty and Inequality, <http://www.ciesin.columbia.edu/povmap/>)

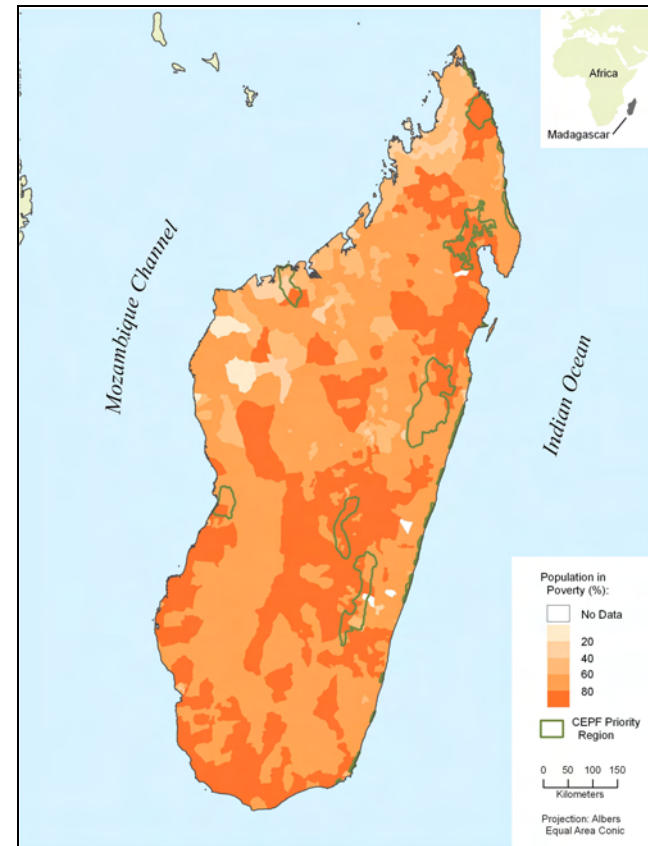
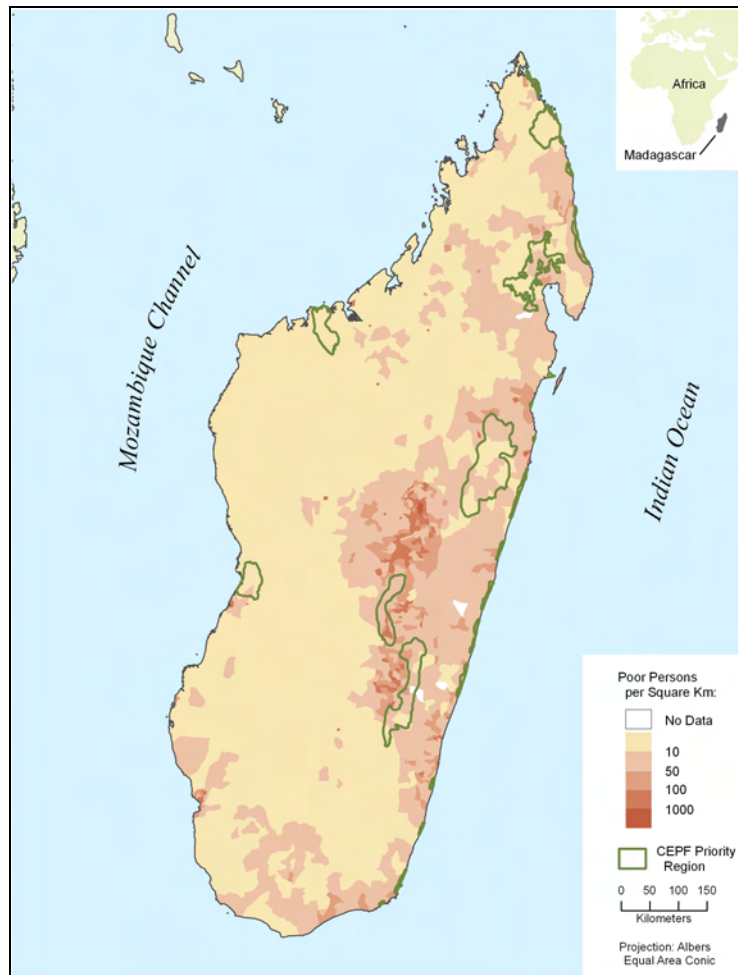


Figure 4. Poor persons per square kilometer in Madagascar, 1993 (Data source: Poverty Mapping Project: Small Area Estimates of Poverty and Inequality, <http://www.ciesin.columbia.edu/povmap/>)



To place the analysis of socioeconomic variables in national context, we compared the values of two indicators mapped for each CEPF priority area—annual expenditures and proportion of the population categorized as poor—to the national averages for each of these variables. Results show the percent of geographic units generally worse than the national averages (Table 2). In the case of average annual expenditures, in the Makira Corridor half the firaisana have values lower than the national average and half higher. For the remaining priority areas, the majority of firaisana in each show annual expenditures less than the national average. In the case of the percentage of population categorized as poor, the majority of firaisana in two priority regions (Kinkony-Mahavavy Complex and Makira Corridor) contain lower percentages of poor than the national level, and half the firaisana in another (Menabe Forest) contain lower percentages of poor than the Madagascar average. The remaining five regions comprise firaisana with higher percentages of poor than the national average. Note that using a national average serves the purpose of identifying a reference point, but it must be kept in perspective. Average per capita annual expenditure is about 345,000 Malagasy francs, less than the poverty line (of 354,000 francs per person per year), and the average number of persons categorized as poor is nearly 71 percent nationally—so firaisana containing lower percentages of poor than the national average still may contain populations living in considerable poverty.

Table 2. Selected poverty indicators for firaisana in Madagascar that occur at least partially in CEPF priority areas, compared to national averages: 1993 (Data source: Poverty Mapping Project: Small Area Estimates of Poverty and Inequality, <http://www.ciesin.columbia.edu/povmap/>)

Conservation Region	Total Geog. Units	Worse than National Average (%)	
		Avg. Annual Expenditure	Proportion of Population Poor
Daraina Forest	7	85.7	85.7
Ibity-Itemo Complex	34	100.0	100.0
Kinkony-Mahavavy Complex	5	80.0	2.0
Literal Forest Complex	61	57.4	55.7
Makira Corridor	20	50.0	40.0
Manabe Forest	6	83.3	50.0
Ranomafana-Adringita	36	91.7	77.8
Zahamena-Mantadia Corridor	36	66.7	63.9
Total	205	73.7	66.8

Individual Project Level

To examine how CEPF projects contribute to poverty reduction in Madagascar, we surveyed CEPF grantees to gather project level data. To date, 33 percent of the 39 region-specific projects in the portfolio completed questionnaires (Table 3). The data in the table below represent the information collected from the 13 projects that responded to the questionnaire.

Table 3. Summary from CEPF questionnaire responses, Madagascar

Indicator	Strategic Direction ^a						Total
	1	2	3	4	5	6	
No. Projects Reporting	5	4	3	0	0	1	13
CEPF Funding ^b	838,444	493,012	186,958	0	0	90,024	1,608,438
No. Projects Offering Training	3	4	1	0	0	1	9
Workshops Offered	48	0	0	0	0	0	48
Jobs Created	121	70	28	0	0	0	219
Persons Trained	1,395	499	15	0	0	20	1,929
Organizations Created or Strengthened	89	123	0	0	0	0	212
Network or Alliance Organizations	75	0	0	0	0	0	75

a: Strategic directions for Madagascar:

- | | |
|---|--|
| 1. Local input to protected area management | 4. Promote public awareness and advocacy |
| 2. Private sector conservation initiatives | 5. Small grants program (biodiversity action fund) |
| 3. Conservation and management training | 6. Participatory monitoring and conservation network |

b: US dollars

One key finding of this study is that CEPF grantees report both direct and indirect contributions to poverty reduction. Direct contributions include job creation and training. Indirect contributions to poverty reduction include the creation or strengthening of local organizations. Our analysis of indirect impacts on poverty almost certainly is conservative. Several indirect contributions are difficult to summarize statistically. Other indirect effects, such as indirect job creation or economic multiplier effects, were beyond the scope of this study.

We used the three-heading framework on the links between biodiversity conservation and poverty reduction, presented to the 7th Meeting of the Donor Council in November 2004, as the basis for information-gathering from individual projects. Selected results of analyzing the questionnaire data appear below under those same headings: Building Income or Assets for the Poor, Facilitating Empowerment of the Poor, and Reducing Vulnerability and/or Enhancing Poor People's Security.

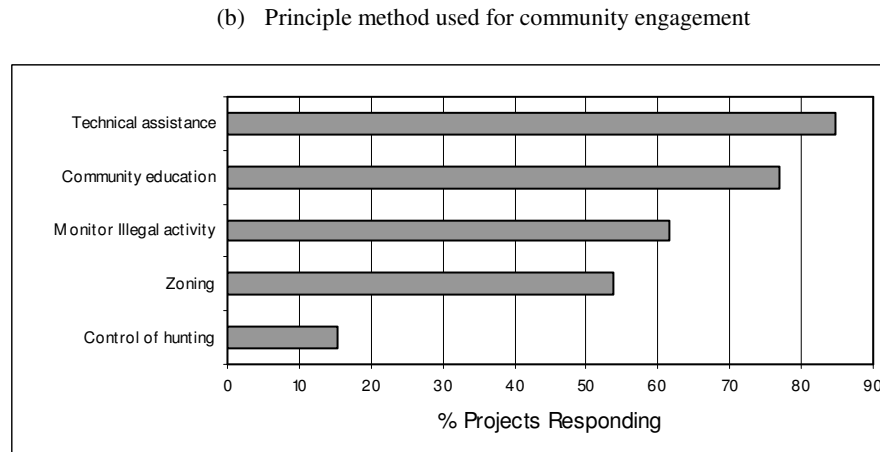
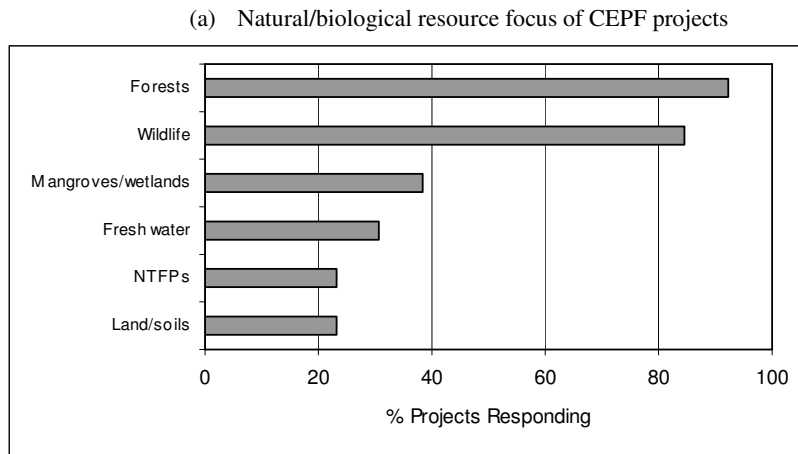
Building Income or Assets for the Poor

To obtain information from CEPF projects on building income or assets for the poor, the questionnaire focused on the following issues:

- biological and natural resource assets;
- human resource assets;
- conditions for secure management: household or community; and
- conditions for secure management: civil society.

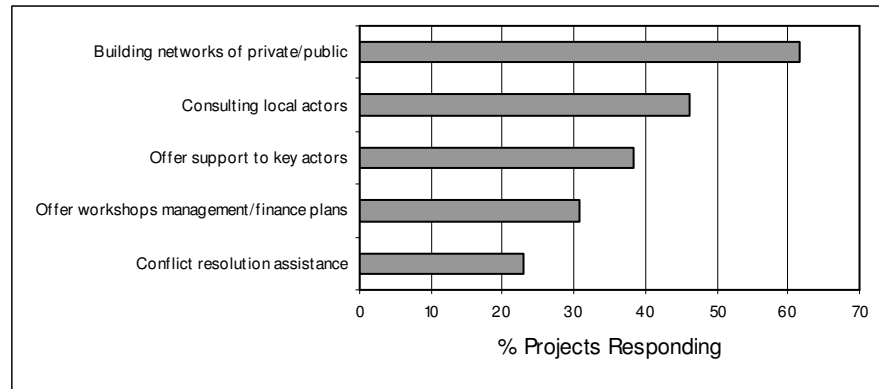
In the Madagascar portfolio, project support to improve resource management mainly focused on forests, with slightly fewer projects dealing with wildlife-related issues (Figure 5a). The emphasis on forested ecosystems is noteworthy, as forests host the greatest amount of biological diversity on Madagascar, and have been disappearing at alarming rates over the past several decades due to a range of causes. Projects also focused on other forest-related resources, including nontimber forest products (NTFPs), though with less frequency. Projects used a variety of methods to engage communities in resource management, with an emphasis on providing technical assistance, community education about the consequences of wise and unwise management, monitoring illegal activity, and zoning (Figure 5b). Management of natural and biological resources is extremely important for poor rural communities that depend on the products of healthy ecosystems for much of their food, fuel, clothing, medicine, and shelter. Particularly in the case of Madagascar, CEPF investments emphasized what remains of the forests that once covered much of the island, and on maintaining these forests through engaging local communities via technical assistance, education on the importance of conservation, etc.

Figure 5. CEPF projects and the management of natural and biological resource assets in the Madagascar Hotspot



Most grantees in this portfolio focused on improving the conservation of selected protected areas and on corridor-scale conservation linked to protected areas. Funded conservation actions broadly include capacity building, education, and training for civil society organizations on protected area and corridor-level conservation. CEPF investments included building accountable private and public institutions, employing stakeholder consultation to engage civil society on conservation matters, and helping key stakeholders understand the consequences of destroying natural resources (Figure 5c).

(c) Ways projects aid civil society or build alliances



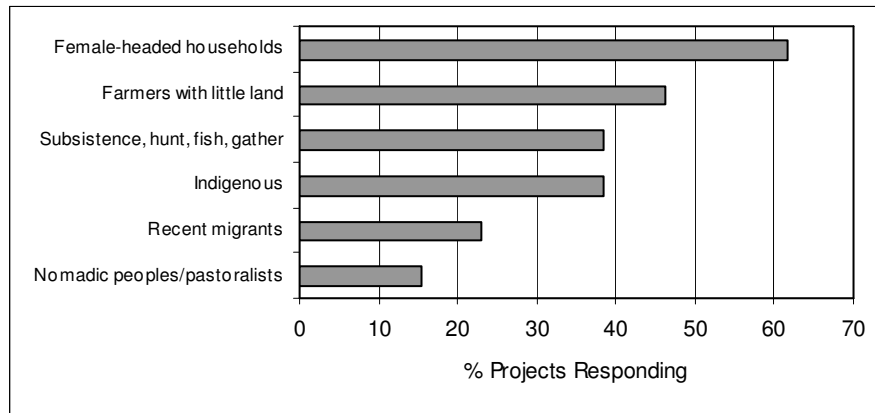
Finally, CEPF projects in the Madagascar portion of the Madagascar and Indian Ocean Islands Hotspot contributed to secure management at both the household and community levels by creating or strengthening approximately 212 local organizations and building alliances among 76 institutions. All of these efforts to create or strengthen local organizations and networks help empower local rural communities by increasing the information flowing to them and their capacity to respond to markets, government, projects, the legal system, or other sources of change. Effective local institutions have been shown to use such capabilities to help reduce poverty in the communities where they work.

One project that supported community-based natural resource management involved Association Fanamby, which worked with four communities between the Loky and Manambato rivers in northeastern Madagascar. Working with the Ministry of Environment, Water, and Forests as well as local government and community representatives, Association Fanamby helped establish a 72,000-hectare protected area. The protected area limits commercial logging, slash-and-burn cultivation, and unsustainable hunting while allowing local communities access to resources for basic needs such as construction materials and medicinal herbs. In partnership with local stakeholders, the organization created community development plans that serve as blueprints for key socioeconomic programs such as school construction, road repair, and water resources management. Association Fanamby has also trained local people in sustainable farming, agroforestry, and ecotourism as alternatives to activities with greater adverse impacts.

Facilitating Empowerment of the Poor

CEPF investments in biodiversity conservation often help empower the poor. Many CEPF investments directly support civil society efforts to help communities and local people participate in and benefit from conservation efforts. In a country such as Madagascar, where so many are of limited means, projects inevitably affect the poor. However, certain CEPF investments focus specifically on sub-groups traditionally lacking resources that conservation projects involved. More than 60 percent of the projects that responded engaged female-headed households, with nearly half of the respondents dealing with farmers with limited land (Figure 6). Other sub-groups were involved, though less frequently, in projects supported by CEPF.

Figure 6. Categories of poor families engaged by CEPF-funded projects in the Madagascar Hotspot



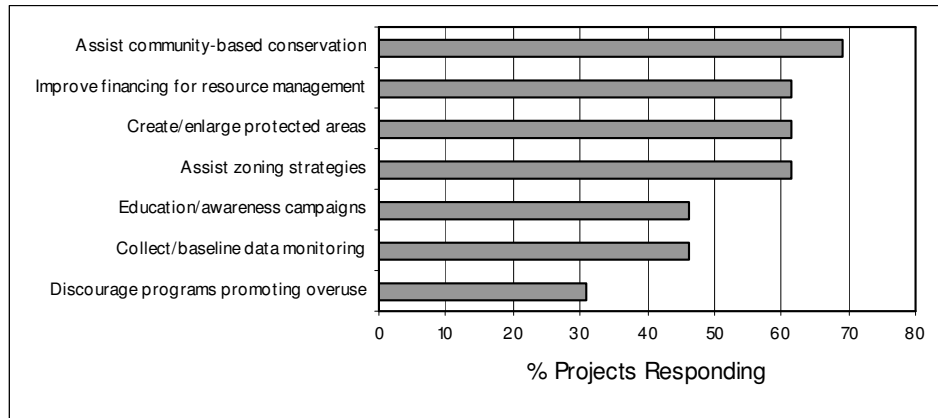
One project that helped empower the poor was a three-year program run by conservation group MATEZA around Zahamena National Park. MATEZA created environment unions guided by local citizens that oversee some 80 agricultural groups that educate local people about best farming practices. The unions include 11 women’s groups that, in turn, have established eight basic health centers from which they conduct community outreach on family planning, nutrition, and other health issues. Fifty young volunteers also took part in a pilot capacity-building program which included learning new techniques for increasing rice yields in order to reduce the need for expanding the area under cultivation.

Reducing Vulnerability and/or Enhancing Poor People’s Security

The questionnaire obtained information on reducing resource depletion, resource degradation, and the effects of shocks and disasters. More than two-thirds of respondents reported that their projects assisted in community-based conservation (Figure 7a). In addition, more than 60 percent noted that they improved financing for resource management, created or enlarged protected areas, or assisting in zoning. These and other types of projects help local people use natural resources wisely, as well as maintain natural habitat for the resources and ecosystem services it provides to local communities.

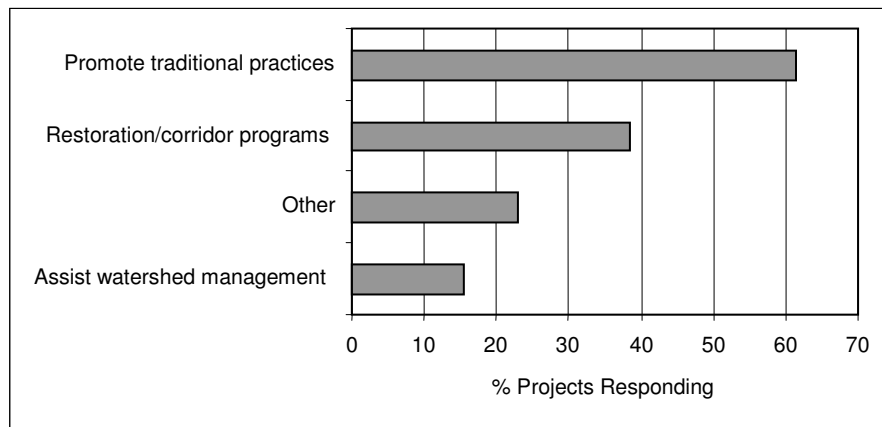
Figure 7. CEPF projects and reducing vulnerability in the Madagascar Hotspot

(a) Methods used to reduce resource depletion



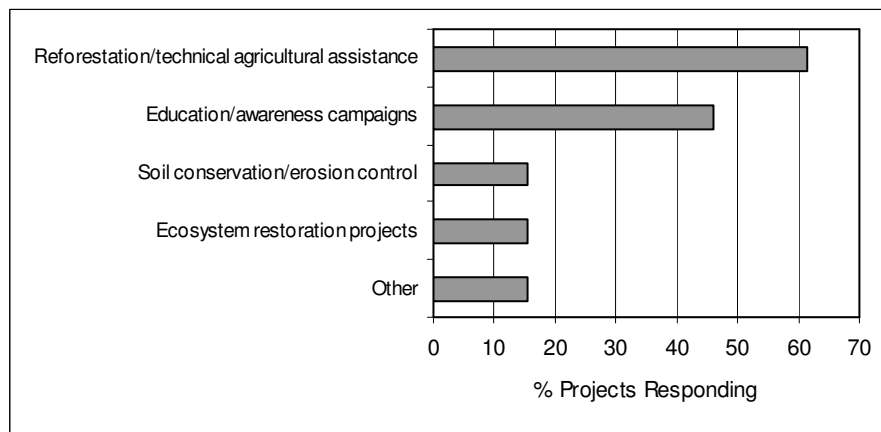
CEPF investments attempted to reduce resource degradation on Madagascar primarily by focusing on how people adapt to their local natural environmental settings. The most frequently used approach was through encouraging the adoption of traditional resource management practices (Figure 7b). Several CEPF-funded projects also used corridor management practices and ecological restoration, either to reduce resource degradation or to restore degraded resources and habitat.

(b) Methods used to reduce resource degradation



Several CEPF grantees reported that their projects reduced community vulnerability to shocks and natural disasters. Projects reduced vulnerability most frequently through technical assistance in reforestation and agricultural practices, thereby creating (or conserving) habitat that reduces the impacts of severe natural events (Figure 7c). In Madagascar, this dual focus is important both for the role of forest in supporting biological diversity and the contribution of agricultural expansion to deforestation. Projects also reported using education or awareness campaigns as a means of reducing vulnerability to shocks and disasters. Such measures are important in areas where the challenge of meeting basic human needs can lead people toward activities that increase their vulnerability to severe events—such as broad deforestation that increases susceptibility to impacts from storms or the effects of drought—and where other types of protection from shocks and disasters, and assistance following such events, are unavailable.

(c) Methods used to reduce vulnerability to shocks and natural disasters



A project implemented by the Peregrine Fund provides one example of an effort that reduced the depletion of natural resources in Madagascar. This organization worked with local communities to gain national government approval for local associations to manage two wetland sites in western Madagascar’s Manambolomaty Lakes Complex, comprising habitat that provides important fish and timber resources for the local villages. The project pioneered the use of a 1996 law that empowers local communities to create resource management associations. Having successfully completed a three-year trial period, the associations now have 10-year licenses and regulate fishing by selling permits to the approximately 400 eligible citizens. Funds from the sale of permits contribute to building health and education facilities. In addition, members of the two associations and communities have received training in tree nursery cultivation, enabling them to replace trees in degraded areas.

Conclusion

Available socioeconomic data indicate that CEPF-supported projects in the Madagascar portion of the Madagascar and Indian Ocean Islands Hotspot often occur in rural areas with high levels of poverty, even by Madagascar standards. Within these areas of poverty, CEPF grantees often focus on female-headed households, although given the broad presence of the poor, most projects likely involved households and communities with very limited means. CEPF projects directly and indirectly contribute to poverty reduction and improve human conditions in these regions while achieving their primary objective of biodiversity conservation. Direct impacts include creating jobs and providing training to local peoples. Indirect impacts include creating local organizations, strengthening civil society, and other activities that maintain and restore the ecosystems upon which many poor people in Madagascar rely.