Critical Ecosystem Partnership Fund

Seventh Meeting of the Donor Council
World Bank Headquarters, Washington, DC
1 November 2004

Statement and Measurement Indicators on CEPF and Poverty Reduction

Recommended Action Item:

The Donor Council is asked to **endorse** the "The Statement and Measurement Indicators on CEPF and Poverty Reduction"

Background:
During the Sixth CEPF Donor Council Meeting on March 31, 2004, the Council members requested that the CEPF management team, together with the CEPF Working Group, develop a standardized way to report on various components of the grant portfolio, including the link to poverty reduction. It was also requested that the team develop a common statement about CEPF and poverty reduction.

In response, the management team produced a draft statement on the link between CEPF and poverty reduction for discussion and refinement at the October 14 meeting of the CEPF Working Group. This current draft incorporates feedback from the CEPF working group and builds upon and refines the linkages presented in the November 2003 white paper "CEPF and Poverty Alleviation: An Overview."

The CEPF Working Group discussed the attached statement and developed this draft for adoption by the CEPF Donor Council

This discussion is of particular importance to the Government of Japan, which has reiterated the need to illustrate CEPF's link with poverty alleviation.

The following documents are attached:

1. Proposed Statement on CEPF and Poverty Reduction (CEPF/DC7/6A (Rev. 1))
2. CEPF and Poverty Reduction: An Overview (CEPF/DC7/6B (Rev. 1))
3. CEPF and Poverty Reduction: Proposed Tracking and Measurement Indicators (CEPF/DC7/6C (Rev. 1))

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Proposed Statement

CEPF strategically focuses on preserving the biologically richest yet most threatened places on Earth. Throughout these biodiversity hotspots, human activities are causing the world's terrestrial, freshwater and marine biodiversity to vanish. Species are becoming extinct and pristine landscapes are disappearing at unprecedented rates. Fundamental ecosystem services that are the foundation for human welfare—clean air, fresh water, food and fiber, natural medicines, pollution control and waste disposal, protection from natural disasters, and regulation of disease—are being jeopardized.

Maintaining the range of environmental services that we depend upon means maintaining intact ecological and evolutionary processes at different scales. These services also help maintain energy and infrastructure activities that underpin large-scale economic development; for example, forest cover prevents soil erosion, which leads to siltation that in turn dramatically shortens the lifespan of dams and harbors. The value of these ecological services—at all scales—is tremendous and we are only now beginning to measure how significant and varied they are and what happens when they are diminished.

The convergence of critical areas for biodiversity conservation with millions of people who are impoverished and highly dependent on healthy ecosystems for their survival is more evident in the hotspots than anywhere else on Earth. The poor within the hotspots are the people most reliant on natural resources for food, shelter, medicine, income and employment. If the rural poor draw their livelihoods from a fragile and steadily degrading ecological base, there is no potential for them to lead sustainable lives and livelihoods. Yet the poor are often trapped in a vicious downwards spiral: poor people are forced to overuse environmental resources to survive from day to day, which further depletes or degrades the resources they depend upon. This diminishes the plants and animals they need for food, degrades vital water supplies, while increasing their vulnerability to illness and natural disasters.

Actions to conserve biodiversity contribute to poverty reduction by maintaining intact habitats, ecological processes, and core ecosystem services that are the foundation for sustainable and healthy human lives. Recognizing this, Goal 7 of the Millennium Development Goals broadly focuses on environmental sustainability, including targets for biodiversity conservation through protected areas, forested land and access to clean water. Investments in protecting, maintaining and restoring the biological assets upon which the poor depend is essential for poverty reduction now and in the future.

CEPF addresses poverty reduction in many ways. It supports environmental stewardship of land and resources and sustainable livelihoods. By helping people to manage biological resources better, CEPF helps ensure that what people harvest will be sustainable. This helps break the vicious cycle. CEPF also helps reduce vulnerability to ecosystem depletion, degradation, and to disasters. It accomplishes this through its strategic assistance to nongovernmental organizations, community groups and other civil society partners to build the capacity of these groups to participate in civil society and decision-making and to promote transparency and accountability among institutions. These actions benefit biodiversity conservation but they are also the foundation for building the structure to help reduce poverty and to support sustainable lives and livelihoods.

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CEPF and Poverty Reduction
Proposed Tracking and Measurement Indicators

During the Sixth CEPF Donor Council Meeting on March 31, 2004, the Council members requested that the CEPF management team, together with the CEPF Working Group, develop a standardized way to report on various components of the grant portfolio, including the link to poverty reduction. This paper builds upon the CEPF background paper entitled "The Critical Ecosystem Partnership Fund and Poverty Reduction: An Overview." Monitoring and evaluating poverty impacts within the context of the CEPF portfolio is potentially a complex exercise, for reasons that are described below. However, despite the potential complexity of this, there are a number of ways that this reporting can be strengthened within the context of CEPF actions. These are described below.

CEPF's monitoring approach focuses on delivering impacts at three different scales: (i) initiative-wide level, (ii) ecosystem or programmatic level and (iii) the individual project level. These three levels are integrated to build linkages between projects, programs and the overall strategy. Therefore, any tracking and monitoring strategy needs to account for impacts at each of these three levels. It is important to note however that without a significant amount of costly and detailed monitoring, it is very challenging to identify the causal mechanisms that reflect changes in poverty reduction and biodiversity conservation. It is much easier to demonstrate correlational impacts. Below we propose indicators related to poverty reduction that can be built into existing CEPF monitoring without changing CEPF's core mission or substantially changing the way that CEPF engages in monitoring.

Initiative-Wide (Global) Level
CEPF has a commitment to better understand the impacts of its support for biodiversity conservation on human welfare and poverty reduction. At global scales, it will be possible for CEPF to aggregate information from projects to provide a summary of how conservation actions have also benefited poverty reduction by aggregating data from projects. In particular, these will be examined as they relate to Goal 7 on Environmental Sustainability of the Millennium Development Goals. CEPF can track actions to achieve Target 9, to Integrate the principles of sustainable development into country policies and program and reverse the loss of environmental resources. CEPF contributions to Indicator 25, Proportion of land area covered by forest and Indicator 26, The ratio of area protected to maintain biological diversity to surface area can be tracked. Data on poverty and threats to biodiversity that will be collected as part of ecosystem profiles (below) can be related to the actions to support biodiversity conservation and environmental sustainability. Better understanding of initiative-wide actions will also be consolidated from increased attention to poverty reduction as an additional component of ecosystem profiles.

Ecosystem or Programmatic Level
CEPF's strategic approach to biodiversity conservation and prosperity for people and nature alike begins with and is guided by the ecosystem profile developed for each region where we invest. Each profile provides baseline socioeconomic data, and analyzes threats to and opportunities for biodiversity conservation. Recent profiles have sought to make links between the socioeconomic context, biodiversity conservation priorities, and CEPF investment. For example, the draft profile for the Indochina region of the Indo-Burma hotspot contains an extensive collection of social and poverty data by country. The synthesized data were used as important components to determine priorities for CEPF investment. For the Indochina profile in the Indoburma hotspot, a strategic priority was to target actions "where it can have the maximum impact on the highest conservation priorities, while supporting the livelihoods of some of the poorest sections of society."

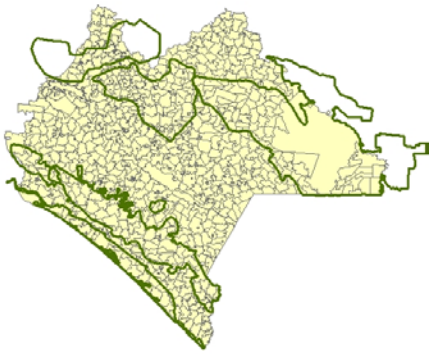
Although biodiversity conservation remains at the heart of CEPF's mission, analysis of opportunities to strengthen CEPF contributions to poverty reduction will be conducted to complement each of the existing

profiles. The aggregate of such data for a variety of indicators would allow CEPF to demonstrate with precision that it is in fact working *in the places where the most vulnerable species and highly vulnerable people are found.* Overlaying the best available data on human activities with the best information on biodiversity provides essential information for understanding the context for CEPF's activities. The best way to do this at the initiative scale if for CEPF to obtain georeferenced data at the smallest geographic units available that address a range of human dimensions: such as demographic data (populations change), poverty data, health (e.g. malaria, HIV/AIDS), educational data, economic activities, income, land use, road and market access; proximity and levels of government services.

The following elements will be included in the analysis:

a. review of country endorsed poverty reduction strategy paper (PRSP) and comparison to strategic priorities for each ecosystem profile to look for complementarities;
b. GIS-based overlays of socioeconomic data at fine scales (including poverty maps when available) with biodiversity conservation targets, to see how poverty reduction efforts can be strengthened. Overlaying biological data with socioeconomic data at fine scales (demonstrated in the map below for Chiapas, Mexico) can help define the context and links between biodiversity conservation and poverty reduction in a targeted area.

Chiapas: AGEBS and Key Biodiversity Areas



c. Analysis of common vulnerabilities for biodiversity and the poor. Potential threats to biodiversity are also potential threats to the rural poor, and efforts to address the ecological impacts can often address the social impacts as well.

d. Tracking and mapping categories of rural poor, their spatial distribution and the relationships to conservation priorities. For example, indigenous lands recognized by national governments can be compared to the locations of conservation targets. In most countries, indigenous people comprise one category of rural poor. Tracking such investments can directly support poverty reduction. Often, combinations of data on specific groups (e.g. indigenous populations) and factors that affect their vulnerability (e.g. health status or malaria) can be combined to pinpoint areas where the context of rural poverty may be worse (see map below). Understanding such links can help identify whether and how CEPF support to biodiversity conservation can best contribute to poverty reduction as an additional objective when appropriate.

This map shows indigenous lands in Bolivia that also have high malaria risk. If biodiversity priorities are equivalent for two areas, such information can help select where investments could also have a greater impact on securing health for poor indigenous communities.

The Individual Project Level

Poverty can be addressed by supporting any or all of the different assets that the poor have or use, by working with the particular groups that make up the rural poor. Within a project context, it is possible to monitor the direct assets upon which the poor depend. However, one does not want to create a high burden of reporting on grantees when CEPF is designed to be non-bureaucratic source of funding. For this reason, grantees would be asked a simple set of questions once grants were approved. Instead of assuming that the greatest impacts of CEPF actions lies with any individual grant, we will assume that it is the catalytic function of all CEPF activities taken together within an ecosystem that have the greatest impact. Adding together the different project actions and activities, and the groups of rural poor targeted and comparing that to the human context within each ecosystem will provide a better window into impacts overall.

At the project level: the following information would be collected from CEPF grantees. The emphasis would not be to collect in-depth information on monitoring of the specific actions and how well those actions are performed. Instead, the emphasis would be to look each project and ask grantees to answer a list of questions rather than to monitor actions toward poverty reduction. Since the ultimate aim is biodiversity conservation, this maintains the focus of monitoring on conservation outcomes, while tracking the number, level, and scope of CEPF projects that address poverty reduction and the ways they address it. However, it does not try and address the quality of those projects. This quick survey could be given to early grantees, in addition to new grantees, to look at the overall extent of poverty reduction efforts from several dimensions. The categories of questions would include ways to measure how the project has increased the assets of the poor, who the poor are that are reached by program activities, and how the project activities contribute to three broad areas of poverty reduction: creating opportunities, defining who the poor are, and reducing vulnerability and increasing security. :

A. Supporting the development of assets for the poor.

- Creating building and managing biological and natural resources. How does the project contribute to the assets of the poor, including better management of water, soil, plants, animals, and forests? How many households benefit from the project and what type of households?
- Building human resource assets, including support to improved education, health, skills, and nutrition. How does the project contribute to these? For how many households? What type of households?
- Does your project support the conditions for secure management, either at household or community scales? How? For how many households? What type of households?
- Does your project support conditions for secure management: civil society (e.g. capacity-building, institutions, governance).

- Conditions for secure management: civil society (e.g. civil society, community resources, institutions, governance).

B. What is the composition of different groups of poor targeted? Number of households? How do project actions directly or indirectly affect them?

- smallholder farmers with up to two hectares of crop land;
- the landless (those without any agricultural land);
- the pastoralists (those who are not settled in any specific area and derive most of their income from pastoral livestock)

C. Does your project do any of the following:

- **promoting opportunity, income or assets for poor people, how? What are the ways that CEPF supports new opportunities, income or assets for the rural poor?**
- **facilitate empowerment of the poor. CEPF can track the ways and the extent to which its actions promote empowerment,** (by supporting participation in development, creating accountable institutions where the poor have a voice, attacking corruption, supporting decentralization and community development)
- **reduce vulnerability and/or enhance poor people's security,** by stopping or reducing:
    i. resource depletion (e.g. overfishing, bushmeat hunting, etc. How is this resource important? How many households are supported and how is this action important to the lives of the rural poor?
    ii. resource degradation (soil erosion, water contamination, habitat fragmentation). How does the project contribute to reducing resource degradation? How many households are supported and how is this action important to the lives of the rural poor.
    iii. changes in fire regimes linked to introduced grasses; changes in disease vectors linked to changed land use and weather, and removal of mangroves, reduce human wildlife conflict).

References

World Bank, Poverty Reduction Group (PRMPR) and Social Development Department (SDV). 2003. A User's Guide to Poverty and Social Impact Analysis. Washington, D.C.: The International Bank for Reconstruction and Development/The World Bank

Figure 1. Project Scale Reporting on CEPF contribution to poverty reduction

CEPF Contribution To Poverty Reduction			
	Area # of HA	Human Welfare (# of Households benefited)	How benefited? e.g. jobs, new markets created, organizations, strengthened)
BUILDING INCOME OR ASSETS FOR THE POOR			
Management of biological and natural resources assets, (e.g. water, soil, plants, animals, forests)			
Improved human resource assets, (e.g. education, health, skills, nutrition);			
Conditions for secure management: household or community (e.g., tenure security, boundary demarcation)			
Conditions for secure management: civil society (e.g. capacity-building, institutions, governance)			
Total			
	Area # of HA	Human Welfare (# of Households benefited)	How benefited? (e.g. jobs, new markets, organizations strengthened)
FACILITATING EMPOWERMENT OF THE POOR			
1. smallholder farmers			
2. the landless			
3. pastoralists			
4. women-headed households,			
5. indigenous or ethnic populations.			
6. Other special populations			
Total			
	Area # of HA	Human Welfare (# of Households benefited)	How benefited? (e.g. jobs, new markets, organizations strengthened)
REDUCING VULNERABILITY AND/OR ENHANCING POOR PEOPLE'S SECURITY			
Reduce resource depletion (e.g. overfishing, bushmeat hunting, etc			
Reduce resource degradation (soil erosion, water contamination, habitat fragmentation)			
Reduce shocks or disasters (e.g. from flooding, fire, or drought; reduce human wildlife conflict)			
Total			

Figure 2. Ecosystem or Programmatic Level: Reporting on CEPF contribution to poverty reduction at the portfolio scale

CEPF Contribution To Poverty Reduction			
	# of Projects	Total CEPF funding amount	Percentage of portfolio
BUILDING INCOME OR ASSETS FOR THE POOR			
Management of biological and natural resources assets, (e.g. water, soil, plants, animals, forests)			
Improved human resource assets, (e.g. education, health, skills, nutrition);			
Conditions for secure management: household or community (e.g., tenure security, boundary demarcation)			
Conditions for secure management: civil society (e.g. capacity-building, institutions, governance)			
Total			
	# of Projects	Total CEPF funding amount	Percentage of portfolio
FACILITATING EMPOWERMENT OF THE POOR			
7. smallholder farmers			
8. the landless			
9. pastoralists			
10. women-headed households,			
11. indigenous or ethnic populations.			
12. Other special populations			
Total			
	# of Projects	Total CEPF funding amount	Percentage of portfolio
REDUCING VULNERABILITY AND/OR ENHANCING POOR PEOPLE'S SECURITY			
Reduce resource depletion (e.g. overfishing, bushmeat hunting, etc			
Reduce resource degradation (soil erosion, water contamination, habitat fragmentation)			
Reduce shocks or disasters (e.g. from flooding, fire, or drought; reduce human wildlife conflict)			
Total			
Sum Total by Ecosystem or Programmatic Level: Portfolio Wide	# of Projects	Total CEPF funding amount	Percentage of portfolio

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The Critical Ecosystem Partnership Fund and Poverty Reduction: An Overview

INTRODUCTION

Human activities are taking a heavy toll on natural systems around the world. Unsustainable agriculture, unregulated extractive industries, creeping urbanization, rampant coastal development and rapacious overfishing by giant industrial fleets are fragmenting natural environments. The introduction of exotic species and climate change are throwing delicately balanced ecosystems out of balance. Illegal and unregulated hunting, fishing and trade in wildlife products are depleting many species. Extinctions of plants and animal extinctions are more than 1,000 times what would be expected and may be equal to the rates during the great mass extinctions of the past.

One-third of the world's land has already been converted to agriculture or urban development. Soil degradation, civil conflict, natural disasters, expansion of large-scale development activities and the projected doubling of demand for food in the next 50 years suggest that there will be pressure to convert an additional one-third of global land within the next 100 years. Yet this global land transformation has not improved the quality of life for the vast majority of the planet's population. Degraded landscapes and dwindling species—the loss of biodiversity—reduce the quality of life for all. Fundamental ecosystem services that are the foundation for human welfare—clean air, fresh water, food and fiber, natural medicines, pollution control and waste disposal, protection from natural disasters, and regulation of disease—are being jeopardized.

While these actions are happening globally, their impacts have been most acute in Earth's biologically richest and most threatened areas. These areas, known as biodiversity hotspots, have already lost more than 70 percent of their original extent and the need for urgent action is critical. More than two-thirds of the most endangered mammals and more than 80 percent of the most endangered birds are found in the hotspots, where human pressure threatens the very ecosystems that human society relies on.

The Critical Ecosystem Partnership Fund (CEPF), a joint initiative of Conservation International, the Global Environment Facility, the Government of Japan, the John D. and Catherine T. MacArthur Foundation and the World Bank, aims to dramatically advance biodiversity conservation within these hotspots by providing strategic assistance to nongovernmental organizations, community groups and other civil society partners to engage in conservation efforts. While the target of CEPF's actions is biodiversity conservation—species are best protected when the habitats and ecological processes that support them are maintained—the benefits from these intact habitats and ecological processes extend well beyond biodiversity—they also support human welfare by protecting the core ecosystem services that are the foundation for sustainable and healthy human lives. Our overarching strategy in these hotspots is defined by the understanding that preserving the rich natural resources of the hotspots is vital to the health and well being of nature as well as sustaining the livelihoods of people and contributing to poverty reduction. In particular, the poor within the hotspots are the people most reliant on natural resources for food, shelter, medicine, income and employment. They in turn, are the hardest hit by the biodiversity crisis.

This short paper briefly reviews CEPF's perspective on biodiversity, poverty reduction and the ways that the two are linked. A complete synthesis of the literature on poverty reduction and biodiversity conservation is beyond the scope of this paper. While we touch on the elements required, the key emphasis is on the places and scales where CEPF actions have the greatest impact. Building on these linkages, we summarize CEPF's key actions and propose a conceptual framework to review these links within the CEPF portfolio and a monitoring system to evaluate CEPF contributions.

CEPF'S FOCUS: THE CONTEXT FOR BIODIVERSITY CONSERVATION

Beginning with the pioneer work in the mid-1980s by British ecologist Norman Myers, Conservation International (CI) has over the years perfected a focused strategy to deal with biodiversity loss at a global scale, focused on "biodiversity hotspots." The hotspots are regions with both exceptionally high concentrations of endemic species (those found nowhere else) and high habitat loss. CI has identified 25 hotspots as being of vital importance in saving biodiversity[i]. These are also the areas where the pace of change and the need for action is greatest.

These 25 areas historically had primary natural vegetation covering about 11.8 percent of the Earth's surface. Today, 88 percent of that original vegetation cover has been lost. The 17 million square kilometers that these areas once covered has shrunk to 2 million square kilometers, or 1.4 percent of the Earth's surface. Of this small amount of land that remains in original habitat, only about 40 percent (about 800,000 km^2) of the remaining area of the hotspots is in any type of managed area, leaving some 60 percent (1.2 million km^2) of these critically important fragments unmanaged and unprotected. This could be devastating to life on Earth because of the tremendous biodiversity within the hotspots: The hotspots hold at least 44 percent of all plant species as endemics and 35 percent of all non-fish vertebrate species as endemics. For amphibians, over half are endemic to hotspots. Shrinking habitat and the high levels of endemism have already made the hotspots have the highest levels of threat to the species they harbor: Over half of all threatened species globally are only found in this 1.4 percent of the planet's land surface[ii].

CEPF's approach to determining where to invest within hotspots is to define, together with diverse stakeholders and experts, the most strategic and economically and environmentally sustainable priorities for actions in the most critical global sites for conservation. CEPF currently supports civil society-led conservation efforts in 13 of these global hotspots (Figure 1). CEPF investments are restricted to hotspots that are home to World Bank member countries that have ratified the Convention on Biological Diversity[iii].

Within the hotspots where it invests, CEPF uses a science-based analysis to define key sites and biodiversity conservation corridors. These sites and corridors are determined as part of a process to identify globally threatened and geographically concentrated species, the sites most critical for their survival and the matrix of biodiversity-friendly land use around these sites necessary to allow the maintenance of natural ecological processes. In some naturally fragmented and relatively small hotspots, such as the Eastern Arc Mountains and Coastal Forests of Tanzania and Kenya Hotspot, a corridor approach is not feasible. In these instances, only species and sites may be identified.

Figure 1.

CEPF'S FOCUS: HUMAN CONTEXT WITHIN THE HOTSPOTS

While the hotspots are the places with the world's highest conservation value, they are also places undergoing dramatic demographic changes. CI has recently analyzed the demographic context within the hotspots using data from 2002. A few of the findings that are relative to the global average, hotspots have higher population densities[iv] and are growing faster .[v]

For example, nine of the hotspots where CEPF invests have higher population densities than the global average of 46.3 per square kilometer and the populations of all but four of the hotspots are growing faster than the global average of 1.2 percent (Table 1).

Table 1.

Hotspot	Population 1995	2002	Avg. Annual Chg. (%) 1995-2002	Persons km^{-2} 1995	2002	Total Fertility Rate 2002
Atlantic Forest	104,055,000	118,458,000	1.9	70.2	79.9	2.2
Cape Floristic Region	3,718,000	4,302,000	2.1	49.6	57.4	2.9
Caucasus	36,891,000	35,760,000	-0.4	66.3	64.3	1.6
Chocó-Darién-Western Ecuador	10,123,000	11,246,000	1.5	44.7	49.6	3.1

Eastern Arc Mountains & Coastal Forests of Tanzania and Kenya	8,901,000	11,182,000	3.3	46.2	58.0	5.4
Guinean Forests of West Africa	85,278,000	110,460,000	3.8	96.8	125.4	5.5
Madagascar	15,953,000	19,102,000	2.6	26.5	31.7	5.4
Mesoamerica	60,525,000	70,100,000	2.1	52.4	60.7	3.5
Mountains of Southwest China	11,121,000	10,678,000	-0.6	19.9	19.2	1.8
Philippines	64,002,000	78,776,000	3.0	216.3	266.3	3.6
Succulent Karoo	308,000	320,000	0.5	3.0	3.1	2.9
Sundaland	190,539,000	225,047,000	2.4	127.2	150.3	2.6
Tropical Andes	41,493,000	43,117,000	0.5	29.5	30.7	3.0
Total	632,907,000	738,548,000	1.8	65.3	76.7	3.3

Worldwide, the overall percent of rural poor has dropped, even with significant population growth – showing that advances in poverty alleviation are possible. Yet most of the world's poverty is concentrated in rural areas, even though the world as a whole is becoming more urbanized. About half (54 percent or 3.24 billion) of the world's 6 billion people live in rural areas. Of the 1.2 billion people who are considered to be "extremely poor," an estimated 75 percent live in the rural areas[vi]. Unfortunately, even as the world makes poverty reduction a priority, estimates for rural poverty in the future are still bleak – by 2025 over 60 percent of the world's 'absolute poor' will live in rural areas[vii]. Numbers of poor can change very quickly, however; war, economic shocks or serious natural disasters can quickly throw masses of people into poverty. They can also turn poor with some assets (e.g. small farmers) into poor with none (e.g. refugees).

The magnitude of rural poverty in hotspots is high and may be increasing. This is particularly troubling, since it means that *the most vulnerable species on the planet are found in the same places as highly vulnerable people.* High malnutrition exists in 16 of the 25 hotspots. Twelve of the 13 countries with the highest rates of malaria infection are in the hotspots, while of the next highest group of 42 countries, 27 are in the hotspots. Four of the hotspots occur in parts of sub-Saharan Africa with the highest HIV levels. The hotspots also include many of the world's poorest regions, and represent places where the "poorest of the poor" may be in extreme situations.

There are substantial variations in rural poverty within regions where CEPF provides support. In many of the places where CEPF provides support, rural poverty is increasing, rather than decreasing. For example, for Latin America as a whole, rural poverty has increased from 78.2 million (1997) to 90 million (2000) in a 3 year period[viii].

There are also disparities within countries and there is some evidence that areas with high biodiversity—even within the hotspots—may have more poor. This makes intuitive sense from an ecological perspective, because endemism is often found along altitudinal gradients. While biodiversity may thrive here, these steep volcanic slopes and poor tropical soils are notoriously poor for agriculture. Indigenous or traditional peoples living in these areas may know how to live sustainable, but poor who migrate to these areas searching for land put in a high investment of labor for a very small return that often vanishes in a few years. This process undermines locally managed areas, leads to deforestation and habitat fragmentation, and leaves the rural poor with little choice but to begin the cycle anew.

Evidence for the pockets of poverty, inequality and biodiversity are shown by the finding that "under nutrition rates in several large countries—including Mexico, Guatemala, Brazil, Peru, Ecuador, China, Indonesia and Vietnam—are much higher in the vicinity of biodiversity hotspots than for the country as a whole[ix]." Inland areas in rural China have rural poverty rates that are 7-10 times higher than coastal rural populations; the types of resource dependence differ substantially as well [x]. These pockets of poverty are

often found near protected areas, especially when the regions have high in-migration. In the Eastern Arc Mountains and Coastal Forests of Tanzania and Kenya Hotspot, for example, an estimated four million people live within 10 kilometers of one of the Eastern Arc Mountain ranges.

Understanding why and where rural poverty is increasing and how it relates to pressures on biodiversity is a key component in defining what actions are realistic in a given context. In many cases, there can be different kinds of poor competing over access to resources—for example, poor migrants into an area may rapidly overwhelm existing management systems of indigenous populations or of community conserved areas[xi]. The hardest places for interventions to succeed are where a rapid process of social change is underway. Influences that can push local-level changes in resources uses and affect the access and vulnerability of local populations are often external to regions and rooted in government policies or programs, such as road construction and consequent changes in land uses. Addressing changes in such areas will usually require immense amounts of money and political will.

CEPF investments are targeted to the countries with the highest biodiversity—but oftentimes, these are the same places with the highest poverty. Many actions within this context will simultaneously contribute to both conservation and poverty reduction. However, within most hotspots, the pressure on biodiversity, forests, water and other natural resources is likely to intensify. CEPF needs to be aware of the demographic trends and context of poverty in the areas where it is working. The social context within CEPF areas may greatly affect the types of support for both biodiversity conservation and poverty reduction that are realistic for CEPF to implement and that will have lasting impacts.

POVERTY REDUCTION AND BIODIVERSITY CONSERVATION: AN ANALYTICAL OVERVIEW

There has been a great deal of debate in the development literature about whether the poor directly *cause* biodiversity loss, are the *agents* of biodiversity loss propelled by factors originating elsewhere, or whether they are the *defenders* of biodiversity. All of these can be true—even within one community. Part of the challenge in capturing the relationships between biodiversity and poverty is that the relationships can change quickly, often triggered by external events outside the control of local communities. The relationships also differ substantially within countries and at different scales. Understanding these complex relationships is difficult without long-term, historical knowledge of the social forces that have shaped the way that biodiversity is viewed, used, protected or destroyed. Despite a lack of clarity on the precise links between poverty and biodiversity, there is however, strong global consensus that there are direct links between poverty and environmental degradation (including biodiversity conservation).

The first venue where these issues were linked was the United Nations Conference on the Human Environment held in Stockholm in 1972. While the conference largely arose from public protests in industrialized countries about the increasing social and environmental costs of industrialization, developing countries argued that poverty, not industrialization, was the overriding cause of environmental problems in the South.[xii] In 1987, the World Commission on Environment and Development (Brundtland Commission) noted in Our Common Future, that "alleviation of poverty in developing countries as the central axis around which global sustainability would revolve."[xiii] Detailing the links between poverty and environmental degradation, the report commented that:

- "Poverty is a major cause and effect of global environmental problems. It is therefore futile to attempt to deal with environmental problems without a broader perspective that encompasses the factors underlying world poverty and international inequality."
- "Many parts of the world are caught in a vicious downwards spiral: poor people are forced to overuse environmental resources to survive from day to day, and their impoverishment of their environment further impoverishes them, making their survival ever more difficult and uncertain".

The 1992 United Nations Conference on Environment and Development (Rio Summit) reflected the perspectives of developing countries and the need to address basic human needs and development assistance with environmental issues and poverty reduction. Most recently, nations have subscribed to the Millennium Development Goals. These goals bind the global community to an ambitious program to halve

global poverty and hunger by 2015, by meeting basic needs. Goal 7 broadly focuses on environmental sustainability, including targets for biodiversity conservation through protected areas, forested land and access to clean water. UN Secretary-General Koffi Anan has more clearly specified views on biodiversity, stating,

> "Biodiversity provides millions of people with livelihoods, helps to ensure food security and is a rich source of both traditional medicines and modern pharmaceuticals. Biodiversity also provides basic ecological services on which all life depends. Unless we stop the loss of biological resources, our efforts to reach the Millennium Development Goals by 2015 will be that much more difficult, if not impossible."

While there is general global agreement that poverty and biodiversity conservation are linked, understanding these linkages within the context of CEPF projects is key to defining how CEPF can both maximize and monitor positive links. This section summarizes selected findings on the nature of biodiversity conservation and poverty reduction, with an emphasis on their relationship to CEPF actions.

1. **Poverty is a multidimensional concept. Rural poverty is complex and context-dependent.**

There has been tremendous evolution in both the definitions of poverty and the mechanisms to address it in the past 40 years. From a concept that was primarily economic, we now understand that poverty also means deficits in health and education, along with increased vulnerability. This evolution in understanding reflects the social and institutional context within which poverty is based. A majority of CEPF investments supports actions where biodiversity is greatest—in rural areas. Rural poverty differs substantially from urban poverty, but even the face of rural poverty may be very different within a country. Rural households with productive land, food, clean water, housing and strong local relationships may not be concerned with food security, but suffer from dimensions of poverty based in their lack of access to health and education services. In contrast, landless wage laborers may appear to have sufficient income to have shelter and buy food, but they are highly vulnerable if anything happens to their own health so they can't work or their source of income. These examples point to some of the challenges in defining precisely who is poor—and how poor they are. Some researchers studying rural poverty and the environment have categorized the assets that the poor have or use, including[xiv]:

- biological and natural resources, (e.g. water, soil, plants, animals, forests, either privately or commonly held);
- human resource assets, (e.g. education, health, skills, nutrition);
- conditions for secure management: household or community (e.g. tenure security, boundary demarcation)
- conditions for secure management: civil society (e.g. capacity-building, institutions, governance).

The rural poor draw on combinations of these assets in different proportions at different times – poverty is related to insufficiency of these assets. In urban areas, the most important asset for the poor is their labor. In rural areas, people use different combinations of these assets in a day, or over the course of the year. Depending on the combinations, their welfare may go up and down seasonally, for example. Viewing rural poverty simply in terms of income, wealth or nutrition[xv] misses out on the different assets rural people have, as well as their link to the environment. Other frameworks have examined the direct links between different rural resources and how they are managed or what resources are needed to insure that people have sustainable livelihoods[xvi]. The "resource bundles" concept looks at the amount of resources needed for a family to invest in resource improvements that either maintain, enhance, forestall, or reverse the quantity and quality of the resources or degradation[xvii]. These different ways of understanding rural poverty have different proponents and detractors, but all are rooted in the diverse and complex ways people interact with rural biotic resources.

Apart from looking at the assets that the poor possess or lack, it is important to look at how these assets are organized among the different groups that characterize the poor. There are five groups that the World Bank has concluded make up the majority of the rural poor. These categories can be looked at in light of the assets of the resources above that the poor depend upon or lack:

- smallholder farmers with up to two hectares of crop land;
- the landless (those without any agricultural land);
- the pastoralists (those who are not settled in any specific area and derive most of their income from pastoral livestock);
- women-headed households, (those who do not receive remittances from partners or relatives living outside the household); and
- other populations, (e.g., indigenous or ethnic populations).

The composition of the assets among these different groups may vary significantly. Just as the composition of rural poverty is not homogenous, the ways that poverty affects different groups varies.

Implications for CEPF: The descriptions above helps contribute to an understanding of the assets used by the rural poor and definitions of distinct groups of rural poor based on different use of and access to assets. These different categories all emphasize different entry points to reducing rural poverty. Poverty can be addressed by supporting any or all of the different assets that the poor have or use, and by working with the particular groups that make up the rural poor. CEPF can strengthen programmatic linkages to poverty reduction by understanding these elements of rural poverty within the context of CEPF ecosystem profiles. Understanding both where the poor reside, the location of the resource base they depend upon, and the characteristics of the poor themselves is an important element for analysis within each ecosystem profile. Geographic targeting within ecosystems can be of particular importance in supporting the management of *biological and natural resources* that the rural poor rely upon. Building on information in the CEPF ecosystem profile, it will be possible to track CEPF contributions to poverty reduction by monitoring both the number of poor directly supported in CEPF projects, their spatial distribution, and CEPF contributions to supporting management of the assets that the poor depend upon.

2. Understanding scale is essential for understanding biodiversity conservation and poverty reduction.

Integral to understanding the links between poverty and the environment is the concept of scale – ecological, geographic and temporal – that underlies the concepts that frame our understanding of biodiversity, poverty and the political and institutional framework for addressing biodiversity loss and reducing poverty.

Biodiversity is scale dependent: it ranges from genes, through species, to larger scales such as ecosystems. Different kinds of management are needed for these different levels[xviii]. Management to ensure the genetic diversity of potatoes, for example, means conservation both in laboratories and seed banks and in the wild. Hundreds of small patches of farmland can be managed by traditional farmers aware of the need to maintain this diversity. Managing for all of the diverse plants and animals found in an ecosystem, in contrast, is well beyond the scope of these farmers. While farmers may be integral to managing ecosystems, their decisions about how such large areas should be managed would not necessarily take the genetic diversity of all the plants and animals into account. This is where geographic scales come into play. Furthermore, biodiversity and geographic scales can be linked in terms of the benefits they can provide. While small farmers may do a good job managing in ways that generate local benefits, it may not be reasonable to expect them to manage ecosystems processes that may generate benefits (e.g. carbon sequestration) that primarily go to scales distant from their own – such as global ones. Temporal scales are significant as well, and are interrelated to both ecological and geographic scales. Some ecological processes happen quickly, others seasonally, and others over hundreds of years.

Temporal scales also affect politics and economic decisions, where the scales for action typically are short. This can be contrasted with thinking and investments about sustainability that inherently include thinking over the long term. Some traditional peoples have thought of these longer time scales as effects on their "grandchildren's grandchildren." Geographic scales could run from the local park, to the ecosystem, to the nation. Political scales, for example, could run from the village council, to provincial government alliances, to national government agencies. Understanding these dimensions of scale is of key importance in understanding the nexus between poverty reduction and biodiversity conservation.

Implications for CEPF: It is important to pay attention to the different dimensions of scale within CEPF projects. Restoring lost biodiversity may take a long time over a wide area, while reducing poverty or vulnerability may happen quickly in a small area. CEPF needs to work with partners and grantees to get them to understand that there may be differences in the scale of interventions compared to the scale of problems – it is worth noting these differences within CEPF reporting**.**

3. Actions to reduce poverty can happen at different scales and through different mechanisms.

Given the complexity of rural poverty, there are no quick fixes. However, a class of actions were viewed as "imperatives" in reducing poverty as articulated in the World Bank's *World Development Report 2000/2001* that focused on poverty. Linking these three broad imperatives more narrowly to biodiversity conservation and rural poverty begins to suggest some particular areas where interventions are most significant.

The first category identified by the World Bank is **promoting opportunity for poor people, by helping countries sustain economic growth and reduce inequality, but also by helping the poor participate in the economy and increasing their assets.** In the discussion in the previous section, there were four different kinds of assets that the poor rely upon. The category most directly relevant for this section is biological and natural resources. While many poor possess or have access to different kinds of assets, in many cases biological and ecosystem assets are the foundation of their survival. Strong support of environmental stewardship (including biodiversity conservation) is therefore an essential component of poverty elimination within the rural context. By supporting the poor in using these assets sustainably so that they are maintained or increased, contributions are made both to conservation and to poverty reduction.

Actions that support human resource assets also contribute to poverty reduction. This includes a wide category of investment—but actions that contribute to people's education or livelihood options, such as through ecotourism, help promote opportunities for the rural poor. Conservation actions can also be linked to creating the conditions for management capacity, both for households and at greater civil scales. These actions also help to safeguard and support the asset base of the poor. This latter category can include helping to support the institutions and the capacity within civil society for transparency, appropriate valuation of resources, and other elements that guide decisions about investment in the rural sector.

The second imperative identified is **facilitating poor people's empowerment, by supporting participation in development, creating accountable institutions where the poor have a voice, attacking corruption, supporting decentralization and community development, and supporting gender equity.** Defining the institutions and mechanisms required for helping to manage biodiversity is essential. Global analyses have reviewed hundreds of case studies around the world in fisheries, irrigation systems, wildlife, forest management, biodiversity and water[xix]. These reviews have led to identification of the conditions that are most appropriate for development of sustainable management of open access resources. Most of these conditions involve supporting the necessary conditions for management at both household or community levels and more broadly throughout civil society.

The CEPF approach is particularly suited to this imperative as many of its investments directly support civil society efforts to help communities and local people participate in and benefit from conservation efforts. In Southeast Asia's Sundaland Hotspot, for example, CEPF's entire $10 million investment planned for the island of Sumatra focuses on building civil society capacity at the district level and below.

The final imperative **is reducing vulnerability and enhancing poor people's security, by helping them reduce impacts of both risks and shocks, by reducing conflict, supporting actions to reduce health epidemics such as HIV/ AIDS, malaria, etc.** The ecosystems in the hotspots are highly vulnerable because the demands placed on them are higher than what they can support. While affluence in developed countries has freed people from direct dependence on local ecosystem services and buffered them from the consequences of ecological change, the rural poor have no buffers or substitutes. Declines in wild resources, biodiversity or ecosystem health that provide food, fuel, clothing, medicines and shelter are linked to declines in rural health and welfare. For example, when water quality declines, the poor have

neither the money nor access to buy clean water. The poor and most marginal are vulnerable to three kinds of changes, that are briefly described below. However, it is important to note that these negative environmental changes may not be the results of actions by the poor. They can be rooted in actions, policies, and decisions based far away from where the consequences of these actions occur.

Depletion occurs when the resources the poor depend upon go extinct or give out which can happen from natural causes such as disease or human-induced causes such as overharvesting. A dramatic example where biodiversity conservation and poverty reduction are directly linked is bushmeat harvesting. Bushmeat hunting to satisfy growing urban populations threatens wildlife species with extinction while eliminating protein sources for rural people. This in turn increases their protein-energy malnutrition, results in greater stunting, and increased susceptibility to disease.

Degradation affects the rural poor when the quality of the resources they depend upon are seriously affected so that they no longer perform their ecosystem function or support human welfare. Siltation from upland clearing, pesticide runoff from agriculture, gold mining and mercury use degrade water quality, often putting millions of downstream users at risk. Other types of degradation occur when forest "edges" are created when forests are fragmented. This in turn increases interactions among pathogens, vectors and hosts, and also increases risks of human-wildlife conflict (i.e., wildlife attacks and crop-raiding).

Shocks or disasters particularly affect the poor, and occur when ecological conditions drastically change, often linked to weather. Natural disasters are particularly worse where environmental degradation is evident. Examples include severe flooding or drought caused by deforestation; changes in fire regimes linked to introduced grasses; changes in disease vectors linked to changed land use and weather, and removal of mangroves to stop storm surges from typhoons. Such shocks and disasters make the poor highly vulnerable—they can risk loss or damage to their lives and everything they possess. Emerging information on the consequences of climate change suggests that many developing countries will be particularly affected by extreme weather—hurricanes, droughts, floods, bringing along changes in disease and insect vectors, fire and famine.

Efforts to stop or to restore ecosystem destruction can directly support the poor. A recent study of 41 protected areas covering approximately 1.5 million hectares in Madagascar, found that the economic rate of return of the protected area system was 54%[xx]. The main benefits were from watershed protection, although ecotourism benefits were significant and expected to increase over time and provide greater returns to surrounding communities. Perhaps the most interesting part of the analysis were estimates of who benefited from the system—and who lost. In this case, the protected area system was shown to primarily benefit 265,000 households of poor rice farmers (average of 1.5 hectares per household)[xxi]. However, 50,000 slash and burn farmers were considered to be "losers" when parks were established, since protection reduced the area available to them. The author notes however, that these slash and burn farmers were already extremely poor. This study points out the conflict that exists in many areas between conservation and poverty reduction. The poor may benefit more than expected from protected area networks. However, the "poor" are not one uniform group, as described earlier. Different groups of poor may be able to capture assets differentially. Every intervention will not be able to support all of the poor- in many cases, biodiversity loss results from the actions of one group that in turn affects the livelihoods of other groups of rural poor.

Establishing protected areas is one key way to halt biodiversity loss, but there are others as well. Restoration efforts to halt depletion, degradation, and to avert disasters in places can support not only biodiversity but can also generate local employment. For example, South Africa's Working for Water Program[xxii], is enhancing water security, improving ecological integrity by eliminating invasive species, restoring degraded lands and promoting sustainable use of natural resources. The program invested in South Africa's most marginalized sectors, employing over 42,000 people in less than 4 years. There is undoubtedly ample room to expand direct efforts to address restoration at larger scales, especially in fragmented corridors, where such efforts can help restore connectivity.

A final way to address interventions is to directly focus on groups of rural poor that can be easily defined in a given place (e.g. smallholder farmers, landless, pastoralists, women-headed households, and indigenous

groups). Working directly with these groups in ways that support their asset base and management of resources, and provide opportunities, empower them or reduce their vulnerability can significantly support both biodiversity conservation and poverty reduction. Many actions will not fit neatly into one of the categories above and will frequently address more than one category. For example, in many rural areas, residents have a variety of informal institutional arrangements that govern access to natural resources that can provide an important buffer when other assets are limited, such as times of drought or other natural disasters. These social networks, and the resources they govern, provide insurance to families when conditions of uncertainty or instability affect them. They also regulate consumption so that these resources – which are often shared - are not overused, even during times of scarcity. These mechanisms can break down, often from what can be seen as positive influences (e.g. roads) or negative ones (disasters). Actions that support conservation by building local institutions that better manage resources cross multiple points of intervention. All of these different categories are entry points for simultaneously addressing poverty reduction and biodiversity conservation primarily at site scales. They do not represent the only types of interventions needed, but provide starting point for defining how actions to support biodiversity conservation can simultaneously contribute to poverty reduction.

Implications for CEPF: Strong support of environmental stewardship (including biodiversity conservation) is an essential component of poverty elimination. CEPF actions that target particular groups of rural poor, such as indigenous peoples, will often contribute to poverty reduction as well—especially when targeted to poor communities. Finally, actions that open opportunities for people to participate in decision-making and civil society within the rural sector, and that promote transparency and accountability among institutions, help led to the openness and accountability needed for community-driven development efforts that can also help support poverty reduction.

CEPF addresses poverty reduction by working with nongovernmental organizations, community groups and other civil society partners to maintain the assets upon which the poor depend and by working with specific groups of the targeted poor within biodiversity corridors. CEPF also supports actions that promote opportunities - especially of maintaining biological assets and through employment, by facilitating empowerment of the rural poor and by reducing vulnerability to environmental depletion, gradation and disasters. As described above, one can directly focus on the assets the poor depend upon, work with groups of rural poor directly or more broadly build on a set of key interventions needed. Just as biodiversity conservation is multidimensional and must be addressed at different scales, so too must poverty reduction. This section summarizes some of the different ways that the CEPF portfolio contributes to poverty reduction.

In the sections above, we identified four categories of assets upon which the rural poor depend. There is no clear amount of any one of these assets that is automatically "enough" to lift the poor from poverty. Development research indicates that to achieve sufficient income gains for the rural poor, it is necessary to have multiple types of assets in place. The relative amounts of different types of assets held by the poor will vary across the places where CEPF supports civil society. Furthermore, many CEPF actions cross categories. Ensuring sustainable harvests of bushmeat, for example, supports biodiversity as well as people's nutritional needs. Nevertheless, it is possible to make the following claims.

Much of the CEPF portfolio supports the management of biological and natural resources. While not all of these activities will directly contribute to poverty reduction, a review of the CEPF portfolio indicates that there are many examples where there are direct links made between enhanced management of biological and natural resources and poverty reduction. Although these assets are often un- or undervalued, they form the supporting foundation for rural lives and livelihoods. In the past year (2004) examples of CEPF lending within this category includes

- **Choco-Manabi:** Improving the management of biodiversity in Laguna de Cube – Mache-Chindul Reserve, promoting sustainable practices that halt the loss of habitat, increasing the forest coverage and improve the livelihoods of communities.
- **Southwest China**: Engaging local Tibetans to assess the status of non-timber forest products (NTFP), explaining threats resulting in degradation of NTFPs and identifying measures and actions for alternative use and conservation in Mt. Meilixueshan.

- **Upper Guinean Forests**: Establishing a collaborative management program for wild fauna, involving local communities and Mt. Nimba Biosphere Reserve authorities as the first phase of a long-term initiative for the management of Mt. Nimba Biosphere Reserve.

CEPF has also contributed to building human resource assets, (e.g. education, health, skills, nutrition). Many CEPF grantees are effectively addressing the myriad issues that threaten local communities and striving to improve livelihood opportunities. When these issues target poor and marginal communities – they help to strengthen and diversify the capacity of the poor to take actions to improve their wellbeing.

- **Eastern Arc**: Demonstrate the positive influence of ecotourism by connecting conservation management in the Kinondo region with tangible social and economic benefits to the local people.
- **Madagascar:** Establish the Daraina Information and Communication Center as an official forum for community-based forest conservation and community development. All community members, authorities and public sector personnel will have access to information on local, national and international market structures, product development, natural resources management techniques and improved agricultural systems.

From working with indigenous communities in the Chocó-Darién Western Ecuador Hotspot to developing plans to ensure improvements in food and income security as well as a balanced ecosystem to developing community-based management strategies and sustainable fishing and forest use in wetland areas of Madagascar. Such actions not only support management of resources—but their focus on building human capital assets provides a set of skill s that can be transferred more broadly throughout communities. Such actions help support what is being called "community-driven development."

CEPF also contributes to creating the conditions—both at site scales and in the larger society that are necessary for both poverty reduction and conservation. The most significant and easily measured is CEPF's focus on institution building. An external review of CEPF in 2003 found that an estimated 49 percent of CEPF-supported projects focus on institution building.

In terms of working with specific groups of rural poor, CEPF-supported projects have especially targeted small farmers and indigenous communities. Many of the places with significant remaining biodiversity are the traditional lands of indigenous and traditional peoples. Supporting indigenous and traditional peoples in managing their lands and resources within high priority conservation areas provides the conservation community with new partners who are intimately familiar with the biodiversity that CEPF and others hope to conserve. It also helps increase the participation of indigenous groups, who are often marginalized, more broadly into civil society. In the Mesoamerica Hotspot, for example, CEPF is supporting an innovative project to promote traditional conservation practices in the Cabecares indigenous communities of Bajo Chirripo and Nairi Awari in the La Amistad Biosphere Reserve. The project, led by Asociación IXACAVAA de Desarrollo e Información Indígena, will help these groups conserve their indigenous territories through development and implementation of a strategy for conservation and ancestral resource management, capacity building within the communities and the recuperation of ecosystems and threatened species.

CEPF also helps build what the World Bank has called imperatives for action: Opportunity, Empowerment, Security. One of the most significant challenges to implementing conservation in many tropical countries is the weakness of existing institutions, at all levels, and coordination among institutions to support effective Management (Barrett *et al.* 2001). Many CEPF actions are directed toward creating or supporting mechanism for engagement of civil society through stakeholder consultation, in building accountable public and private sector institutions, at different scales, and in supporting local level capacity for decision-making and action.

- **Sundaland:** Document and publicize lessons learned from a decision-making process that led to the construction of a hydro project resulting in local flooding and a shortage of electricity in Bukit Bungkuk, part of the Tesso Nilo/Bukit Tigapuluh Landscape. The aim is to help key stakeholders understand and avoid the negative effects of forest conversion on the provincial economy.

- **Succulent Karoo**: Conduct a stakeholder consultation workshop to develop a management and business plan for the Knersvlakte biodiversity corridor to guide implementation of activities in this priority area over the next three years.
- **Philippines:** Build capacity of local communities and government officials to call for and implement better forest corridor and watershed management as well as safeguards against development harmful to conservation.
- **Southern Mesoamerica**: Conserve the indigenous territories of Bajo Chirripo and Nairi Awari by fostering the adoption of traditional resource management practices. The grant supports the development of a strategy for conservation and ancestral resource management, capacity building within indigenous communities and recuperation of ecosystems and threatened species.

Reducing vulnerability of the rural poor to depletion, degradation and disaster is another area of CEPF work. Poor rural communities are more seriously affected by natural disasters such as floods, forest fires, cyclones, landslides and dramatic changes in the social, political and market climates. There are several CEPF projects to help make the rural poor less vulnerable, by reducing the impacts from depletion, degradation, and disaster.

- **Southwest China**: Build a partnership with the Tuogushui community to protect their agriculture from natural disasters and thus decrease the harvest of forest products and work with the Baimaxueshan Nature Reserve to monitor traffic through the mountains.
- **Atlantic Forest:** Implement sustainable systems of environmental restoration and the collective management of the landscape by the citizens of the Carava River Watershed on the Discovery Coast.
- **Eastern Arc:** floods destroyed the JBIC-established Tana Delta Irrigation scheme in the remote Tana Delta region of Kenya, reducing water to local communities and increasing pressure on forest primates. CEPF support is helping define how best to increase forest cover and ultimately provide a sustainable source of food plants for the primates and building, firewood, medicinal products and other uses for local communities as well as reduced flood-related erosion.

CONCLUSION

The convergence of critical areas for biodiversity conservation with millions of people who are impoverished and highly dependent on healthy ecosystems for their survival is more evident in the hotspots than anywhere else on Earth. The magnitude of rural poverty in hotspots is high and may be increasing. Within most hotspots the pressure on biodiversity, forests, water and other natural resources is likely to intensify. Conservation actions must build on an understanding of the human context to understand the scale and scope of interventions needed.

While many poor possess or have access to different kinds of assets, in many cases biological and ecosystem assets are the foundation for their survival. Strong support of environmental stewardship (including biodiversity conservation) can be a component of poverty reduction in the rural context. Actions to conserve biodiversity also contribute to maintaining intact habitats and ecological processes that support human welfare by protecting the core ecosystem services that are the foundation for sustainable and healthy human lives. In particular, the poor within the hotspots are most reliant on natural resources for food, shelter, medicine, income and employment. If the rural poor draw their livelihoods from a fragile and steadily degrading ecological base, there is no potential for sustainable lives and livelihoods. At the same time, it is vital to also acknowledge that in most fragile ecosystems, the poor are unlikely to escape from poverty by sustainably exploiting biodiversity. Research demonstrates that direct dependence on biotic resources, such as non-timber forests products, fish, wildlife and other resources, rarely provides a sufficient surplus to allow the poor to move out of poverty[xxiii]. While the actions supported by CEPF help reduce the vulnerability of the poor and help provide rural sector alternatives, it is unrealistic to expect that these actions will be enough to lift whole areas or regions from poverty. Yet evidence does suggest that strategic investments can make a difference, and can lift people out of poverty when they can adequately manage their resource base and have the human resource assets (such as education) and the contextual settings (such as infrastructure) in place[xxiv].

CEPF's mission is one of biodiversity conservation. Yet investments in protecting, maintaining and restoring species, habitats, and ecosystems, can also help support rural lives and livelihoods. The rural poor are highly vulnerable to many of the same actions that threaten biodiversity. They have a great deal to lose when their lands and resources are taken over or bisected by infrastructure and development projects, concessions to extractive industries, or outside groups (e.g. commercial hunters, industrial fishing trawlers, illegal loggers, landless migrants). CEPF supports actions that promote opportunities - especially of maintaining biological assets and through employment by facilitating empowerment of the rural poor and by reducing vulnerability to environmental depletion, gradation and disasters. Furthermore, CEPF support to addressing the causal mechanisms that trigger biodiversity loss will, in many contexts, also affect the underlying causes of rural poverty[xxv]. Strategic planning, targeted investments, capable institutions, a supportive policy context, and thoughtful governance are necessary to implement actions that support conservation and poverty reduction[xxvi]. Improving resource management and building strong, transparent institutions that can help regulate complex rural sector dynamics, will often therefore support both poverty reduction and biodiversity conservation. CEPF's attention to capacity building and the strengthening and engagement of civil society will have ripple affects to other sectors.

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[i] Myers, N., *et. al.*, 2000.
[ii] Brooks *et. al.,* 2002
[iii] Six of the current 25 hotspots include countries not eligible for CEPF investments.
[iv] Population density in 17 of the 25 hotspots exceeds the global average of 46.3 km^2.
[v] Estimated population change between 1995 and 2002 occurred at an average rate of 1.8% per year for the hotspots compared to 1.2% per year in growth occurring globally 1995-2002.
[vi] WDR 2000.
[vii] Ravallion, 2000.
[viii] WDR 2000.
[ix] McNeely and Scherr 2001.
[x] WDR 2000: 14.
[xi] Western and Wright 1994; Mansour and Redford 1996; Brandon 1998; 2000; 2002.
[xii] Brundtland, 1987.
[xiii] Reardon and Vosti World Development 23 (9): 1495-1506.
[xiv] Reardon and Vosti World Development 23 (9): 1495-1506 call "welfare poverty".
[xv] Draws on the work of Sen (1981); Leach and Mearns 1991 chap 2.2 page 2.
[xvi] Sanderson & Redford, 1997.
[xvii] The MDGs specify a list of 8 goals and 18 targets that are required to address the different dimensions of poverty.
[xviii] Thomas *et. al.,* 2004.
[xix] e.g. Pound, B. et. al. (eds.)2003. Gibson, Clark, MA. McKean, and E. Ostrom (eds.). 2000.
[xx] Carret 2003.
[xxi] An additional 25,000 urban households benefited from potable water
[xxii] Working for Water Program: http://www-dwaf.pwv.gov.za/wfw/
[xxiii]There are often unrealistic expectations about how much protein can sustainably derive from forests (see DFID 2002 as an example).
[xxiv] Finan e*t al.,* 2002.
[xxv] Barrett *et al.* 2001, Brandon *et al.* 1998
[xxvi] Chomitz *et al*. 2004, Barrett *et al.* 2001.