

An Overview of CEPF's Portfolio in the Eastern Arc Mountains and Coastal Forests of Tanzania and Kenya

The Eastern Arc Mountains and Coastal Forests of Tanzania and Kenya hold a great concentration of endemic plant and vertebrate species per unit area, juxtaposed with a severe degree of threat. Combined, these factors mean this region is likely to suffer some of the most plant and vertebrate extinctions for a given loss of habitat. The remaining forests are irreplaceable in every sense of the word.

The region straddles two ecoregions, which have distinct composition as detailed below. A more comprehensive biological description is contained in the ecosystem profile.

Previously classified as a biodiversity hotspot itself, the Eastern Arc Mountains and Coastal Forests of Tanzania and Kenya region now lies within two new hotspots—the Eastern Afromontane Hotspot and the Coastal Forests of Eastern Africa Hotspot—identified as part of a global hotspots reappraisal released in 2005. CEPF investment continues to focus strictly on the geographic area comprising the original hotspot.

Biodiversity in The Eastern Arc Mountains

From the Taita Hills in southern Kenya extending south to the Udzungwa Mountains in Tanzania, this chain of ancient mountains are famous as the center of endemism of the African violet (*Saintpaulia* spp.).

Almost 40 percent of the approximately 2,000 vascular plants found here are endemic. They are located in almost all of the types of altitudinal forests, as well as in intervening habitats such as rocky outcrops, heathland, montane grasslands, and wetlands. Of those studied, non-vascular plants also show significant endemism. Predictably, there is a direct correlation between the area of forest blocks and species richness.

Faunal endemism is also extremely high for reptiles, amphibians and especially invertebrates. There are also several endemic birds and mammals, such as the Critically Endangered Tana River red colobus found only along the Tana River in Kenya. Recent research has also revealed new species of mammals within the Eastern Arc that are likely to be endemic or near endemic.

The vulnerability of several species is compounded as they have extremely limited distributions. The Kihansi spray toad, described in 1998, was known from an area of less than 1 square kilometer within the spray zone of a large waterfall on the Kihansi river but is now presumed to be extinct as a result of a hydropower facility that altered the river flow and destroyed the spray zone followed by an outbreak of the infectious chytrid fungus.

The flora and fauna of the Eastern Arc Mountains represent an interesting combination of species associated with West Africa, Madagascar and even Southeast Asia but, as an artifact of geographic isolation, has resulted in recently evolved species.

Biodiversity in the Coastal Forests

Part of the coastal forests ecoregion along the East African coast include the islands of Zanzibar (Unguja and Pemba) and comprises a mosaic of forest patches and intervening habitats. Closed canopy forest represents only 1 percent of the area but contains at least 400 endemic plant species out of the 3,000 plant species identified from coastal forests. The remaining 99 percent of the area is a heterogeneous mix including savanna woodlands, bushlands, thickets, and farmland that contain more than 500 endemic plant species. Many of the plant species are relicts of a historical connection to the Guineo-Congolian lowland forests of West Africa.

The highest biodiversity is found in the various kinds of closed canopy forest vegetation: dry forest, scrub forest, *Brachystegia (miombo)* forest, riverine forest, groundwater forest, swamp forest, and coastal/afromontane transition forest. In total, there are more than 4,500 plant species and 1,050 plant genera. Single site endemism and disjunct distributions are common, illustrated by the fact that a substantial proportion of the endemic plants are confined to a single forest.

Unlike in other hotspots, these forests and the prevalence of endemic species are the result of geographic isolation. Thus recreating biodiversity conservation corridors between sites is not appropriate, however the current degree of fragmentation of forests within individual sites poses a significant threat to the conservation of species. With this in mind, increasing connectivity between remnant fragments is vital.

Threats

The most prevalent threat to the remaining forests within the Eastern Arc Mountains and Coastal Forests is habitat destruction leading to fragmentation and loss of remaining habitats for many known (and unknown) globally threatened species.

There are four main threats that, combined, place significant pressure on the remaining forest fragments:

- Agriculture;
- Commercial timber extraction;
- Mining; and
- Fires.

There are several, yet intrinsically linked root causes of these threats. Burgeoning human population exerting pressure on forest resources and land; poverty leading to unsustainable use of forest resources; lack of strategic management and action plans; under-resourced government institutions; a legacy of outdated environmental policies and legislation; and lack of political will all combine to undervalue forests and the ecosystem services that they provide.

On the positive side, these problems are widely recognized and various initiatives (including institutional, policy and legislative reforms) have been launched to address

them. Government, local community and private sector are on the cusp of change in Tanzania and Kenya. CEPF's investment will serve to foster this switch in attitudes.

CEPF Niche for Investment

Tanzania and Kenya have had a history of support in the management of natural resources, both at the national and institutional level and site-specific project activities. There is also a considerable amount of biological inventory and research activities that has been accomplished over the last century. CEPF seeks to capitalize on these achievements, bearing in mind the biological priorities and threats described above as well as past and ongoing conservation activities.

It is also extremely important to bring into the public domain the current level of understanding and knowledge, as well as the lessons learned from previous conservation approaches so that these can be interpreted back to the communities central to the future conservation of these forests, and applied elsewhere.

The ecosystem profile was developed by a team of specialists and culminated in a stakeholders' workshop to identify the most effective means to implement the available funding. Twelve themes were developed during the workshop, which were collectively debated and refined into the strategic directions, listed below, that focus CEPF investment.

The Eastern Arc Mountains and Coastal Forests was developed as part of the fourth cycle of CEPF profiles and therefore included technical support from Conservation International's Center for Applied Biodiversity Science for scientific, stakeholder-driven development of conservation outcomes at the species, site and landscape levels. Defining conservation outcomes greatly assisted the focus of CEPF's investment to ensure that these funds have the greatest impact on the most pressing conservation issues.

Species outcomes

The results of the outcome definition process indicate that 333 globally threatened (Red List) species occur in this region, with 105 species being represented in Kenya and 307 in Tanzania. The globally threatened flora and fauna are represented by 236 plant species, 29 mammal species, 28 bird species, 33 amphibian species, and seven gastropod species. Of the 333 globally threatened species, 241 are Vulnerable, 68 are Endangered and 24 are Critically Endangered.

Site outcomes

The site outcomes define the CEPF niche in terms of geographical locations. A matrix was developed overlaying the 333 globally threatened species and the top 152 sites in which these species occur. This matrix was enhanced with data from the Important Bird Areas for restricted-range bird species and globally significant congregations of birds.

Due to the small size of the region and the degree of natural fragmentation that exists, without which much of the biodiversity would never have evolved in the first place no corridor outcomes have not been defined in this profile, there are issues of connectivity between forest patches within large sites. Many bird species in the Eastern Arc Mountains are known to move seasonally from the montane forest to the lowland, and altitudinal forest corridors are necessary for this to occur. This issue particularly relates to maintaining montane to lowland forest transitions in the Eastern Arc Mountains part of

the region and is important in the context of global warming. A number of forest patches are also recently isolated from each other, causing the local extinction of species, as habitat patches become too small to support them (see below). Such sites deserve particular attention.

1. Increase the ability of local populations to benefit from and contribute to biodiversity conservation.

Poverty - the fundamental cause of unsustainable practices that degrade the environment - is compounded by issues pertaining to tenure of all resources, not just land. Activities that strive to alleviate poverty need to address culture, local economy and the resource base. CEPF aims to enable civil society organizations to promote and develop feasible alternative livelihoods. Nature-based alternatives such as commercial insects, honey and non-timber forest products that demonstrate a direct link with the forest resources lead to community protection of the forests. Improving the productivity of existing agriculture land is essential if the pressure on the forests is to be reduced. Alternatives to wood and charcoal as the main household fuels need to be proposed.

2. Restore and increase connectivity among fragmented forest patches, especially in Lower Tana River Forests; Taita Hills; East Usambaras/Tanga; and Udzungwas

Throughout the region, there is a significant risk of local extinctions as a direct result of the degree of fragmentation of the once contiguous forests in a number of locations. In all of these geographic areas we need to find creative solutions to not only arrest the current level of fragmentation, but to increase the current levels of connectivity to ensure the long-term survival of these species.

Such solutions will involve a concerted effort of all relevant stakeholders'. In each of the priority locations, local scientific knowledge should guide subsequent conservation activities in order to ensure that these efforts are targeted appropriately. Those communities most engaged in activities to re-establish connectivity also need to be assisted in recruiting additional benefits and improving livelihoods as a result of their efforts.

3. Improve biological knowledge (all 160 sites eligible)

Gaps in the current level of knowledge occur on two levels. There are a number of lesser-known sites that have not been thoroughly surveyed. There are also several species that whilst we know these to occur, many aspects of their biology and life cycles remain a mystery. It is essential to know the latter to effect appropriate conservation measures. In all activities under this strategic direction, adding value to already existing institutions in Tanzania and Kenya and providing training to nationals of these countries is a priority.

4. Establish a small grants program (all 160 sites eligible) that focuses on Critically Endangered species and small-scale efforts to increase connectivity of biologically important habitat patches

For smaller sums of money, it is envisaged that a locally established small grant fund addressing species and site outcomes would yield the most pragmatic returns. This fund would be accessible to students and community groups interested in addressing research and conservation activities within the region.

5. Develop and support efforts for further fundraising for the region

Securing long-term funding to support the institutions that are responsible for the continued protection of these forests is vital. There are several options already available and the practicality of applying these in East Africa will be explored. As part of the GEF/UNDP project a trust fund for the Eastern Arc Mountains of Tanzania will be established. There may be opportunities to develop a similar fund for the Coastal Forests. Opportunities under the Kyoto Protocol may also provide a means to support long-term funding.

In addition to the identification of the strategic directions outlined above, each strategic direction has further refined investment guidance provided through investment priorities, which are more specific and concrete. The investment priorities provide more specific targets for CEPF funding in the region and are used to inform grantmaking decisions. They are included as part of the full investment priority table in the ecosystem profile and on the CEPF Web site (www.cepf.net).

The Eastern Arc and Coastal Forests region was approved for grant funding by the CEPF Donor Council in July 2003 with a total allocation of \$7 million. CEPF's investment in the Eastern Arc Mountains and Coastal Forests was one of the most highly anticipated sources of funds for biodiversity conservation, a direct result of the consultative nature of developing the ecosystem profile. As a result, CEPF was been inundated with applications, even prior to approval of the ecosystem profile by the Council. Active grantmaking started in January 2004. The time between Donor Council approval and awarding the first grant was spent ensuring implementation began with the important first step of developing a Coordination Unit to provide right representation in both Tanzania and Kenya.

To date, CEPF has awarded 23 grants valued at \$1.51 million (see Chart 1 included at the end of the overview). These grants range in size from \$7,153 to \$700,000 with the average grant size being \$70,132 (see list of grants). The full status of the portfolio to date and the timeline of grants awarded are illustrated in Charts 3 and 4.

Coordinating CEPF Grantmaking on the Ground

Building on CEPF experiences in other hotspots, CEPF established a locally based coordination unit to act as the “eyes and ears” in the region. For the Eastern Arc and Coastal Forest, four organizations that were the lynch pins in developing the ecosystem profile combined to create the coordination unit. This reinforced the continuity and momentum from the development of the ecosystem profile into grantmaking. The Coordination Unit in this region was modeled on the Succulent Karoo coordination body.

The goal of the Coordination Unit is to ensure that: “the biodiversity of the Eastern Arc and Coastal Forests is conserved in perpetuity, with no further species extinctions, through a combination of sound conservation science and the active engagement of civil society.” Within the coordination unit, each organization is responsible for one of the four key outputs to be delivered throughout the duration of the CEPF five-year investment as detailed.

Organization	Output
International Centre for Insect Physiology and Ecology	An Eastern Arc and Coastal Forests Coordination Unit exists with appropriate mechanisms to facilitate achievement of the Investment Priorities identified in the CEPF Ecosystem Profile.
Tanzania Forest Conservation Group	Stakeholders within civil society and government are aware of the CEPF process, goals, and achievements and are sharing experiences.
World Wide Fund for Nature East Africa Regional and Tanzania programme offices	Civil society stakeholders supported to design effective conservation projects in line with the CEPF ecosystem profile and submit proposals to CEPF.
BirdLife in conjunction with its national partner organizations NatureKenya and Wildlife Conservation Society of Tanzania	A comprehensive and complementary suite of CEPF projects (within budget) is in place to fully address the strategic directions and investment priorities in the ecosystem profile.

This union of four important organizations is unique in the region and is an example of the whole being greater than the sum of the individual parts. In addition, one of the greatest strengths of the coordination unit has been the links with many other organizations and individuals, which ensure that CEPF's funds are implemented appropriately: complimenting ongoing activities and making the best use of the funding available.

Community consultation meetings

Assisting civil society forms the core of CEPF's investment in implementing CEPF in the Eastern Arc and Coastal Forests. In order to ensure that civil society organizations, especially community-based organizations were alerted to the opportunity, a series of 4 community consultative meeting were held through out the region in Mombasa, Dar es Salaam, Morogoro and Tanga.

The series of meetings served to introduce CEPF to communities and describe the application procedure, as well as work with potential grantees to develop their ideas and assist in drafting letters of inquiry. These consultative meetings were then followed up by a series of training of trainers' workshops that provided further assistance to community representatives in developing ideas for submission to CEPF. There have been remarkable results from the combination of consulting with community groups and ensuring that there are people able to assist with developing Letters of Inquiry.

Review process

In order to ensure the most appropriate use of the available funds a transparent, objective, and efficient review process was developed in a consultative manner and is used to guide investment. The CEPF Coordination Unit and CEPF review each Letter of Inquiry. Most applications are also reviewed by at least two external reviewers with expertise relevant to the proposed project.

Reviewers look at:

- the relevance of the application to the Strategic Directions and fit to the investment priorities;
- the capacity of the organization applying to implement the proposed activities including the quality of partnerships;
- the project's impact on conservation outcomes (this is considered in relation to the proposed budget and to CEPF's five-year perspectives) and;
- the coherence of the proposed project.

In addition to the review process, the Coordination Unit also developed a communication strategy to ensure that CEPF's message and approach are consistent and reaching relevant sectors of society.

Working through Alliances

It has been extremely fortuitous that, at the same time as CEPF investment launched, the GEF-UNDP Conservation and Management of the Eastern Arc Mountain Forests (CMEAMF GEF-UNDP: URT/01/G32) is being implemented concurrently. From the outset, CMEAMF and CEPF have blending proposed outputs of both sets of investment to deliver enhanced conservation outcomes. The Coordination Unit has developed extremely close ties with the national coordinator and chief technical advisor who sit on CEPF's steering committee and Coordination Unit for this region. The technical support and assistance and input provided by this project have been invaluable.

There are further opportunities for alliances through the WWF Eastern Africa Coastal Forests Ecoregional Programme supported by the GEF Medium Sized Project for the Kwale District. Similar to the collaboration with the CMEAMF, there are considerable links and opportunities for co-funding between the two projects, enhanced by two members of the CEPF Coordination Unit sitting on the National and Regional Coastal Forest task Forces for this programme.

USAID through the Forestry/Range Rehabilitation and Environmental Management Strengthening Initiative is also active at Arabuko Sokoke Forest on Kenya's northern coast, supporting livelihoods and participatory forest management, in addition to funding a live forest exhibit/ecotourist attraction in Mombasa for the National Museums of Kenya. This exhibit will provide market outlets for CEPF-supported livelihood initiatives, in addition to being an awareness-raising and educational center for the region.

CEPF has developed strong links with the Japanese Bank for International Cooperation (JBIC), especially regarding the possible re-establishment of the Tana Delta Irrigation Scheme. The lower Tana forests are a priority area, especially to ensure the long-term survival of the endemic red colobus and Tana Delta mangabey. An environmental impact assessment has been funded by CEPF to investigate three main areas:

- socioeconomic survey;
- botanical, forest health and assessment of increasing connectivity; and
- a survey of primate groups in the 23 forest blocks that would be affected by the re-establishment of the project.

The recommendations from this report will ideally influence how the re-establishment of the irrigation project will be undertaken to improve local livelihoods and forest health, and ensure the survival of the primates as flagship species.

In addition to the alliances with GEF and JBIC, CEPF has also been successful in securing funding from Conservation International's Global Conservation Fund (GCF) to contribute to the compensation scheme for the cardamom farmers. The GCF contribution is vital to leverage additional funds from World Bank and Finnish Government.

CEPF is also looking at opportunities to engage with the private sector that have considerable influence throughout the region. Sisal, tea and coffee estates have a number of important forests blocks in both the Eastern Arc Mountain range and the coastal strip. There are several mining operations whose activities – if implemented appropriately - could also mitigate the potential to eliminate some of the most important fragments of remaining forests.

CEPF Approach to Grantmaking

After little more than a year into implementation, CEPF has received 230 applications for funding throughout the region and beyond. This vast number is largely a result of two things: 1) the anticipation preceding the launch of CEPF as a result of the stakeholder-driven profiling process within the region and 2) the effectiveness of the community consultations and training of trainers workshops held in mid-2004.

Site-specific workshops

Two priority areas—the Udzungwas Mountains and the Taita Hills—received particular interest from all sectors. In general, the individual proposals represented a discordant mix of research activities and social and livelihood aspects.

In a bid to clarify the situation for both these geographic areas, CEPF supported workshops that brought together the main actors involved with these areas to identify conservation priorities and outline the most effective means to move forward.

Both of these workshops helped clarify the most effective approaches for CEPF and others to invest in and improve the conservation status of these areas and integrate with ongoing activities.

Box 1: Udzungwa Mountains National Park Workshop

The Udzungwa Mountains lie at the eastern end of a chain of 14 mountain blocks supporting ancient rain forests with globally important levels of endemism for plants and animals. By virtue of the biological importance the Government of Tanzania gazetted the 1,990-square-kilometer Udzungwa Mountains National Park (UMNP) in 1992.

In order to identify priority activities that would enhance conservation in the Udzungwa Mountains a stakeholders' workshop was held 15 –17 December 2004 in Morogoro, Tanzania. The workshop was convened by World Wide Fund for Nature's Tanzania Programme Office (WWF-TPO) and supported by CEPF, the UNDP/GEF-funded project "Conservation and Management of the Eastern Arc Mountain Forests," and the Forest and Beekeeping Division and Tanzanian National Parks Authority of the Tanzanian Ministry of Natural Resources and Tourism. It was the first meeting of its kind for this region of Tanzania.

The 45 participants at the workshop comprised representatives from local communities, local government, Tanzanian national authorities, and biological researchers, as well as commercial operations including Kilombero Valley Teak Company and Illovo Sugar Company. Non-governmental organizations including WWF-TPO, the Tanzanian Forest Conservation Group (TFCG) and the Wildlife Conservation Society (WCS) were also present.

The workshop focused on four biologically important areas around the UMNP:

- lowland Magombera Forest (important for *Iringa* red colobus) and its connections to the Selous Game Reserve;
- Uzungwa Scarp Forest Reserve, which was included in the original early 1980s proposal for UMNP;
- Ndundulu and Nyumbanitu forests within the West Kilombero Scarp Forest Reserve, which are adjacent to UMNP western boundaries and contain several endemic species that do not occur in the park; and
- large mammal movement corridors between UMNP and Mikumi National Park and the Selous Game Reserve.

Workshop participants were tasked to provide information on the current status of each area, list the relevant stakeholders, list conservation problems and solutions and finally propose projects that could be funded to tackle the conservation problems.

Successfully implementing the recommendations – through CEPF and other donors - will enhance the conservation status of the Udzungwa Mountains and surrounding area.

Whilst many of the applications received have been reworked based upon comments received during the review process, there have been a number of small grants awarded. These include grants to address emerging problems as well as pilot projects that prelude larger investments bearing in mind the lessons learned.

Small grants awarded to date include:

- Socioeconomic and primate surveys in the Lower Tana River Forests, providing essential background information for connectivity interventions supported by the Japanese Bank for International Cooperation;
- Carbon storage studies at Arabuko-Sokoke and the Lower Tana River Forests, providing baseline information for accessing carbon trading funds; and
- Workshops in the Taita Hills and Udzungwa mountains to resolve overlapping proposals and contentious issues.

Cornerstone projects

In addition to the Coordination Unit, there are a number of other projects being put in place that will underpin CEPF's investment to ensure that the implementation of the portfolio has a sustainable and far-reaching impact.

Monitoring process

BirdLife International and its respective national partners will undertake a region-wide monitoring process. This project, to a large extent, represents a regional Center for Biodiversity Conservation and will monitor the success of CEPF investment and integrate with other ongoing large-scale monitoring programs active in the region. This project includes the development of a forest change map that will provide detailed information on the rate and scale of forest change and serve to re-orientate CEPF investment to the most threatened areas and track CEPF and partner institution progress toward achieving the conservation outcomes through maintaining the outcomes database. This work will be undertaken in collaboration and with assistance from the Eastern Arc Mountain Forests Conservation and Management Project (CMEAMF - Eastern Arc Mountains) and WWF (Coastal Forests).

Red listing of plants

Despite many years of botanical research, the conservation status of many of the species, especially species with limited range, in this region is poorly known. This joint project between Missouri Botanical Gardens and IUCN – The World Conservation Union makes the best use of the respective skills in assessing and ratifying the conservation status of plant species. Far from undertaking the assessment independently, data from several botanical inventory projects will feed into this umbrella project for inclusion in the red listing process. These data in turn will contribute to the outcomes database.

Journal of East African Natural History

The ecosystem profile places a strong emphasis on improving biological knowledge within the Eastern Arc Mountains and Coastal Forests and there are a number of inventory projects for lesser known sites and species throughout the region. However, it is vital that these data are accessible to all interested parties. CEPF is in the final stages of approving a grant to the East African Natural History Society that will support four thematic issues of the Journal of East African Natural History relevant to the region. This grant also requires that all relevant articles since 1910 be published on the Internet as PDF files, vastly increasing the access to this historic journal. The information contained can then be used in interpreting research findings for use in awareness and education programs.

Future Developments

After a year rationalizing the applications and liaising closely with the potential grantees the positioning of CEPF within the donor and conservation sectors, CEPF is poised to implement a number of large projects. These projects will build upon the criteria established above and incorporate the findings of the site-specific workshops and pilot projects.

Alternative nature-based livelihoods

There are several successful examples of nature-based alternative livelihood activities established in the region and elsewhere that promote sustainable livelihoods. ICIPE, in partnership with locally based organizations, will lead a project that will focus on

promoting alternative, nature-based livelihood opportunities. It will focus on the priority sites identified within the ecosystem profile and develop synergies with connectivity projects in Tana River communities to support forest conservation and to establish and maintain connectivity in these important sites, Taita Hills, and East Usambara Forests. The project will initiate and support community-based income generating activities, such as sustainable beekeeping, wild silk and medicinal plant enterprises.

Small grants program

Strategic Direction 4 calls for the establishment of a small grants program with the following foci:

- Support targeted efforts to increase connectivity of biologically important habitat patches.
- Support efforts to increase biological knowledge of the sites and to conserve Critically Endangered species.

Experience, particularly in the GEF, shows that small grants can be cost effective. Small grants will be made available through CEPF for community-based organizations, researchers, and NGOs working to save Critically Endangered species and threatened sites in this region. The Coordination Unit is submitting a proposal to administer this Small Grants Program in consultation with CEPF, with a project-funding ceiling of \$20,000. This level of small grants program would support a range of projects not currently supported by other donors. Such sums can be extremely helpful in supporting low-cost research, and are particularly suitable for postgraduate student projects that can build local capacity. They can also be swiftly funded on the basis of a high quality Letter of Inquiry, without the need to develop a full proposal.

Micro (community) grants program

The above small grants program makes little provision for funds that will enable communities to apply for funding for small-scale livelihood, land-use planning and development of local economies. To this end, it is anticipated that part of Strategic Direction 1 will be used to establish a micro grants scheme that will be locally managed through the Coordination Unit.

These micro grants will be locally administered and accompanied with training and assistance in reporting and accounting as needed. In developing this proposal the applicants have been trying to develop the most appropriate methods of reporting, including the suggestion that community groups can report on their progress using annotated pictures.

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March 2005 Charts: Eastern Arc Mountains and Coastal Forests of Tanzania and Kenya

Chart 1. Approved Grants by Strategic Direction

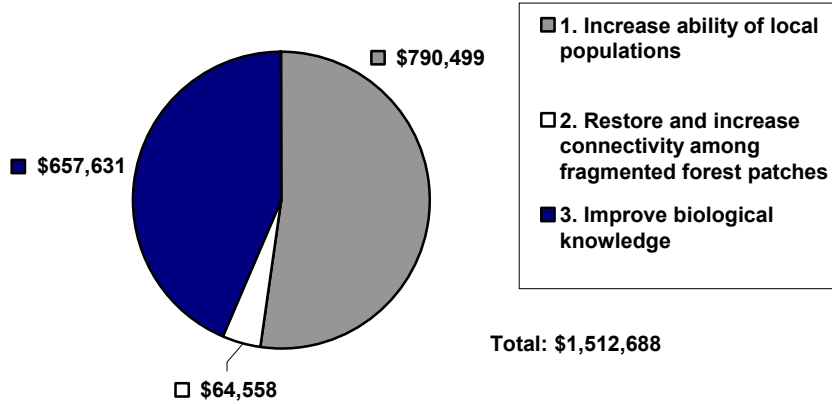


Chart 2. Portfolio Status by Strategic Direction

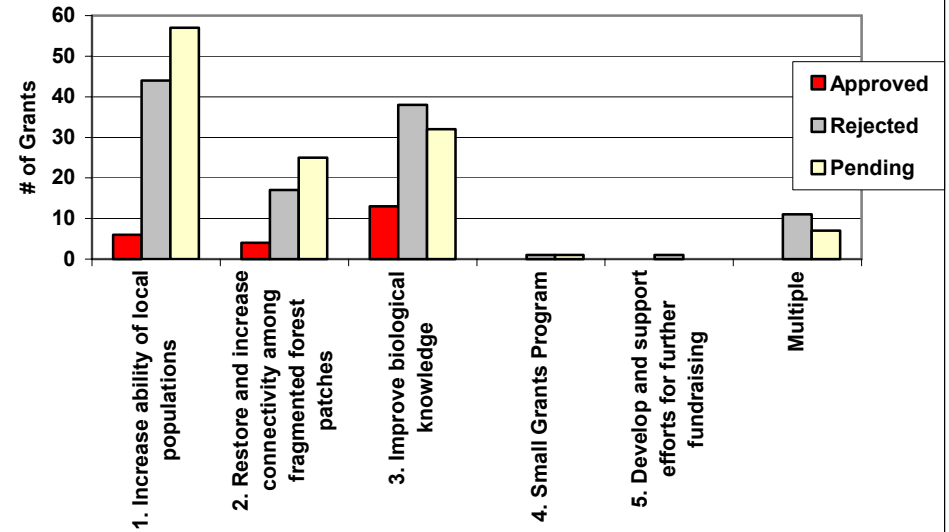


Chart 3. Combined Value of Grants Awarded

