

Cerrado Ecosystem

Profile Summary



About CEPF

Established in 2000, the Critical Ecosystem Partnership Fund (CEPF) is a global leader in enabling civil society to participate in and influence the conservation of some of the world's most biologically rich yet threatened ecosystems. CEPF is a joint initiative of l'Agence Française de Développement (AFD), Conservation International, the European Union, the Global Environment Facility (GEF), the Government of Japan, the John D. and Catherine T. MacArthur Foundation and the World Bank. The organization is unique among funding mechanisms in that it focuses on high-priority biological areas rather than political boundaries, and examines conservation threats on a landscape scale. From this perspective, CEPF seeks to identify and support a regional, rather than a national, approach to achieving conservation outcomes, and engages a wide range of public and private institutions to address conservation needs through coordinated efforts.

The Hotspot

Covering over 2 million square kilometers, the Cerrado biodiversity hotspot is one of the world's largest hotspots and biologically richest savanna regions. The hotspot lies mainly within Brazil and extends marginally into neighboring parts of Bolivia and Paraguay.

The diverse ecosystems of the Cerrado are home to a great variety of species, including many found nowhere else in the world. Among the endemic species in the Cerrado Hotspot are *Caryocar brasiliense*, a culturally and economically important fruit tree known as *pequi*, and *Syngonanthus nitens*, called “golden grass,” which is widespread in the Cerrado and is used to make regional handicrafts.

In addition to its high biodiversity, the Cerrado supports human populations both within and outside of the hotspot's boundaries. Locally, its biodiversity resources underpin the livelihoods of the millions of family farmers, traditional communities and indigenous peoples in the Cerrado. The ecosystem services delivered by the hotspot are even more far reaching. The Cerrado is one of the world's largest producers of livestock and agricultural products, and accounts for 30 percent of Brazil's gross domestic product. From a hydrological perspective, the ecology of the Pantanal, the largest wetland in the world, depends on water flowing from the Cerrado, while most of the Amazon River's southern tributaries originate in the hotspot. The Cerrado also provides much of southern Brazil with water for human and agricultural use through surface flow, groundwater recharge and atmospheric flows of water vapor. The Cerrado also has vast amounts of carbon stored in its forests, including the deep roots that the forests' trees need to survive the long dry season.



View of mountains from Chapada dos Veadeiros National Park, Goiás, Brazil
© Conservation International/photo by P. Poncelet

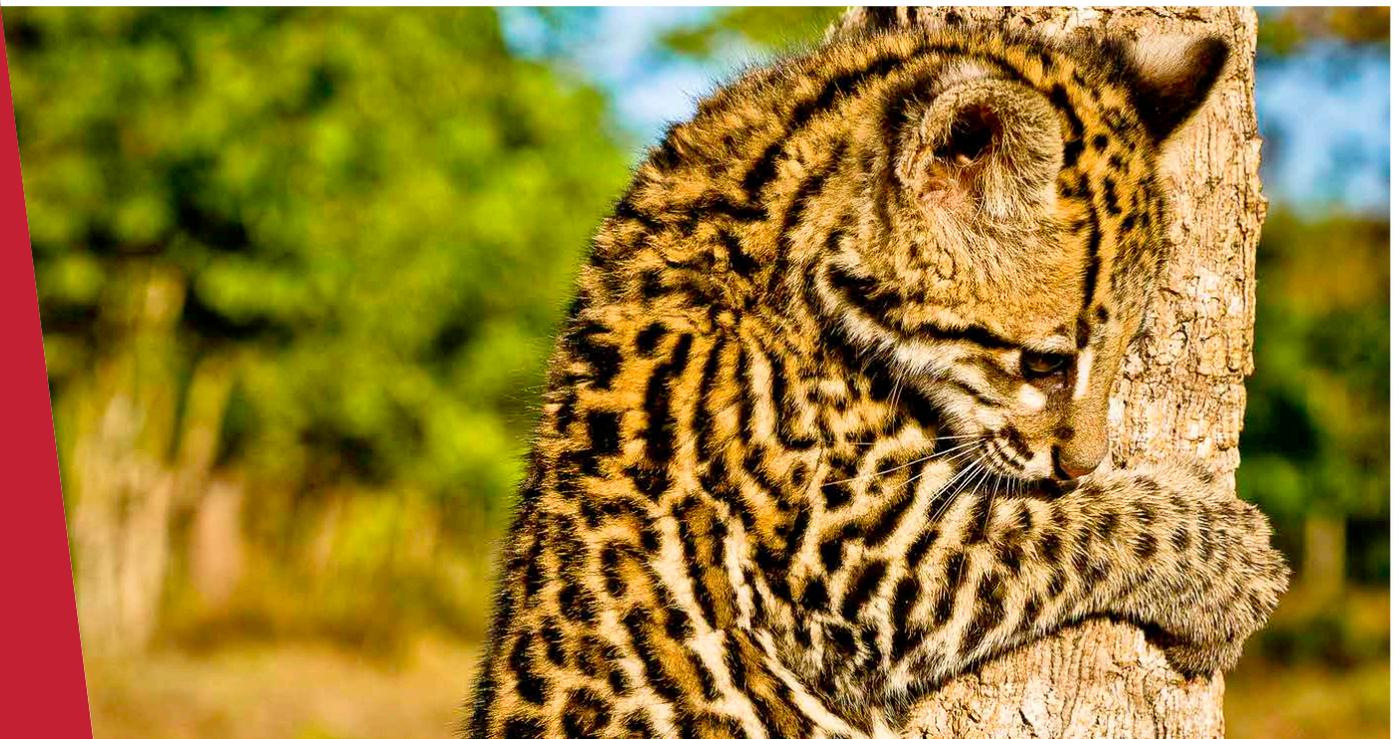
The economic development of the Cerrado is putting pressure on both local communities and natural ecosystems through continued conversion of land for crops and ranching. By some accounts, deforestation in the Cerrado is now responsible for greater emissions of greenhouse gases than forest loss in the Amazon. By 2010, 47 percent of the hotspot's land had already been converted for human land uses. This problem is exacerbated by the fact that the Cerrado has one of the lowest levels of protection of any hotspot, with only 8 percent of the land area protected.

The extreme biological richness of the hotspot combined with the alarming rate of land conversion in the area means urgent action must be taken to ensure environmental sustainability and the well-being of human societies.

Biological Importance of the Cerrado Hotspot

The Cerrado is the largest tropical savanna region in South America. The hotspot's tropical climate is characterized by a rainy season followed by a dry season in which almost no precipitation falls. Annual rainfall averages between 600 and 2,000 millimeters, while average annual temperatures range between 22 and 27 degrees Celsius.

In addition to climate, Cerrado biodiversity is influenced by altitude and topography. The core area of the Cerrado consists of vast plateaus between 300 and 1,600 meters in elevation. These structures primarily support savanna formations, separated by a network of lower-lying plains. They, in turn, support 15 different vegetation types, including various kinds of woodland, scrubland and grassland.



Endangered little spotted cat (*Leopardus tigrinus*)
© Bento Viana/ISPN

Although more extensive surveys are required to catalog the enormous variety of species in the Cerrado, the hotspot is estimated to contain over 12,000 plant species, with over one-third of these endemic to the area. The region also contains at least 2,373 vertebrate species, approximately one-fifth of which are endemic. The Cerrado is home to a few iconic large mammals, including South America's largest canid and felid: the maned wolf (*Chrysocyon brachyurus*) and the jaguar (*Panthera onca*), respectively. The Cerrado is also home to the giant armadillo (*Priodontes maximus*), the most impressive member of the Cerrado armadillo fauna. Maned wolf, jaguar and giant armadillo numbers are all shrinking due to habitat destruction and fragmentation, and to direct threats such as illegal hunting.

A recent survey showed that, between 1998 and 2008, a total of 1,300 new vertebrate species were described in Brazil. Of these, 347 vertebrate species were found in the Cerrado, including 222 new fishes, 40 amphibians, 57 reptiles, 27 mammals and one bird. These numbers indicate the colossal biological importance of the region.

Threats

The main threat to biodiversity in the Cerrado is the clearing of land for pasture and monocultures, which involve growing single crops on an industrial scale. Production of commodities for consumption within Brazil and for export is essential, not only for the country's economy but for its food security as well. In the last five decades the Cerrado has been the main area for agricultural expansion and consolidation of Brazilian agribusiness, leading to the loss of half of the hotspot's original vegetation cover. Most of the remaining original vegetation cover has been subject to various kinds of interference. While the Brazilian Forest Code provides for the designation of Areas of Permanent Preservation and Legal Reserves, these will become isolated fragments if deforestation in the Cerrado continues at its current pace.



Eucalyptus plantation, Goiás, Brazil
© Conservation International/photo by P. Poncelet

The Cerrado has been chosen as the main productive region by the Brazilian government. The deforestation levels in the Cerrado are currently higher than in the Amazon, as are the levels of greenhouse gas emissions. Although the Cerrado has few dense forests, it is equally or more important in terms of its biodiversity and its water and carbon services.

Development of the Ecosystem Profile

For each hotspot to be funded, CEPF uses a process of developing “ecosystem profiles” to identify and articulate an investment strategy. Each ecosystem profile reflects a rapid assessment of biological priorities and the underlying causes of biodiversity loss within particular ecosystems.

Between October 2014 and October 2015, Conservation International – Brazil and the Institute for Society, Population and Nature carried out a process of input, analysis and recommendations, involving more than 170 stakeholders. The information was then synthesized into an ecosystem profile for the Cerrado Hotspot. As part of this process, five consultation workshops were held, with the attendance of civil society organizations, the business sector, researchers and government institutions. These consultations provided participants with an opportunity to help identify conservation priorities and to jointly lay out a strategic framework for the implementation of CEPF’s conservation grant-making program in the hotspot over a five-year period, from 2016 to 2021. This situational analysis helped develop a series of investment priorities grouped into strategic directions which, when coupled with priority sites and corridors, provide a lens for CEPF’s investment in the hotspot.



Women processing pequi fruit (*Caryocar brasiliense*)
© Bento Viana/ISPN

Conservation Outcomes

CEPF uses conservation outcomes, or biological targets, to determine its geographic and taxonomic focus for investment and to then measure the success of those investments.

Conservation outcomes can be defined at three scales—species, site and corridor—that interlock geographically through the presence of species at sites, which then fit into corridors. They are also logically connected: If species are to be conserved, the sites at which they occur must be protected; if these sites are to provide vital ecosystem services, ecological integrity must be maintained at the landscape scale.

Defining conservation outcomes is a bottom-up process, with definition of species-level targets first. The process requires detailed knowledge of the conservation status of individual species. Based on the International Union for the Conservation of Nature (IUCN) Red List and the National Red List for Brazil, which has a more complete and updated catalog of the Cerrado's flora and fauna, it was estimated that at least 980 species are threatened with extinction within the hotspot. Because only 10 percent of the Cerrado's plant species have been evaluated, this number is surely an underestimate. In addition, 649 rare species that were identified in two studies looking at plants and fish with a restricted geographical distribution were also considered conservation targets, bringing the total of target species to 1,629.

During the ecosystem profiling process, existing lists of Key Biodiversity Areas (KBAs) within Brazil and Important Bird Areas (IBAs) within Bolivia and Paraguay were built upon and updated using the newest available data. The final result from this process was a map that included 761 KBAs in Brazil, plus one IBA in Bolivia and three IBAs in Paraguay. These 765 sites account for roughly 60 percent of the Cerrado's area. The sites in Bolivia and Paraguay each benefit from some form of environmental protection, and therefore, they are considered to face fewer threats than most KBAs in Brazil, 90 percent of which have no protection.



Damselfly along the Preto River, Goiás, Brazil
© Conservation International/photo by P. Poncelet

Besides documenting the intrinsic biodiversity values for each area, Brazil's 761 KBAs were evaluated for their contribution to hydrological services, such as water usage for livestock, industry, irrigation, and other urban and rural purposes. Using this evaluation metric, 152 of Brazil's KBAs were considered to be of very high importance for hydrological services. All of these 152 areas are in or near major agricultural or urban areas, where demand for water is highest.

Based on examining clusters of KBAs with high relative biological importance, 13 conservation corridors were identified, covering about one-third of the hotspot's area. Each of the 13 corridors has unique characteristics with different vegetation formations and areas of transition; different level of species endemism; and specific socio-economic dynamics. Each corridor requires, therefore, a specific strategy and a differentiated conservation action plan.

Current Investments

Since 1992, conservation investments in the Cerrado have been in the order of US\$10 million per year. Though this amount has, overall, increased in recent years, it is still far from sufficient to avoid serious alteration to biodiversity, hydrology and climate.

Federal programs have invested tens of millions of dollars in the hotspot mainly for social policies but with co-benefits for the environment. Other indirect investments were made by the state-owned Brazilian Agricultural Research Corporation on agrobiodiversity. The state governments in the Cerrado have also begun to invest more in the environment, although their priority continues to be economic growth, mainly with agribusiness, mining and social programs. International funding for the Cerrado came from four main sources. One of these sources, the Global Environment Facility, provided US\$13 million for the Sustainable Cerrado Initiative for promoting environmental protection and sustainable



agriculture, and also supplied US\$10 million through the Small Grants Program for projects on community-based sustainable use of biodiversity. The German government gave \$US12 million for the Cerrado–Jalapão project to address control of wildlife for climate change mitigation. The United Kingdom Department for International Development contributed US\$4.3 million for the ProCerrado Program, targeting deforestation and forest fires, as well as US\$2 million for the Conservation and Management of the Plant Biodiversity of the Cerrado Biome project. And lastly, the United States Tropical Forest Conservation Act provided funding for capacity-building and institutional strengthening. For the private sector, the Produce and Conserve Program, the Cerrado No-Till Farming Association, and the Round Table on Sustainable Soy are examples involving private companies in conservation-friendly agriculture. In general, the main concern of the private sector is with covering the costs of sustainable production.

In terms of investment gaps for conservation in the Cerrado, investing in new protected areas is and will remain relatively expensive because most of the land is privately owned. Scientific knowledge on species, deforestation, carbon stocks and water cycles is incomplete and outdated. Indigenous groups still need options for livelihoods and income generation. Civil society organizations also urgently need funding, capacity development and institutional support to participate effectively in conservation efforts.

Though the Cerrado is often eligible for funding from national and international donors, it frequently competes unsuccessfully with projects in the Amazon or Atlantic Forest for those funds. It is essential not only to mobilize more funds but also to increase the Cerrado's share of existing sources of investment for the environment and to influence investments in economic and social development for more sustainability. The private sector can certainly play a key role if the interests of producers can be reconciled with those of suppliers, buyers and traders. Mobilization of funding depends on dialogue between governments, companies and socio-environmental movements.



Freshwater river in the Cerrado
© Conservation International/photo by Sterling Zumbrunn

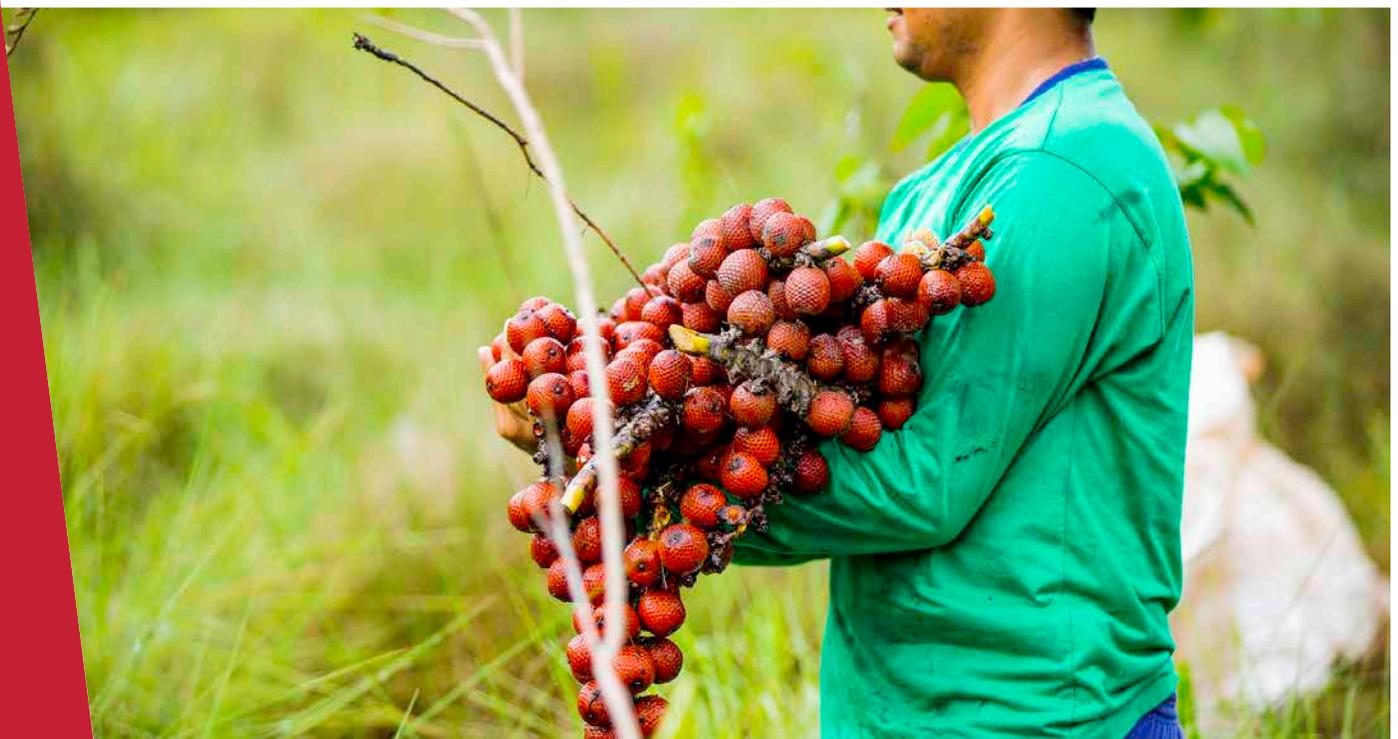
CEPF Niche

In contrast to the size of the Cerrado and the scale of the threats facing the region, funding opportunities for civil society organizations wishing to engage in conservation are currently limited. Conservation investment, therefore, must be strategic. The CEPF investment will be used to leverage, enhance and amplify opportunities for financial support as well as technical cooperation within Brazil and abroad, including a tri-national focus with Bolivia and Paraguay when appropriate.

The highest priority conservation objectives for the Cerrado over the next five years include avoiding or minimizing the amount of new land clearing, restoring degraded lands in order to recreate ecological connectivity, and expanding the network of protected areas.

In addition to the civil society groups, CEPF investment will target local communities of family farmers, indigenous and traditional peoples, and civil society networks in great need of capacity building. Private sector and government engagements are also essential for successful conservation of the Cerrado. Strengthening associations and cooperatives of producers, farmers and extractive communities; promoting the integration of sustainable production chains; and creating incentives for sustainable business initiatives will be prioritized. CEPF will also support initiatives that promote dialogue and cooperation among civil society organizations and relevant government agencies.

CEPF investments in the Cerrado are designed to have an enduring impact on the ability of civil society to positively influence public policies and private initiatives aimed at conservation and sustainable development of the hotspot. By investing in one of the most important regions for agricultural commodities in the world, CEPF will help increase the effectiveness and scale of sustainable practices by agribusinesses.

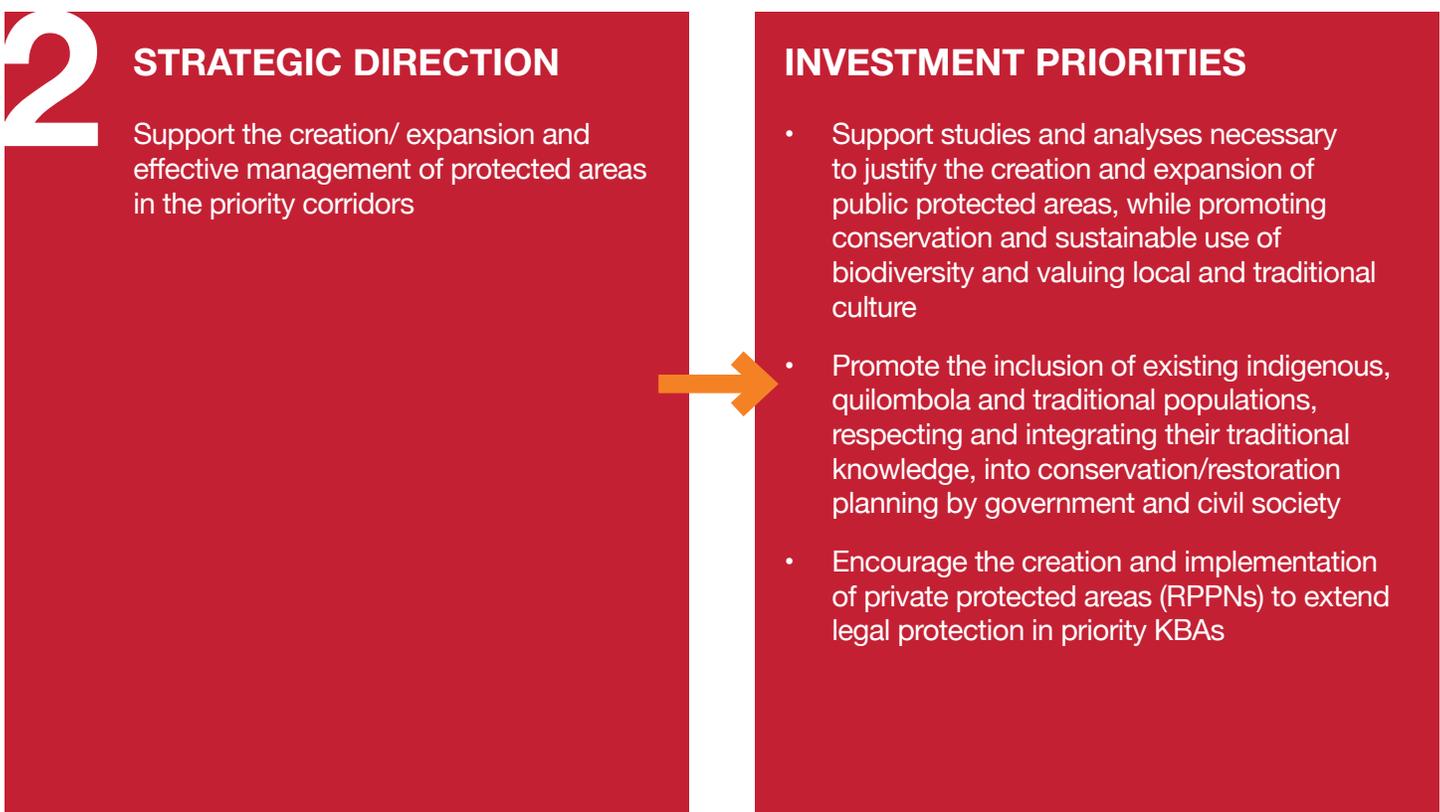
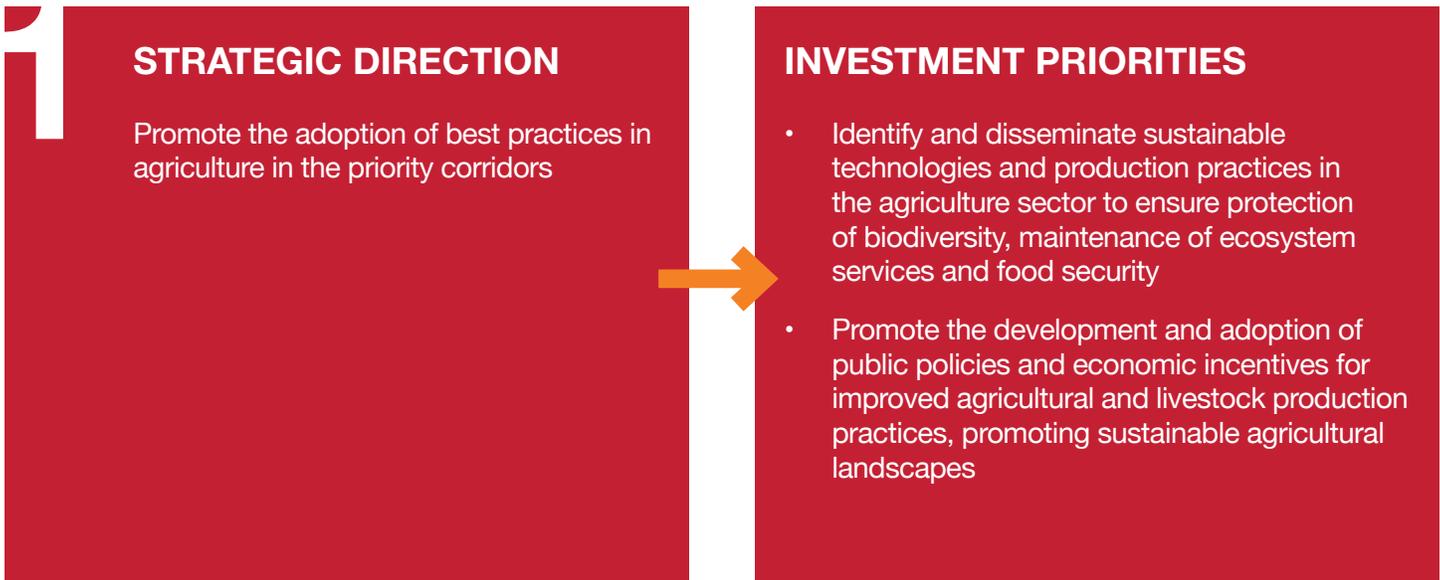


Moriche palm (*Mauritia flexuosa*)
© Bento Viana/ISPN



Typical flora near Chapada dos Veadeiros National Park vegetation, Goias, Brazil
© Conservation International/photo by P. Poncelet

CEPF Strategic Directions and Investment Priorities



3

STRATEGIC DIRECTION

Promote and strengthen supply chains associated with the sustainable use of natural resources and ecological restoration in the hotspot



INVESTMENT PRIORITIES

- Support the development of markets and supply chains for sustainably harvested non-timber products, in particular for women and youth
- Promote capacity-building initiatives in particular among seed collectors, seedlings producers and those who carry out restoration activities, to enhance technical and management skills and low-cost, ecologically appropriate technologies in the supply chain of ecological restoration
- Promote the adoption of public policies and economic incentives to expand the scale and effectiveness of conservation and restoration of Permanent Preservation Areas (APPs) and Legal Reserves (LRs), through improved productive systems that enhance ecosystem services

4

STRATEGIC DIRECTION

Support the protection of threatened species in the hotspot



INVESTMENT PRIORITIES

- Support the implementation of National Action Plans (PANs) for priority species, with a focus on habitat management and protection

5

STRATEGIC DIRECTION

Support the implementation of tools to integrate and to share data on monitoring to better inform decision-making processes in the hotspot



INVESTMENT PRIORITIES

- Support the dissemination of data on native vegetation cover and dynamics of land uses, seeking reliability and shorter time intervals between analyses and informed evidence-based decision-making
- Support the collection and dissemination of monitoring data on quantity and quality of water resources, to integrate and to share data on the main river basins in the hotspot

6

STRATEGIC DIRECTION

Strengthen the capacity of civil society organizations to promote better management of territories and of natural resources and to support other investment priorities in the hotspot



INVESTMENT PRIORITIES

- Strengthen capacities of civil society organizations to participate in collective bodies and processes related to the management of territories and natural resources
- Develop and strengthen technical and management skills of civil society organizations, on environment, conservation strategy and planning, policy advocacy, fund raising, compliance with regulations and other topics relevant to investment priorities
- Facilitate processes of dialogue and cooperation among public, private and civil society actors to identify synergies and to catalyze integrated actions and policies for the conservation and sustainable development of the Cerrado
- Disseminate information about the biological, ecological, social and cultural functions of the Cerrado to different stakeholders, including civil society leaders, decision makers, and national and international audiences

7

STRATEGIC DIRECTION

Coordinate the implementation of the investment strategy of the CEPF in the hotspot through a Regional Implementation Team



INVESTMENT PRIORITIES

- Coordinate and implement the strategy of investments of CEPF in the Cerrado, through procedures to ensure the effective use of resources and achievement of expected results
- Support and strategically guide the network of institutions responsible for the implementation of actions and projects funded by CEPF, promoting their coordination, integration, cooperation and exchange of experiences and lessons learned



A jaguar (*Panthera onca*) patrols the Brazilian Cerrado
© O. Langrand

CEPF Investments

The identification of conservation outcomes provides a long-term, overarching agenda for protecting the Cerrado's unique and valuable biodiversity. Realistically, only a fraction of these priorities can be tackled by civil society organizations over the next five years. CEPF must be strategic to make the most out of its US\$8 million investment in the Cerrado.

Therefore, the CEPF investment strategy will focus on 17 investment priorities which have been grouped into seven strategic directions. One strategic direction will support the implementation of conservation action plans, focusing on habitat management and protection for nine terrestrial and freshwater priority species, which are all listed as threatened on the IUCN Red List, from the 1,629 target species.

In addition, for two of the six other strategic directions, four corridors out of the 13 identified for the hotspot have been prioritized based on the following criteria: (i) weighted average of relative priority rankings for KBAs in the corridor; (ii) conservation investment gaps; (iii) opportunities to work with civil society; (iv) potential for leverage to sustain or amplify CEPF investments; (v) urgency of conservation actions; and (vi) natural vegetation cover. CEPF investments will concentrate on projects within those four priority corridors, which contain 62 KBAs with "Very High" relative importance for conservation: Veadeiros-Pouso Alto-Kalungas; Central de Matopiba; Sertão Veredas-Peruaçu; and Mirador-Mesas. The total area encompassed by the four priority corridors is 32.2 million hectares, representing approximately 16 percent of the entire Cerrado Hotspot. These four priority corridors have a high proportion of natural vegetation cover but little protected area coverage and low capacity to manage existing protected areas. All four corridors have a high need for additional investment, and present excellent opportunities to catalyze and amplify the results of conservation actions. The projects in these four priority corridors will be promoted with the idea of subsequent replication throughout the Cerrado by other donors and civil society organizations.



A Cerrado reforestation project
© Conservation International/photo by Olaf Zerbock

Moving Forward

The Cerrado is an area of great biodiversity value and special attention to address its conservation needs. Investment in the hotspot has been growing since the early 1990s but, despite the Cerrado's greater levels of deforestation and greenhouse gas emissions, investment in the Amazon has been much higher.

The total amount of work that needs to be done in the Cerrado is beyond the scope of CEPF's investment, so addressing conservation objectives across the region as a whole will require the combined efforts of many actors. CEPF will collaborate closely with, and encourage the involvement of, other funders, including international donors and, most important of all, the Brazilian government and the private sector.

The implementation of the CEPF investment strategy in the Cerrado biodiversity hotspot will be locally led by a regional implementation team (RIT) from the Instituto Internacional de Educação do Brasil (<http://cepfcerrado.iieb.org.br/>). The objective of the RIT is to convert the strategy into a cohesive portfolio of grants by providing local knowledge, representing CEPF in the region and building a broad constituency of civil society groups working together toward the achievement of the shared conservation goals described in the ecosystem profile.



Crossing a log bridge
© Guilherme B. Ferreira



www.cepf.net

Critical Ecosystem Partnership Fund

Conservation International
2011 Crystal Drive, Suite 500
Arlington, VA 22202 USA

cepf@conservation.org

Hyacinth macaw (*Anodorhynchus hyacinthinus*)
© Luciano Candisani/iLCP



CRITICAL ECOSYSTEM
PARTNERSHIP FUND