INDO-BURMA ECOSYSTEM PROFILE SUMMARY

CRITICAL ECOSYSTEM PARTNERSHIP FUND

ABOUT CEPF

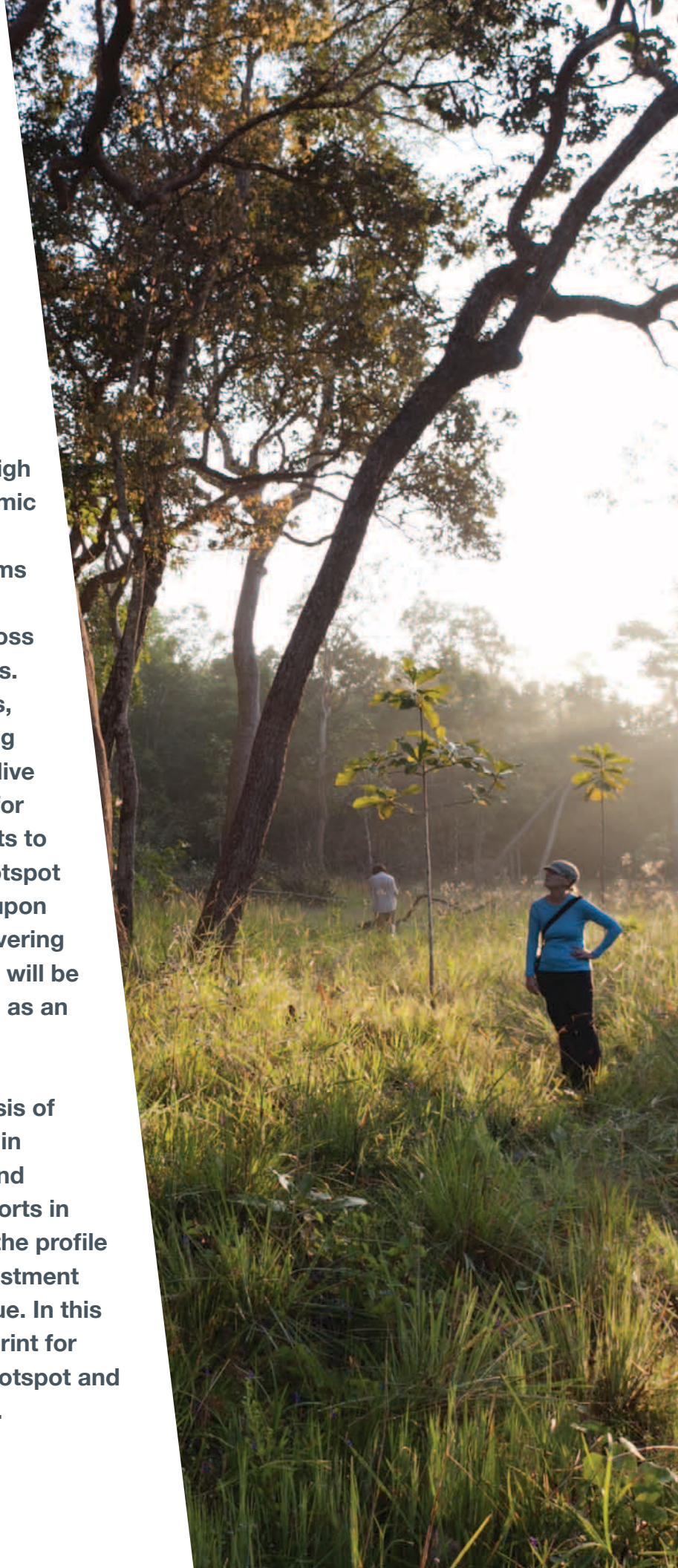
Established in 2000, the Critical Ecosystem Partnership Fund (CEPF) is a global leader in enabling civil society to participate in and influence the conservation of some of the world's most critical ecosystems. CEPF is a joint initiative of l'Agence Française de Développement (AFD), Conservation International, the European Union, the Global Environment Facility (GEF), the Government of Japan, the John D. and Catherine T. MacArthur Foundation and the World Bank. CEPF 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 regional efforts.

Cover photo: Young boy fishing in Tonle Sap at sunset, Cambodia. © Kristin Harrison & Jeremy Ginsberg
Opposite: Sunrise in the Veun Sai forest, Cambodia. © Kristin Harrison & Jeremy Ginsberg

THE HOTSPOT

In terms of species diversity and endemism, the Indo-Burma hotspot—which comprises all non-marine parts of Cambodia, Lao PDR, Myanmar, Thailand and Vietnam, plus parts of southern China—is one of the most biologically important regions of the planet. Due to high human population pressure, rapid economic development and changing consumption patterns, Indo-Burma's natural ecosystems are subject to intense pressure from degradation and fragmentation, habitat loss and over-exploitation of natural resources. Indo-Burma's unique biological attributes, as well as its importance to the well-being of the more than 330 million people who live there, led CEPF to prioritize the hotspot for investment. CEPF has been making grants to civil society groups in the Indo-Burma hotspot since July 2008, and recently embarked upon a second five-year investment phase, covering the period 2013-2018. CEPF's investment will be guided by an investment strategy, known as an 'ecosystem profile.'

The ecosystem profile presents an analysis of the context for biodiversity conservation in Indo-Burma, focused on strengthening and engaging civil society in conservation efforts in the hotspot. Within this overall strategy, the profile identifies a niche for CEPF where its investment can provide the greatest incremental value. In this way, the ecosystem profile offers a blueprint for coordinated conservation efforts in the hotspot and cooperation within the donor community.



DEVELOPMENT OF THE ECOSYSTEM PROFILE

CEPF uses a process of developing "ecosystem profiles" to identify and articulate an investment strategy for each region. Each profile reflects a rapid assessment of biological priorities and the underlying causes of biodiversity loss within particular ecosystems.

CEPF's grant making in the Indo-Burma Hotspot during 2008-2013 has been guided by an ecosystem profile developed in 2003. Major changes have occurred in the hotspot since this time, particularly in the nature and relative importance of threats to biodiversity, patterns of conservation investment and the operational space available for civil society. Recognizing these changes, the ecosystem profile was updated in 2011 as a guide to a second five-year investment phase.

The update was developed by CEPF and three private foundations with a common interest in coordinating their investments in civil society in the Greater Mekong Subregion, to which the Indo-Burma Hotspot broadly corresponds: the MacArthur Foundation; the Margaret A. Cargill Foundation; and the McKnight Foundation. The process was led by the CEPF Secretariat, in collaboration with BirdLife International *in Indochina*, the CI-China Program, Kadoorie Farm & Botanic Garden, the Samdhana Institute and the Yunnan Green Environment Development Foundation. More than 470 stakeholders were consulted, resulting in a final document that is a collaborative product of many sections of civil society, government and the donor community.

The updated ecosystem profile contains a second five-year investment strategy for CEPF in the region. This investment strategy comprises a series of strategic funding opportunities, called strategic directions, broken down into a number of investment priorities outlining the types of activities that will be eligible for CEPF funding. The ecosystem profile does not include specific project concepts. Civil society groups develop these for their applications to CEPF for grant funding.

BIOLOGICAL IMPORTANCE OF THE INDO-BURMA HOTSPOT

Spanning nearly 6,000 meters in elevation, from the coast to the summit of Mount Hkakaborazi in northern Myanmar, Indo-Burma boasts an impressive geographic diversity. The hotspot encompasses a number of complete mountain ranges, such as the Annamite and Cardamom Mountains, in addition to eastern extensions of the Himalayas. The hotspot features isolated massifs and plateaus, extensive areas of limestone karst and several of Asia's largest rivers: the Mekong; Chao Phraya; Ayeyarwady

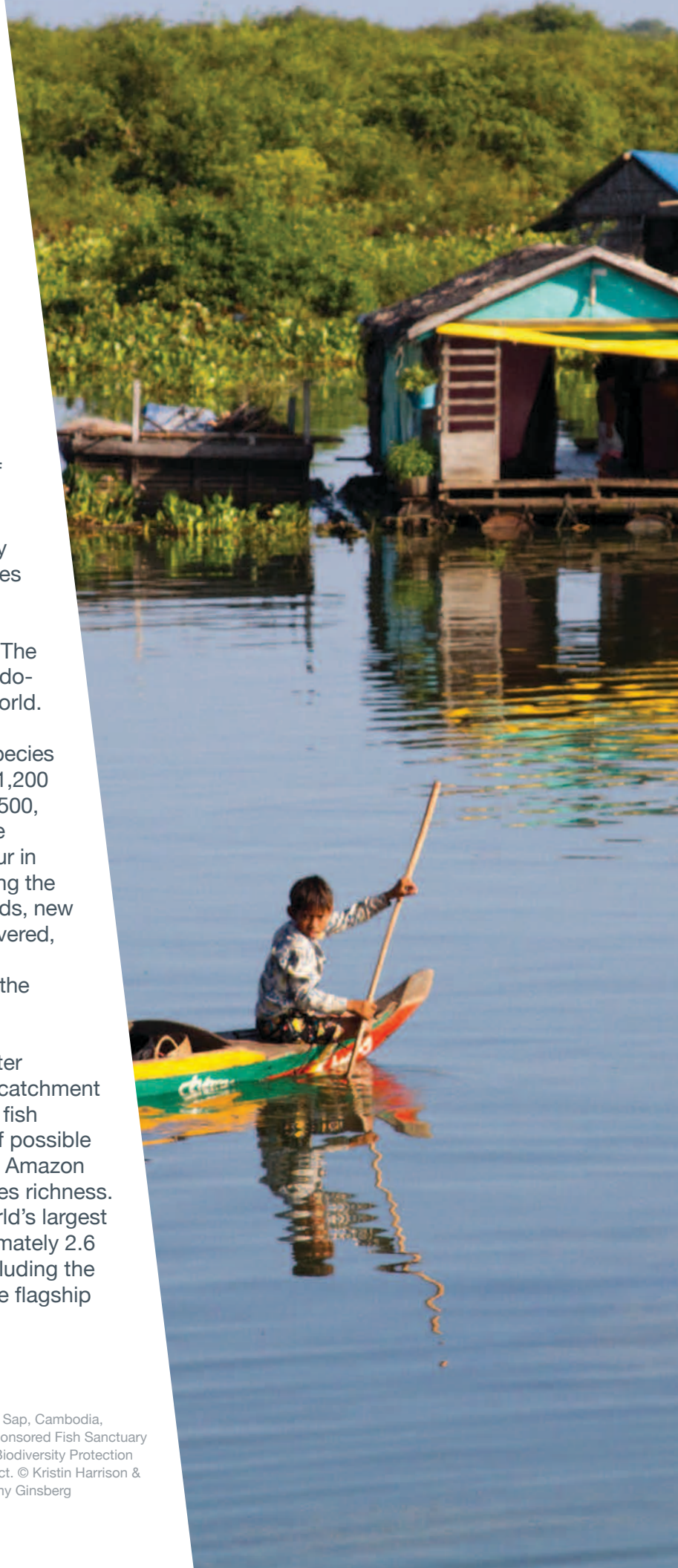
(Irrawaddy); Thanlwin (Salween); Chindwin; Sittaung; Red; and Pearl (Zhu Jiang). The hotspot's sweeping expanses of lowlands embrace several fertile floodplains and deltas, and include the Great Lake of Tonle Sap, Southeast Asia's largest and most productive freshwater lake.

Reflecting its high diversity of landforms and climatic zones, Indo-Burma supports a wide variety of habitats and thus high overall biodiversity. This diversity is enriched by the development of areas of endemism as a result of the hotspot's geological and evolutionary history. Centers of endemism are concentrated in the Annamite Mountains and the highlands of southern China and northern Vietnam.

The Indo-Burma hotspot also has extraordinarily high plant species richness. Preliminary estimates suggest that the hotspot may support 15,000 to 25,000 species of vascular plant, and that as many as half these are endemic to the hotspot. The complex merging of floras in the highlands of Indo-Burma has no parallel in any other part of the world.

Indo-Burma supports extraordinary vertebrate species richness, including more than 400 mammal and 1,200 bird species. Reptile species number more than 500, of which more than a quarter are endemic. Of the more than 300 amphibian species known to occur in the hotspot, around half are endemic. Even among the better studied groups, such as mammals and birds, new species for science are still being regularly discovered, most notably the remarkable saola *(Pseudoryx nghetinhensis)*, the flagship terrestrial species of the hotspot.

Indo-Burma also supports tremendous freshwater diversity. The Lower Mekong Basin, the largest catchment in the hotspot, supports at least 850 freshwater fish species, with a total estimate of 1,100 species if possible coastal or marine visitors are included. Only the Amazon and Congo Basins exceed the Mekong in species richness. The Lower Mekong Basin also supports the world's largest inland fishery with an annual harvest of approximately 2.6 million tonnes, as well as a fleet of giant fish including the Mekong giant catfish *(Pangasianodon gigas)*, the flagship aquatic species for the hotspot.



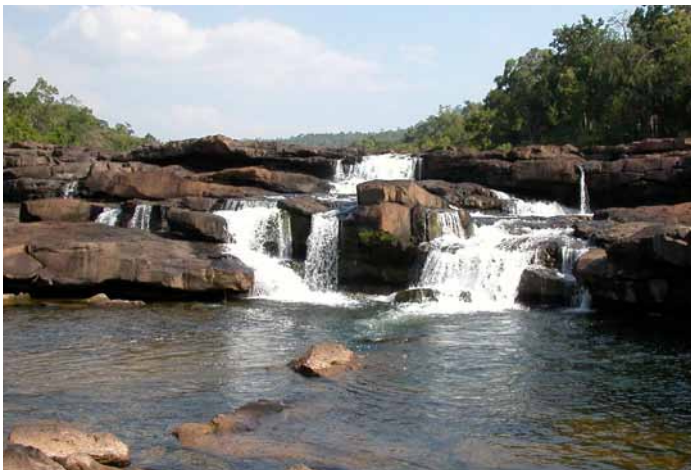
Photos left to right:

Ba Be National Park, Vietnam, in the Sino-Vietnamese Limestone corridor. © CI/Andrew W. Tordoff

Sunda pangolin *(Manis javanica)*, Cambodia. © Dan Challender/Carnivore & Pangolin Conservation Program

Tonle Sap, Cambodia, CI-sponsored Fish Sanctuary and Biodiversity Protection Project. © Kristin Harrison & Jeremy Ginsberg

CONSERVATION OUTCOMES



CEPF uses conservation outcomes, or biological targets against which the success of conservation investments can be measured, as the scientific underpinning for determining its geographic and taxonomic focus for investment. Conservation outcomes can be defined at three scales—species, site and corridor—that interlock geographically through the presence of species at sites and sites in 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. According to the IUCN Red List, 754 species in the Indo-Burma hotspot are threatened with extinction globally. These include 140 species assessed as Critically Endangered, including nine species of primate, 12 species of turtle and 33 species of dipterocarp tree, all of which have undergone massive declines as a result of over-exploitation.

Also numbered among the Critically Endangered are 25 freshwater fish, many of which are migrants, heavily depleted by over-fishing and now threatened by dam construction.

Recognizing that most species are best conserved through the protection of networks of sites at which they occur, the next step is to define site-level targets, termed Key Biodiversity Areas (KBAs). A total of 509 KBAs have been defined, covering a combined area of approximately 380,000 square kilometers or 16 percent of the hotspot. Only 303 of these KBAs (60 percent) are wholly or partly included within protected areas. This indicates that while protected area-based approaches must form an important component of any conservation strategy for the hotspot, there is also a great need for conservation action at sites outside conventional protected areas.

KBAs are the starting point for defining landscape-level targets, called conservation corridors. These are designed to maintain or establish ecological connectivity, ensure sustainable management of the landscape and increase the area of actual or potential natural habitat under protection. Sixty-six conservation corridors have been defined, covering a total area of 1,064,019 square kilometers or 46 percent of the hotspot.

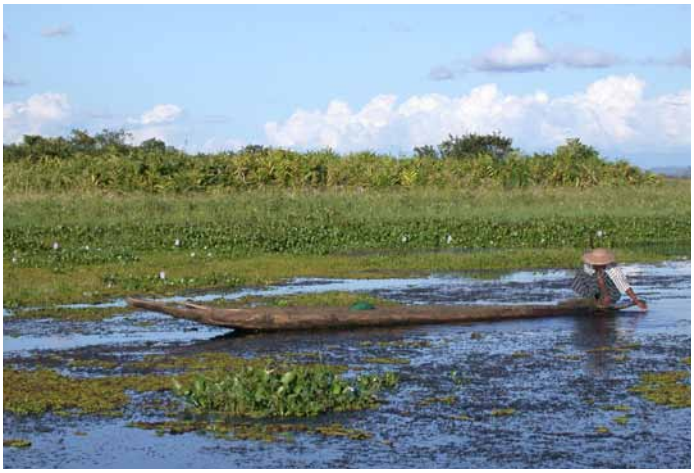
THREATS

Indo-Burma is the most threatened of the global biodiversity hotspots with immediate and severe threats facing many of its species, sites and corridors. The combination of rapid economic development and an increasing human population is

exerting enormous pressure on the hotspot's natural resources, and overexploitation has caused the local extinction of species from many areas. Existing planning and management systems are inadequate to control these pressures, and institutions responsible for the management of natural resources and biodiversity often lack the financial resources, technical expertise and incentives to fulfil their mandates effectively.

The thematic priorities for conservation investment in the hotspot were based upon an analysis of the main threats to biodiversity in the hotspot and their root causes. Hunting and trade of wildlife, which threatens individual species with extinction and impacts wider ecosystems, was ranked as the highest threat by stakeholders consulted during the ecosystem profiling process. Conversion of natural habitats to agro-industrial plantations of rubber, oil palm, tea and other cash crops was identified as the next highest threat. The proliferation of hydropower dams is the major threat to riverine ecosystems in the hotspot.

The broad consensus from the stakeholder consultations was that all three threats are getting more severe, and will continue to do so in the short-term. In every case, these threats have major implications for national economies and the livelihoods of rural people, both of which depend upon the services provided by natural ecosystems.



Photos left to right:

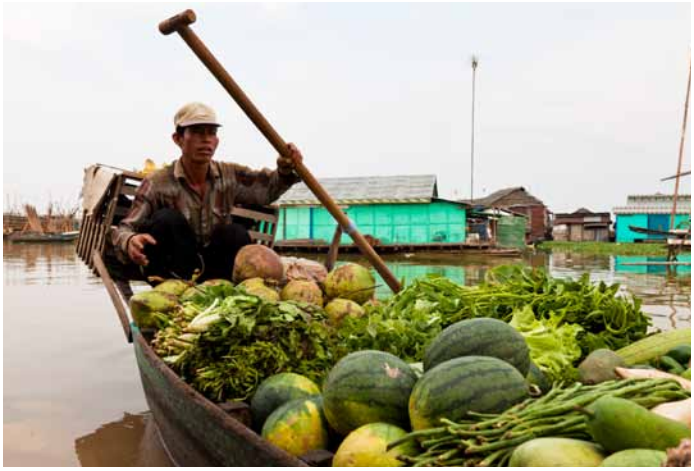
Waterfall in the Central Cardamoms, Cambodia. © CI/photo by Jake Brunner

Deforestation in the Central Cardamoms, Cambodia. © CI/photo by Jake Brunner

Boat on the Indawgyi River, Myanmar. © BirdLife International/Andrew W. Tordoff

Sarus cranes *(Grus antigone)*, the world's tallest flying birds, Cambodia. © J. C. Eames

CURRENT INVESTMENTS



Since the attention of the international conservation community was focused on the hotspot in the 1990s, and political developments enabled increased flows of overseas development assistance, most countries have benefited from significant conservation investment. The impacts of this investment include expansion of the area of each country under (at least nominal) formal protection, and development of conservation strategies of demonstrated effectiveness, albeit at limited scales.

In recent years, however, there has been a gradual reduction in the amount of funding available for biodiversity conservation as donors have shifted focus to other issues (most notably climate change) or retired from countries in the hotspot altogether. At the same time, changing political and economic conditions are facilitating greater private sector investment in hydropower, agro-industry, mining and other industries with potentially large environmental footprints. While these trends present ever-greater conservation challenges, one positive development has been the growth of domestic civil society groups engaged in biodiversity conservation and related issues of sustainable development, poverty alleviation and social equity.

Between 2006 and 2010, at least $594 million was invested in biodiversity conservation by national governments and international donors—almost half of which was made by the Hong Kong Agriculture, Fisheries and Conservation Department—focused on a tiny fraction of the hotspot by area. Excluding Hong Kong, the combined investment was at least $314 million, of which about two-fifths was contributed by national governments and three-fifths by international donors. This represents only $63 million per year spread across the six hotspot countries: a very meager amount considering the scale of threats to biodiversity.

Among multilateral donors, the main sources of international funding for biodiversity conservation are the GEF, the Asian Development Bank and the European Commission; among bilateral donors, they include the governments of Germany, the United States, Japan, Denmark and France. Private foundations are also an important source of support for conservation efforts led by civil society organizations, with the MacArthur Foundation, the McKnight Foundation and the Blue Moon Fund having the largest portfolios over the period 2006-2010. In contrast to some other hotspots, private companies remain a relatively minor source of support for conservation efforts in Indo-Burma, although this is growing in importance, particularly in Lao PDR, where major hydropower projects are providing significant long-term conservation funding for their catchment areas.

CEPF NICHE

The purpose of updating the ecosystem profile was to generate a shared situational analysis and overarching set of investment priorities to facilitate coordination among CEPF, the MacArthur Foundation, the Margaret A. Cargill Foundation and the McKnight Foundation with regard to their support for conservation and sustainable development actions led by civil society.

To this end, the profile articulates a shared investment strategy that these funders will implement with independent but coordinated grant-making processes. The basic premise underlying this strategy is that conservation investment should be targeted where it can have the maximum impact on the highest conservation priorities while supporting the livelihoods of some of the poorest sections of society.

Using this shared strategy, each funder selected those elements that best fit with its strategies and approaches, and incorporated them into its own strategy and request for proposals for the region. Through this process, a niche for CEPF was defined that complements funding provided by other organizations while playing to CEPF's unique strengths and contributing to the fund's global objectives.

Specifically, the CEPF niche builds on the experience of the first investment phase by focusing on approaches that have demonstrated success, moving from pilot projects to longer-term interventions, and integrating results more concretely into government programs. At the same time, the CEPF niche responds to emerging conservation issues—such as wildlife trade, hydropower development and expansion of agro-industry—with strategies developed through extensive consultation with practitioners in the field. These strategies are focused on the geographies where these conservation issues are most acutely felt: the Mekong River and its major tributaries; Tonle Sap Lake and its inundation zone; the limestone highlands along the Vietnam-China border; and the mountains of Hainan Island.

The geographic scope of the CEPF niche also embraces Myanmar to take advantage of opportunities to strengthen capacity among civil society organizations in the country and enable them to address priority conservation actions in a rapidly changing political and development context.

Photos left to right:

Middle man at Tonle Sap, Cambodia. © Conservation International/photo by Koulang Chey

Mekong giant catfish *(Pangasianodon gigas)* in the Mekong catchment. © Zeb S. Hogan

Fish catch, Kachin State, Myanmar. © BirdLife International/Andrew W. Tordoff

STRATEGIC DIRECTIONS AND **INVESTMENT PRIORITIES**

CEPF PRIORITY

STRATEGIC DIRECTION 1

Safeguard priority globally threatened species by mitigating major threats.

INVESTMENT PRIORITIES

- Transform pilot interventions for core populations of priority species into long-term conservation programs.
- Develop best-practice approaches for conservation of highly threatened and endemic freshwater species.
- Conduct research on globally threatened species for which there is a need for greatly improved information on status and distribution.
- Support existing funds to become effective tools for the conservation of priority species in the hotspot.

CEPF PRIORITY

STRATEGIC DIRECTION 2

Demonstrate innovative responses to illegal trafficking and consumption of wildlife.

INVESTMENT PRIORITIES

- Support enforcement agencies to unravel high-level wildlife trade networks by introducing them to global best practice with investigations and informants.
- Facilitate collaboration among enforcement agencies and non-traditional actors to reduce cross-border trafficking of wildlife.
- Work with selected private sector companies to promote the adoption of voluntary restrictions on the international transportation, sale and consumption of wildlife.
- Support campaigns, social marketing, hotlines and other long-term communication programs to reduce consumer demand for wildlife and build public support for wildlife law enforcement.

STRATEGIC DIRECTION 3

Strengthen management effectiveness at protected areas as a tool to conserve priority key biodiversity areas.

INVESTMENT PRIORITIES

- Develop verifiable standards and objectives for protected area management and pilot at priority sites.
- Institutionalize training programs for protected area managers within domestic academic institutions.
- Develop best-practice approaches for direct civil society involvement in protected area management.

CEPF PRIORITY

STRATEGIC DIRECTION 4

Empower local communities to engage in conservation and management of priority key biodiversity areas.

INVESTMENT PRIORITIES

- Raise awareness about biodiversity conservation legislation among target groups at priority sites.
- Pilot and amplify community forests, community fisheries and community-managed protected areas.
- Develop co-management mechanisms for formal protected areas that enable community participation in all levels of management.
- Conduct a gap analysis of key biodiversity areas in Myanmar and support expansion of the protected area network using community-based models.

STRATEGIC DIRECTION 5

Strengthen local initiatives to sustain and improve the livelihoods of local communities at priority key biodiversity areas.

INVESTMENT PRIORITIES

- Pilot alternative livelihood projects to reduce dependence on natural resources at priority sites.
- Directly link livelihood support to conservation actions through negotiated agreements.
- Develop best-practice ecotourism initiatives at priority sites.

CEPF PRIORITY

STRATEGIC DIRECTION 6

Engage key actors in mainstreaming biodiversity, communities and livelihoods into development planning in the priority corridors.

INVESTMENT PRIORITIES

- Support civil society efforts to analyze development policies, plans and programs; evaluate their impact on biodiversity, communities and livelihoods; and propose alternative development scenarios and appropriate mitigating measures where needed.
- Integrate the biodiversity and ecosystem service values of priority corridors into land-use and development planning at all levels.
- Develop protocols and demonstration projects for ecological restoration that improve the biodiversity performance of national forestry programs.
- Engage the media as a tool to increase awareness and inform public debate of environmental issues.

STRATEGIC DIRECTIONS AND **INVESTMENT PRIORITIES**

STRATEGIC DIRECTION 7

Minimize the social and environmental impacts of agro-industrial plantations and hydropower dams in the priority corridors.

INVESTMENT PRIORITIES

- Support land registration for local and indigenous communities at priority sites.
- Upgrade the legal status of unprotected priority sites threatened by incompatible land uses.
- Strengthen the voice of affected communities in approval processes for agro-industrial plantations and hydropower dams.
- Work with the private sector to develop guidelines for siting and developing agro-industrial plantations and hydropower dams in an environmentally and socially responsible manner.

CEPF PRIORITY

STRATEGIC DIRECTION 8

Strengthen the capacity of civil society to work on biodiversity, communities and livelihoods at regional, national, local and grassroots levels.

INVESTMENT PRIORITIES

- Support networking activities that enable collective civil society responses to priority and emerging threats.
- Provide core support for the organizational development of domestic civil society organizations.
- Establish clearing-house mechanisms to match volunteers to civil society organizations' training needs.

STRATEGIC DIRECTION 9

Conduct targeted education, training and awareness-raising to build capacity and support for biodiversity conservation among all sections of society.

INVESTMENT PRIORITIES

- Invest in the professional development of future conservation leaders through support to graduate programs at domestic academic institutions.
- Foster leadership for sustainable development by investing in professional development of key individuals.
- Pilot programs of experiential education to connect school children to nature in priority corridors.
- Conduct targeted outreach and awareness-raising for urban populations about the values of natural ecosystems and the impacts of consumption patterns.

STRATEGIC DIRECTION 10

Evaluate the impacts of conservation investment on biodiversity and human well-being through systematic monitoring.

INVESTMENT PRIORITIES

- Develop common standards and systems for monitoring the impacts and effectiveness of conservation actions across multiple scales.
- Support systematic efforts to build capacity for monitoring among domestic organizations.
- Develop and test mechanisms for ensuring that monitoring results inform national policy debates and local adaptive management.

CEPF PRIORITY

STRATEGIC DIRECTION 11

Provide strategic leadership and effective coordination of conservation investment through a regional implementation team.

INVESTMENT PRIORITIES

- Operationalize and coordinate CEPF's grant-making processes and procedures to ensure effective implementation of the investment strategy throughout the hotspot.
- Build a broad constituency of civil society groups working across institutional and political boundaries towards achieving the shared conservation goals described in the ecosystem profile.

GEOGRAPHIC PRIORITIES

The investment strategy focuses on the highest priorities for conservation in four priority corridors plus Myanmar. Each of the four priority corridors is remarkable in its own right, is in urgent need of conservation action and has a high need for additional investment.

The Hainan Mountains support high levels of endemism, including nearly 400 endemic plants and Hainan gibbon *(Nomascus hainanus)*, the most severely threatened primate in the world. The original vegetation of the corridor has been extensively cleared for shifting cultivation or converted to rubber, coffee and oil palm plantations. The remaining fragments are facing new threats from disturbance and infrastructure development arising from tourism development.

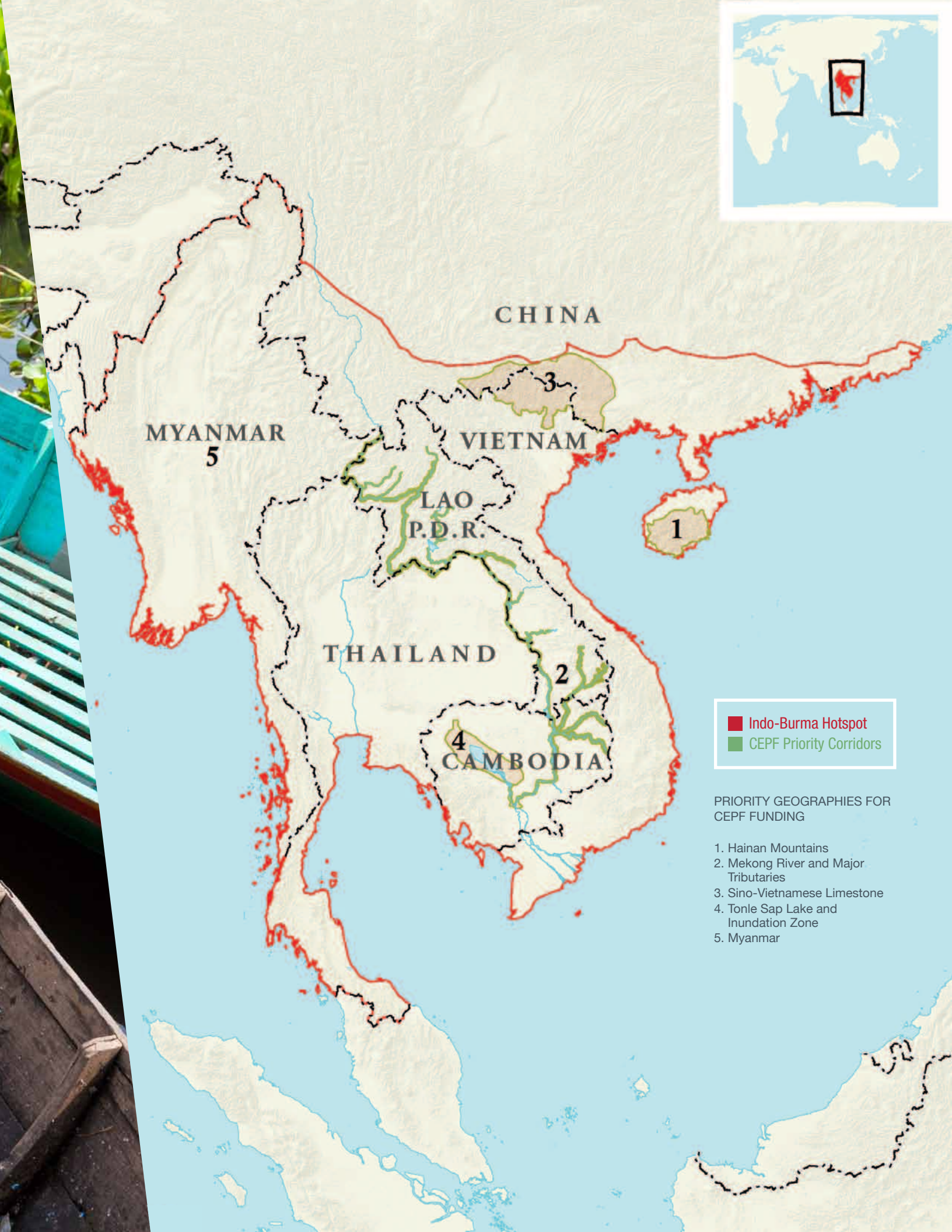
The Mekong River and its major tributaries represent one of the best remaining examples of the riverine ecosystems of Indo-Burma, as well as provide services vital to the livelihoods of millions of people. These rivers are known to be vital for many globally threatened species, including some of the largest freshwater fish in the world. These values are highly threatened, both by locally originating threats and by major development projects, especially hydropower dams.

The Sino-Vietnamese Limestone is particularly important for the conservation of globally threatened primates, as it supports the entire global population of two Critically Endangered species: Tonkin snub-nosed monkey *(Rhinopithecus avunculus)* and cao vit crested gibbon *(Nomascus nasutus)*. The corridor also supports high levels of endemism in many plant groups, such as orchids and conifers. Through a land-use history of commercial logging and shifting cultivation, the natural habitats of the corridor have become fragmented, and remaining blocks are threatened by overexploitation, mining and other incompatible activities.

Tonle Sap Lake and Inundation Zone is an integral and essential part of the lower Mekong ecosystem. The lake supports the most important fishery in Cambodia, responsible for around 60 percent of the country's protein intake, while waters draining from the lake support fisheries and agricultural production downstream in Vietnam. Tonle Sap Lake provides critical breeding, spawning and feeding habitats for many species of migratory fish, while its inundation zone is important for several globally threatened birds. The system faces a wide array of threats, including agricultural development in the inundation zone, unsustainable fishing practices on the lake and upstream dam developments on the Mekong River and its tributaries.

Previous page: Hainan gibbon *(Nomascus hainanus)*, Hainan Mountains. © Kadoorie Farm and Botanic Garden/Lee Kwok Shing

This page: Aerial view of river and forest, Cambodia. © CI/photo by Haroldo Castro


CHINA
MYANMAR
5
VIETNAM
3
LAO
P.D.R.
1
THAILAND
2
4
CAMBODIA
Indo-Burma Hotspot
CEPF Priority Corridors
PRIORITY GEOGRAPHIES FOR CEPF FUNDING
1. Hainan Mountains
2. Mekong River and Major Tributaries
3. Sino-Vietnamese Limestone
4. Tonle Sap Lake and Inundation Zone
5. Myanmar

MOVING FORWARD

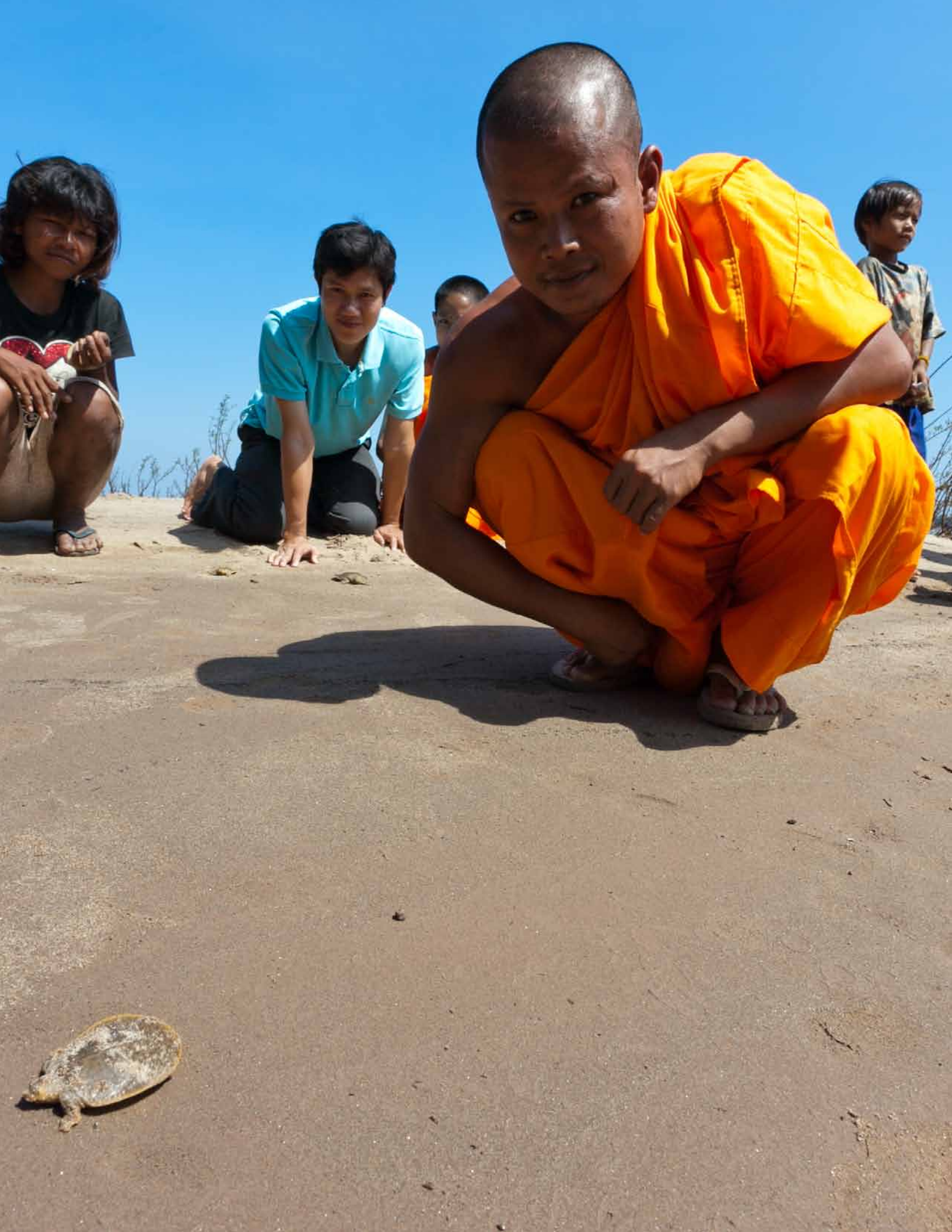
Indo-Burma is one of the most biologically rich regions on the planet, with natural ecosystems that deliver essential services to hundreds of millions of people. These values are being rapidly diminished, however, due to hunting and trade of wildlife, agro-industrial plantations, hydropower dams, linear infrastructure and other immediate threats. The underlying causes include population growth; urbanization and migration patterns; economic growth and increasing consumption; and regional economic integration. Civil society is well placed to address both immediate threats and their underlying causes, although the potential to engage it in biodiversity conservation has yet to be fully realized.

Over the period 2013-2018, CEPF funding will concentrate on six of the 11 strategic directions in the shared investment strategy. The geographic focus will be on four priority corridors and the 74 priority sites they contain. In addition, CEPF grant making will specifically target Myanmar, recognizing the unique circumstances in this country where conservation investment has been restricted by economic sanctions. Moreover, CEPF investment will focus on 152 priority species that require species-focused action in addition to site-based and landscape-scale conservation. Although ambitious, the CEPF investment strategy is realistic and represents an important opportunity to realize the potential of civil society in the hotspot, as well as to make a lasting contribution to the conservation of Indo-Burma's unique and irreplaceable biodiversity values.

Previous page: Child with water snakes, Tonle Sap, Cambodia. © CI/photo by Koulang Chey

This page: Releasing young Cantor's giant softshell turtles *(Pelochelys cantorii)* along the Mekong River, Cambodia. © Kristin Harrison & Jeremy Ginsberg

Back cover: Greater Adjutant *(Leptoptilos dubius)*, a member of the stork family, at the breeding colony at Prek Toal in Cambodia. © Wildlife Conservation Society/ Eleanor Briggs



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