



# CONSERVATION PROGRAMME OF WWF CAMBODIA







# WWF CAMBODIA CONSERVATION PROGRAMME



## Introduction

Cambodia is regionally and internationally important for the conservation of terrestrial and aquatic habitats and threatened species of wildlife. Tiger, Asian elephant, wild cattle, large waterbirds, and other rare species of plants and animals are part of Cambodia's natural heritage.

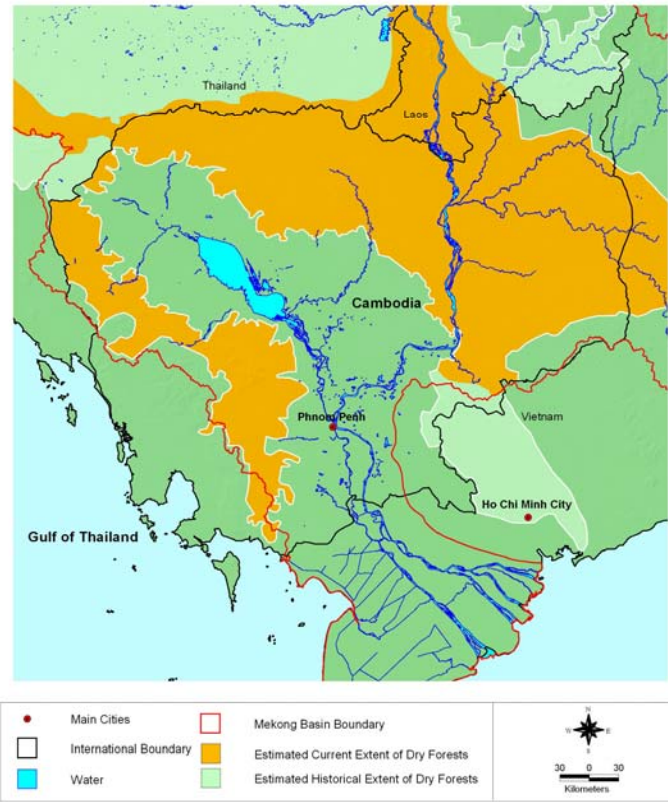
Healthy habitats and populations of wildlife are economically important to Cambodia in many ways. Communities rely on plants and animals from the forest to meet subsistence and cash needs. Forests protect the health of inland waters that are important spawning or feeding areas for the fish that most Cambodians rely on for protein.

In Cambodia, human population density is low, and there are relatively large natural areas that are still intact. However, some species are being harvested at unsustainable levels and might soon become extinct in Cambodia. At the same time, important natural habitats are being lost at an increasing rate. To meet these threats, the WWF Cambodia Programme is working with the government, other non-government organizations (NGOs), local communities, and the private sector on conservation and sustainable development programmes.

## What is WWF?

WWF- the global conservation organization - operates in more than 100 countries and has almost 5 million supporters. As part of the WWF Greater Mekong Programme, WWF Cambodia's mission is to ensure that there will be strong participation and support from all peoples to conserve the country's rich biological diversity. Through the encouragement of sustainable use of natural resources, WWF Cambodia will promote new opportunities for the benefit of all people, enhancing local livelihoods, and contributing to poverty reduction in the Kingdom of Cambodia.

WWF Indochina - comprising of Cambodia, Lao PDR and Vietnam - and WWF Thailand merged on 1 November 2005 to become the WWF Greater Mekong, whose purpose is to aid the people of Cambodia, Lao PDR, Thailand, and Vietnam to conserve the region's natural heritage and move to a more sustainable development path.



**WWF Cambodia has nine major programmes:**

### ***Lower Mekong Dry Forests Ecoregion Action Programme***

Given the broad range of threats to the Dry Forests such as conversion for agriculture, illegal wildlife trade, land encroachment, and infrastructure development - WWF's Dry Forests Ecoregion Action Programme, in partnership with the government and other NGOs, is focusing on developing strategies to address these threats at large (landscape) scale. Such an approach has positive impacts for smaller scale conservation projects being implemented at the site level. The Lower Mekong Dry Forests Ecoregion Programme aims to ensure that:

- Priority species are preserved in viable populations throughout the landscapes,
- A representative and viable sample of all broad habitat units is conserved, as well as the ecological and evolutionary processes driving natural communities,
- Natural resources support socio-economic development, and appropriate development ensures the conservation of biodiversity,
- Efforts to protect and conserve the Dry Forests landscapes are socially, financially, and politically sustainable.





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## ***Dry Forest Species Project***

This project's top priority is improving management of the Ministry of Environment's Phnom Prich Wildlife Sanctuary, home to the largest Asian elephant herd in eastern Cambodia, and a variety of other globally threatened species, including tiger. Activities include providing technical and financial support to rangers for law enforcement, habitat protection, and wildlife research. The Species Project also supports Forestry Administration counterpart staff to monitor and crack down on illegal wildlife poaching and trade. Furthermore, collaborative efforts with NGO partners and other WWF projects work to conserve the dry forest mosaic ecosystem that supports an amazing array of biodiversity.

## ***Srepok Wilderness Area Project (SWAP)***

Populations of the country's rare and endangered wildlife are still found in the Srepok Wilderness Area located within the Monduliri Protected Forest, and the SWAP is supporting the development of a new approach to conservation through the sustainable use of wildlife. Using a South African model, alongside the FA, other government officials, and NGO partners, the project is developing a pilot site for restoring species' diversity and abundance, increasing management effectiveness, and using the site to develop a high quality ecotourism experience.

## ***Community-Based Natural Resource Management (CBNRM) and Biodiversity Corridors Initiative (BCI)***

WWF Cambodia's CBNRM component works with local villagers, and provincial authorities, to ensure that the natural resources which people rely upon for subsistence and income are managed sustainably. The BCI aims to maintain the ecological integrity of the Eastern Plains landscape through development of sustainable use corridors that connect existing protected areas.

## ***Climbing Ambition: phase II - a Switch to Sustainable Rattan Harvest & Production***

This project involves setting-up a field research plot to obtain information on growth and yield of specific rattan species. In addition, a community

based rattan network will be established and a market chain analysis carried out in Cambodia, Lao PDR and Vietnam. Preferred systems of harvest will be developed and tested at pilot studies carried out at community level to assess the potential of alternative products and agro-forestry plantations.

## ***Living Mekong Programme (LMP)***

Using an Integrated River Basin Management approach, WWF's LMP is working toward biodiversity conservation and sustainable development through a programme of action, integrating on-the-ground activities such as watershed management and restoration, community management of wetlands and fisheries, and protection of dolphins and giant catfish.

## ***Freshwater Conservation Programme***

This programme involves coordination, planning and management of WWF Cambodia's effort to conserve the keys freshwater habitats, aquatic species and ecological functions identified within the Mekong River Ecoregion in Cambodia.

## ***Cambodian Mekong Dolphin Conservation Project***

Although considered a sacred animal in Buddhist culture, the Irrawaddy dolphins of the Mekong River are in grave danger of extinction. Eliminating major threats to the dolphin and protecting its habitat is crucial for a host of other endangered aquatic species in the Mekong. The WWF Cambodia Programme, in collaboration with NGO partners and relevant government departments, are working with local communities to help reduce threats and conserve the Irrawaddy dolphin, and its habitat for future generations.

## ***Wetlands Alliance in Cambodia's north-east***

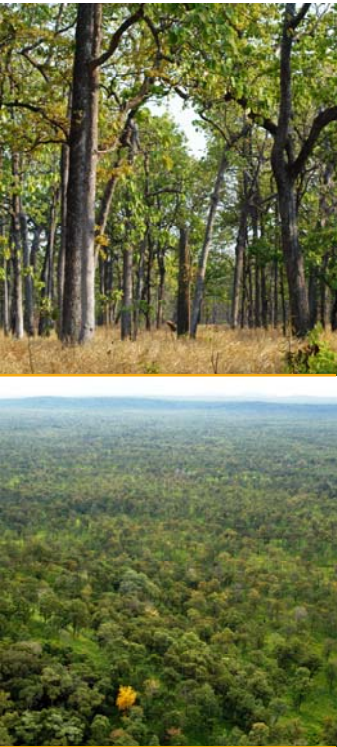
The aim of the Alliance is to help local government, NGOs and community networks and associations make and maintain changes that will improve the livelihoods and food security of the region's rural and peri-urban poor through sustainable management of wetlands and aquatic resources.

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# SREPOK WILDERNESS AREA PROJECT



## Introduction

The Eastern Plains of Cambodia are home to a variety of incredible plant and animal species. Additionally, a variety of ethnic groups live here, using their knowledge of the landscape to support their livelihoods and practice their cultural traditions. Unfortunately, the plants, animals, people, watersheds, and landscapes of the Eastern Plains face serious threats.

The Mondulkiri Protected Forest was established by the Royal Government of Cambodia on 30 July 2002 to achieve the following: protect and conserve plants, animals, and water sources; maintain a balance of natural resources; conduct scientific research; enhance education and community development; and promote sustainable ecotourism.



scientific, and economic reasons for protecting wildlife diversity and abundance. Most of the illegal hunting and trading of wildlife was stopped, and in its place developed a model of sustainable use. Today, the 'Wildlife Conservation by Sustainable Use' approach demonstrates how wildlife conservation can contribute to economic development.



## Wildlife in Cambodia

As recently as 50 years ago, large numbers of some of the world's most magnificent wildlife species lived in Cambodia. There were significant numbers of Asian elephant, tiger, and rhinoceros. Large populations of kouprey, gaur, banteng, and wild water buffalo made Cambodia one of the richest places in the world for wild cattle species. In fact, the abundance of wildlife led some biologists to compare the north and northeast of Cambodia to parts of Africa.

Sadly, much of this wildlife has been lost in the last 40 years, largely due to uncontrolled hunting and the illegal wildlife trade. The kouprey, Cambodia's national animal, together with rhinoceros and hog deer, may have already become extinct. Tiger, Asian elephant, wild water buffalo, and Eld's deer are also threatened with extinction in the next few years, unless immediate action is taken.



## Lessons from South Africa and other countries

In the past, parts of Africa also experienced serious decreases in wildlife populations. In many of these areas, governments, NGOs, the private sector, and individuals helped to restore wildlife populations to their former glory. Awareness and education programmes increased understanding about the intrinsic,

There is a lot of interest in the economic justifications for protecting biodiversity. Wildlife tourism offers one of the most sustainable means of making substantial economic returns from investing in wildlife conservation. Tourist revenue can support the costs of running ecotourism businesses and provide revenue to central and local government; in turn this income can be used to support livelihood improvements in local communities, for example by building schools, clinics, and other carefully planned infrastructure needed for development.

## Applying the 'wildlife conservation by sustainable use' model in Mondulkiri province

The Royal Government of Cambodia, along with WWF Cambodia and other NGOs, are developing this approach to conserve wildlife and contribute to economic development in the Mondulkiri Protected Forest. A key first step is to divide the area into different conservation and use zones. Each zone has a different purpose related to wildlife protection, and sustainable use of wildlife and other natural resources:

- **Strict Protection Zone:** primarily for conservation of wildlife, forests and fish stocks. Hunting, logging, wildlife collection and fishing in the Srepok River is prohibited. All forms of agriculture and cattle grazing are prohibited. Dogs and domestic cattle are not







# SREPOK WILDERNESS AREA PROJECT



permitted to enter. Permanent structures may not be built.

- **Regulated Use Zone:** provides additional area for conservation while providing a buffer between the Strict Protection Zone and Community Use Zone and a corridor for movement of wildlife to and from adjacent protected areas. Restrictions are the same as for the Strict Protection Zone, other than that all legal Non-Timber Forest Products may be harvested by permit and fishing, using legal methods, is allowed in the Srepok River and its tributaries.
- **Community Use Zone:** provides land for settlement and agriculture as well as areas for sustainable management of Non-Timber Forest Products.
- **Ecotourism Zone:** area for tourism infrastructure development and intensive ecotourism use.

## Increasing benefits of tourism to local communities

Development of tourism requires improved transportation and accommodation infrastructure, communications, and training in the skills required to provide quality tourism

services. Ecotourism must be part of wider livelihood development strategies, and is just one of many options to support economic development. Local people can benefit directly from tourism in the Mondulkiri Protected Forest through: employment in tourism businesses; sale of handicrafts to tourists; village development projects financed through a share in tourist fees and business licenses, and opportunities for local communities to establish their own tourism enterprises.

## Partnerships

There is high potential for the 'Wildlife Conservation by Sustainable Use Model' to succeed, initially in Mondulkiri, and then through replication in other parts of Cambodia. Success will require a strong and stable partnership between the government, local communities, the private sector, and NGOs.

Primary support for this project comes from WWF Netherlands, Habitat Grup Empresarial, and the Darwin Initiative.

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# PHNOM PRICH WILDLIFE SANCTUARY



## Introduction

Phnom Prich Wildlife Sanctuary (PPWS) was created under the Royal Decree concerning the creation and designation of Protected Areas, issued on 1 November 1993. With an area of 222,500 ha, it is one of 23 national protected areas (PAs) managed by the Ministry of Environment, Department of Nature Conservation and Protection (MoE).

In partnership with local communities and other stakeholders, the mission of the PPWS is to conserve biodiversity and habitat, and sustainably manage the natural and cultural resources of the wildlife sanctuary for the benefit of the local communities and Cambodia as a nation.

Active management of PPWS began in May 2002, with external funding through WWF to hire and train rangers and provide basic equipment. Routine patrolling emphasizes law enforcement to reduce threats to biodiversity. In addition to patrolling, there are special ranger teams for awareness-raising, and for biological research and monitoring.

## Biodiversity value

PPWS is notable for its rich habitat diversity, ranging from hilly evergreen forest to open dry dipterocarp woodland and seasonally wet grasslands. This habitat diversity supports globally significant species that are characteristic of both dry forest and dense forest ecosystems.

PPWS hosts the core area for the largest Asian elephant herd in eastern Cambodia, confirmed by camera trapping in 2002 as a minimum of 42 individuals, including calves and sub-adults. The megaherbivores banteng and gaur are relatively abundant, and there is a resident population of a critically endangered subspecies of Eld's deer. These and other herbivores form the prey base for tigers in the sanctuary, while other key carnivores include leopard, clouded leopard, marbled cat, jungle cat, and dhole (Asian wild dog).

The PPWS habitat mosaic also supports certain closed forest primate species such as yellow-cheeked crested gibbon, black-shanked douc, and silvered langur. Dense forest bird species include Great Hornbill, Wreathed Hornbill, and possibly White-winged Duck.



The more open habitats support significant numbers of Green peafowl. PPWS's seasonal wetlands support threatened waterbirds, including Giant Ibis, White-shouldered Ibis, Sarus Crane, Lesser Adjutant, and Woolly-necked Stork.

## Local communities

More than 8500 people live in communities around and in PPWS. Most of the people are indigenous ethnic minorities who have used PPWS resources for centuries.

The land use in local communities can be either intensive agriculture or extensive forest gathering, hunting, and fishing, with spirit forests conserved according to tradition. The people are dependant upon fishing for their protein, but also collect at least 85 species of plants from the forests. Use of natural resources inside the sanctuary is critical to the survival of the local communities.

## Threats to conservation values

Uncontrolled hunting and trapping during the war years has depleted wildlife populations, especially during the 1980s and 1990s. However, former hunters now believe that key species populations are beginning to recover, since active protection began in 2002.

Illegal fishing by outsiders, who have introduced methods such as electric shock, chemical poisoning, and explosives, threatens both biodiversity and local livelihoods.





# PHNOM PRICH WILDLIFE SANCTUARY



As these methods are used in deep pools of the major streams, they seriously impact fish stocks and other aquatic wildlife like turtles and the critically endangered Siamese crocodile.

Illegal logging of valuable timber species threatens the semi-evergreen and mixed deciduous forests by degrading habitat, depleting the genetic base of target species, and increasing access for other illegal activities.

Conversion of forest land for agriculture is an increasing threat to natural habitat quality. PPWS management must clearly prioritize and zone areas according to their comparative value for biological conservation or livelihood improvement.

Unregulated gold mining is a very serious and increasing threat in PPWS, which pollutes ground water and surface streams, threatening both wildlife and people even downstream away for the mines. Illegal mining also usually involves illegal logging for local construction, and may involve hunting for local bushmeat. Mining also poses serious threats to workers through a lack of safety measures.

## Achievements

Under the partnership of the Department of Nature Conservation and Protection (DNCP) and WWF Cambodia, 35 local people are being supported as PPWS rangers and local counterpart monitors. Most of the rangers are former hunters, and have since received

training in basic orienteering, scientific data collection, law enforcement techniques, and conservation awareness-raising. Since 2002, routine ranger patrolling has significantly reduced the pressures of illegal logging, hunting, and fishing. Systematic biological and threat monitoring was established in 2003 and is already indicating improved conservation values in the sanctuary.

Management is improving with the development of a management plan and three-year operational plan. Zoning in the sanctuary is following a rigorous participatory process that has included nine community consultation workshops.

## Supporting partners

The DNCP is the agency responsible for management of PPWS. Major financial support has come from WWF-US, from AREAS and Tiger conservation programmes, and also from the US Fish and Wildlife Service Asian Elephant Conservation Fund. Ranger law enforcement training was conducted by a joint MoE-WildAid team. Participatory planning and community resource management has been led by the DNCP and WWF-MOSAIC Eastern Plains project, funded by the October Hill Foundation and USFWS Rhino and Tiger Conservation Fund.

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# COMMUNITY-BASED NATURAL RESOURCE MANAGEMENT & BIODIVERSITY CORRIDORS INITIATIVE



## Introduction

The majority of the people of Cambodia's Eastern Plains are Phnong, an indigenous ethnic minority who have lived sustainably in this landscape for centuries, practicing shifting agriculture and relying on forest products for their livelihoods. Until recently these communities have lived in isolation, but new roads and immigrants are bringing rapid change.

While the protection of wildlife has been a priority in Cambodia's Eastern Plains, there has been a gap in addressing basic livelihood issues of local people. Concerned that local people will reject conservation if they have no say in determining how natural resources are to be managed, the WWF Cambodia Conservation Programme initiated its community based natural resource management (CBNRM) project. With this project, WWF works with local villagers, and provincial authorities, to ensure that the natural resources which people rely upon, for subsistence and income, are managed sustainably. The Community Teams have been working in the Phnom Prich Wildlife Sanctuary and Mondulkiiri Protected Forest since 2001 and 2005 respectively.

## Objectives

Since 2001, WWF's Community teams have been working to improve local livelihoods, conservation, and biodiversity in order to:

- Build trust and involvement in local communities, and distribute information about relevant laws, rights, and responsibilities of local communities and other stakeholders,
- Build local capacity and support communities to develop formal agreements for biodiversity conservation and natural resource management,
- Improve local livelihoods through participatory planning and community-based resource management.

## Current livelihoods

For centuries, the people of Cambodia's Eastern Plains have depended upon their surrounding natural resources. Local indigenous communities derive their livelihoods from the land in a variety of ways, depending upon the season. During the dry season, primary activities are fishing, hunting, and the collection of both dry and liquid resin, as well as other



non-timber forest products (NTFP), such as honey, mushrooms, wild fruit, traditional medicines, bamboo, rattan, and imperata grass for thatch. In the wet season, local livelihoods depend upon the cultivation of rice, fishing, chamkar (shifting cultivation), hunting, and permanent cropping. In the open forest areas characteristic of the Eastern Plains, wet rice cultivation is more common than upland rice planted in swidden plots.

Threats and priority issues for these communities include land encroachment, illegal fishing and hunting, collection of luxury wood, access to health, stability of water supplies, and education.

## Achieving WWF's CBNRM goals

Goals and objectives for CBNRM are:

1. Support for community organization - The teams focus on supporting local communities to organize CBNRM through initiatives such as Community protected areas, Community forestry and fisheries and the implementation of participatory land use planning.
2. Support for livelihoods improvement - Research and analysis to promote sustainable livelihoods. By embracing a livelihoods approach, CBNRM can contribute to the overall improvement of community well-being.
3. Outreach environmental education - Targeted environmental education using participatory methods is conducted to catalyze communities to mobilize on environmental issues.
4. Strengthening environmental governance - Working with local communities and local government to improve understanding and implementation of environmental laws and natural resource management.





# COMMUNITY-BASED NATURAL RESOURCE MANAGEMENT & BIODIVERSITY CORRIDORS INITIATIVE



## Eastern Plains Biodiversity Corridor Initiative

WWF and the Wildlife Conservation Society (WCS) are working with the Government of Cambodia to implement a new initiative for conservation in the eastern plains of Cambodia. Funding for this initiative is provided by the Asian Development Bank.

The initiative aims to maintain the ecological integrity of the Eastern Plains landscape through development of sustainable use corridors that connect existing protected areas.

The sustainable use corridors link seven protected areas in the Eastern Plains Dry Forests Landscape. Five of these are in Cambodia:

- Phnom Prich Wildlife Sanctuary
- Monduliri Protected Forest
- Lomphat Wildlife Sanctuary
- Phnom Nam Lyr Wildlife Sanctuary
- Snoul Wildlife Sanctuary

The project area also covers Seima which forms a key corridor between four of the sites and is currently under production status though managed under a temporary order for its biodiversity values.

## Project outcomes

- Poverty Reduction
- Harmonized Land Management and Governance Regimes

- Ecosystem Connectivity
- Capacity Building
- Sustainable financing

WWF/WCS will assist the Governor's Office in Monduliri to draw up a joint strategy for project implementation. The project will seek to establish a Provincial Conservation Planning Unit in the Provincial Governor's Office in Sen Monorum, to improve coordination of biodiversity conservation with other large-scale development activities.

Good environmental governance is a key to improve planning at all scales of government within this landscape. Building capacity and awareness is an ongoing activity of the project at both a local and provincial level. This will be supported through a training needs assessment and delivery of targeted and ongoing training.

## Key partners and supporters include:

- Forest Administration and Department of Fisheries, MAFF
- Department of Nature Conservation and Protection (DNCP), MoE
- Monduliri Provincial Departments, local authorities, communes and villages
- NGO Networks (WCS, NGO Forum, NOMAD, CIDSE, ICC, CFDS, ILO, CLEC, NGO Forum, and CBNRM Learning Institute, etc)
- October Hill Foundation through WWF Endangered Species Program
- Darwin Initiative
- Habitat Grup Empresarial



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# TIGER CONSERVATION IN THE EASTERN PLAINS OF CAMBODIA



Richard Mclellan



Nick Cox



Merril Hanley

## Introduction

Tigers require dense habitats, adequate supplies of prey (deer, wild cattle, and wild pigs), and water. As habitats have been cleared and fragmented, tiger numbers have decreased. At the heart of Cambodia's Dry Forest Eastern Plains Landscape is a complex of globally important protected areas, including Phnom Prich Wildlife Sanctuary (PPWS) and Mondulhiri Protected Forest (MPF), where WWF has been working since 2001 and 2003 respectively. These protected areas are home to several large and endangered mammals, including the Indochinese tiger. The landscape dominated dry deciduous with patches of semi-evergreen and evergreen forests and many seasonal water holes and large rivers. It is one of the most significant dry forest habitats for conserving the tiger population in South-east Asia. This highly endangered species is now facing serious threats and extinction is a real risk if no proper and immediate actions are taken.

WWF, in collaboration with government and NGO partners, has embarked on a new and large-scale tiger conservation initiative to secure critical tiger habitat, increase tiger prey populations, all with the ultimate goal of doubling the tiger population in the Eastern Plains landscape within the next 10 years.

## Tiger status

There is no exact figure of how many tigers are in the landscape or how many were there in the past. However, given the type of forest habitat, there is significant potential to increase the density of tiger (number per 100km<sup>2</sup>), even though the density is currently very low. WWF has observed an increase in tiger and prey signs over the last two years, and photographed a tiger in Mondulhiri for the first time in November 2005.

A recent study by joint WWF and WCS revealed that tigers now occupy just 7 percent of their historical range, and in the past decade alone, the area occupied by tigers has decreased by 41 percent. Now, the greatest threats to the tiger population in the eastern plains landscape are habitat loss and fragmentation, and intense poaching of tiger and their prey.

During times of war, tiger were killed for their skin and bone, and traded for cash or weapons.



Decades of poaching have nearly eliminated tiger and their prey, but their habitat has remained largely intact, and if well protected, tiger populations can recover.

## Protecting and connecting habitats

Tiger conservationists believe that successful, long-term tiger conservation will require two approaches:

- Arrest the international tiger trade,
- Create large conservation landscapes where tiger populations thrive in protected areas.

Habitat linkage, especially through restoration of good tiger habitat, can also increase the amount of tiger habitat available and the number of tigers.

## Objectives

With its 3 years short-term aim to enable a measurable increase in the population of tigers and its prey in both MFP and PPWS, the project's objectives are to:

- Increase patrol effort and effectiveness within these two protected areas.
- Ensure no land encroachment in the habitat corridor between the protected areas.
- Implement a scientifically rigorous tiger and prey monitoring system to empirically show the effects of improved enforcement effort and effectiveness on the animal population.

## Tiger conservation

The project aims at working with the three contiguous protected areas in Mondulhiri Province, the MPF, PPWS and Lomphat Wildlife Sanctuary which together cover





# TIGER CONSERVATION IN THE EASTERN PLAINS OF CAMBODIA



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approximately 8500 km<sup>2</sup> of critical tiger habitat. However, WWF now focuses particularly on two contiguous areas of PPWS and MFP.

WWF support in MPF and PPWS includes the construction and maintenance of infrastructure, the production of a management plan, an extensive community outreach and tiger protection enforcement programme, staff capacity building, and the development of an approach for sustainable funding of the protected areas through eco-tourism and forest carbon financing. WWF also provides additional salary support to government rangers as well as community rangers who are stationed in the areas.

### *Tiger and prey monitoring*

The following methods are important to quantitatively show improvements in the situation over the duration of the project:

- Occupancy survey
- Camera-trapping
- DNA analysis
- Ungulate transects

### *Tiger patrol guards*

The project will support 4 patrol teams; each consisting of eight people per team dedicated to the protection of tigers, tiger prey, and forest habitat.

The primary aim of the tiger patrol guards will be to ensure no hunting in the core zones of each protected area as well as no encroachment in the corridors between the core zones.

### *Mobile tiger patrol*

A fifth Tiger Patrol team will be operated out of the provincial town. This will be a mobile team consisting of rangers and police and will act in three ways: a) as a rapid deployment force, b) as a supplement to other patrol teams to bolster operations; c) as an anti-trade force.

### **Project partners**

- Ministry of Environment
- Forestry Administration
- Police and local community
- WCS

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# CAMBODIAN MEKONG DOLPHIN CONSERVATION PROJECT



## Introduction

The Mekong (Irrawaddy) dolphin is a proud symbol of the Mekong river and its biodiversity. The Mekong river is one of the world's only five remaining freshwater habitats for this species and it supports the largest remaining population.

The Mekong river population is thought to number less than 100 individuals and is now restricted to just a 190km stretch of the river in North Cambodia – up to the Lao border – 500 km from the sea.

The dolphin used to be distributed throughout the Cambodian Mekong river, its major tributaries and even the Tonle Sap lake.

## Critically endangered

The Irrawaddy dolphin was listed as critically endangered on the IUCN Red List in 2004. The dolphin's habitat requirements make it especially vulnerable as it lives in freshwater and nearshore marine environments subject to intensive human use and abuse.

The freshwater Irrawaddy dolphin populations in particular, living in very confined areas, is in serious decline, both in terms of its range and size.

## Declining numbers

Research indicates that the Mekong population has suffered a minimum mortality rate of 16-20% over the last 3 years. This is clearly unsustainable. Scientists suggest that the mortality rate for small populations of dolphins should not exceed 1-2% to ensure survival.

## Threats to survival

Historically, populations were decimated by hunting for meat and oil, accidental drowning in nets, explosives fishing and being used as target practice during Cambodia's recent troubled periods.

Today the known threat is primarily accidental drowning in gillnets, but also deaths due to illegal fishing methods. Other possible current and future threats include:

- **Pollution** - contamination of the Mekong river from industry, agriculture and towns



- **Over-fishing** - reducing available prey and inhibiting dolphin movement
- **Dams and irrigation projects** - reducing available water and habitat
- **Deforestation and mining** - increasing sedimentation and reducing habitat size
- **Collision injuries/death/disturbance** - from boat traffic and inappropriate tourism.

## Cambodian Mekong Dolphin Conservation Project

Recognizing the urgent need to conserve the Mekong dolphin, the CMDCP began in January 2005 as a collaborative effort between WWF, Wildlife Conservation Society (WCS) and the Fisheries Administration to implement the government's Cambodian Mekong Dolphin Conservation Strategy.

The Mekong dolphin is a flagship species for the conservation of the river. It has been chosen as a focus for protection not simply because it is endangered, but because it requires a reasonably unpolluted environment, sufficient water to move among deep pools and adequate food supply. Factors which are critical components of a healthy river ecosystem and necessary for humans and other riverine species.

The aim of the project is to maintain a viable population of dolphins in the Mekong and protect the environmental health of the river. CMDCP does this by working in four key areas:

### 1. Threat reduction

- Developing regulations and a dolphin habitat zonal use system in conjunction with the





# CAMBODIAN MEKONG DOLPHIN CONSERVATION PROJECT



- Government to protect dolphins and their core habitat
- Proper management of dolphin-watching ecotourism
- Working with communities and NGOs to ensure sustainable management of local fisheries and the inclusion of dolphin conservation within their activities
- Providing alternative sources of livelihood for fishing communities adjacent to core dolphin habitats (DCAs) in partnership with the Cambodian Rural Development Team (CRDT).

## 2. Education and awareness

- Ensuring all stakeholders are aware of regulations relating to dolphin conservation
- Produce educational signboards and materials for tourists and the Cambodian public
- Educational village workshops and school visits for communities adjacent to DCAs
- Integration of monks into environmental education.

## 3. Research

- Dolphin mortality, especially the mysteriously high calf mortality rate

- Dolphin population and distribution surveys
- Impacts of dolphin watching tourism on dolphins
- Genetic research to assess population viability and discreteness
- Monitoring threats to dolphins.

## 4. Co-operation and regional co-ordination

- Build cross border co-operation between stakeholders at the trans-boundary dolphin pool and develop a trans-boundary pool conservation strategy
- Establish a community trans-boundary pool conservation group
- Improve fisheries management and community enforcement at the trans-boundary pool.

## WWF supporting partners

- WWF Germany
- WWF Denmark, and
- WWF Switzerland.

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# WETLANDS ALLIANCE PROGRAMME



## Introduction

The Wetlands Alliance Programme (WAP) brings together the strengths and expertise of four institutions:

- The Asian Institute of Technology (AIT)
- Coastal Resources Institute (CORIN) of the Prince of Songkla University
- The WorldFish Center
- Living Mekong Programme of WWF

These organizations are all known for their work in conservation, development, education, training and research.

The intention of the Wetlands Alliance is to ensure effective and appropriate management of aquatic resources, contributing to improved food security and poverty alleviation in target areas of the Mekong Region.

The Programme is implemented in Cambodia, Thailand, Vietnam and Lao PDR, with the initial phase due to be completed by the end of 2008. The main approach of the WAP is to build capacity at local levels and explore and test ways to work together to influence and consolidate change.

WAP has two target areas in Cambodia; North-East Cambodia, primarily along the Mekong main stream in Stung Treng and Kratie provinces, and Cambodia South-East coast (Kampot-Kep province). WWF Cambodia has been a key support provider to WAP development in North-East Cambodia.

## WAP consultation phase in North-East Cambodia

The WAP process in North-East Cambodia began in May 2006 with initial scoping meetings in Kratie and Stung Treng Provinces. Meetings were held with a majority of relevant provincial line agencies and local NGOs. At these meetings, WAP was introduced, followed by a discussion of issues of concern and priorities for action for each stakeholder group.

This information was summarized and presented at a WAP Core Partners meeting in Sihanoukville, Cambodia, when broad plans were agreed for implementation of pilot activities and further consultation processes at all WAP target sites in the four Lower Mekong Basin countries, Cambodia, Lao PDR, Thailand



and Vietnam. In Cambodia the following activities were carried out:

- Pilot activity - This activity aimed to introduce and collect all existing information, reports and maps relevant to wetlands and aquatic resource management – both from local government agencies and local NGOs, as well as from Ministries and other offices in Phnom Penh. This pilot activity was also intended to help clarify key stakeholders' views on wetland resources, and bottle-necks for local change agents in obtaining necessary information related to wetland resources.
- A second pilot activity reviewed policies and legal frameworks in the fisheries sector relevant to the conservation and wise use of wetlands in Cambodia. This pilot activity provided a better understanding of capacity gaps in implementing policy and regulations related to fisheries. It also assisted the consultation process with all stakeholders from the national to the community level.
- A provincial stakeholder workshop, jointly co-hosted by Kratie's Provincial Governor's Office, WorldFish and WWF (on behalf of WAP) was conducted in Kratie Province in October 2006. The intention being to consult local stakeholders and identify the important capacity building activities WAP should support, in a participatory, bottom-up approach. The approach was to identify the local situation and local stakeholders' points of view on the wetland resources management and aquatic resources management.

## Implementation phase and ownership

The Wetlands Alliance seeks to build on a range of previous interventions and capacity





# WETLANDS ALLIANCE PROGRAMME



building initiatives undertaken by WAP partners and others. These include the AIT Aqua Outreach Program in Cambodia, the 'WorldFish Wetlands Approach' and Inland Fisheries Research and Development Institute capacity building efforts; The Mekong Wetland Biodiversity Programme (MWBP) and Culture and Environment Preservation Association "Salaphoum" action research initiatives. The WAP has also sought to create local ownership from the start through discussion with stakeholders regarding wetland issues and concerns. For implementation, WAP provides full ownership to each LCA to identify their needs, develop their work plan and implement their activities.

## Key activities in North-East Cambodia

Based on a series of consultations conducted during 2006 including individual interviews, a provincial workshop, and the collection and analysis of participatory information, five key activity groups have been identified and agreed as priorities for Cambodia.

- Strengthening the capacity of fishery sector agencies and local planning institutions;
- Developing local capacity to conserve riparian, gallery, island forest and vegetation conservation;
- Developing capacity of local change agents to respond to changing environments;
- Developing Provincial Departments of Agriculture and rural development NGOs capacity to assist livelihood improvement; Developing focal area communications.

## Achievements

WAP is working towards its objective. After starting the program in 2005, various activities have been undertaken to engage local change agents and regional dialogue partners to raise awareness of proper aquatic resource management. The WAP program has been presented to all stakeholders in meetings throughout its targets areas. WAP also participated in the celebration of World Wetlands Day which provided an opportunity to broadcast to a wide audience the achievements made so far.

## WAP partners in North-East Cambodia

WAP is funded by the Swedish International Development Cooperation Agency (Sida). In Kratie and Stung Treng in North-East Cambodia, Wetlands Alliance works together with the Provincial Rural Development Committee, Fisheries Cantonment, Provincial Departments of Environment, Agriculture, and Land Management Urban Planning and Construction. WAP also works with NGOs such as Cambodian Rural Development Team, Khmer Association for Development of Countryside Cambodia, Culture and Environment Preservation Association, Community Economic Development, and Oxfam Australia.

At the national level, WAP works closely with various offices including the Institute of Fishery Administration, the Ministry of Environment and MAFF. WAP also worked with Oxfam GB on initial ideas for areas of collaboration under the DANID/DFID livelihood facility.

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# COMMUNITY FISHERIES PROJECT



## Introduction

Fish and rice are essential to Cambodia's food security, fish accounts for approximately 75% of Cambodia's animal protein consumption and is especially important for the livelihoods of Cambodia's rural poor. However, in recent years there is growing evidence of a decline in the productivity and diversity of Cambodian fisheries, with fishermen reporting declining fish catches with the catch comprising of fewer larger, higher value species. Key contributing factors to this decline include: fish harvest exceeding sustainable limits (over-fishing), widespread use of illegal and destructive fishing methods, and the destruction of essential floodplain habitat (important for fish reproduction), in particular flooded forests.

In response to these threats to fisheries and as part of the Cambodian Government's policy of rural poverty alleviation, new Fisheries legislation (2007) provided for the promotion of community fishery management as a mechanism for communities to work together with Government to improve the management of their local fisheries to ensure local food security.

WWF Cambodia is working with the Fisheries Administration (FiA) and local Government to assist local communities develop community fishery management in the North East of Cambodia. WWF Cambodia is currently working to develop community fisheries with five villages on the Srepok River in Mondulkiri province: Mihel Kraom, Mihel Leu, Peam Chimiet, Nang Buo and Srae Chae villages.

## Objectives

- Increase community understanding and recognition of the benefits and importance of sustainably managed fisheries resources through direct participation in planning, managing, utilising and protecting fisheries resources.
- Assist communities to establish community fishery management groups in accordance with the Fishery law.
- Assist community fishery groups to develop and implement effective community fishery management plans that provide for sustainable fishery resource use and equitable benefit sharing.



Chan Sokheng

- Improve the standard of living of local communities in order to contribute to poverty reduction.

## The community fisheries project

WWF Cambodia began its community fisheries project in 2007 with an awareness programme to identified priority villages on the Srepok River in Mondulkiri province. This awareness programme ensured that the communities discussed and understood the threats to local fishery resources, the benefits of sustainable community fishery management, and the process of establishing community fisheries. The next step for the Project has been to work with the FiA and local government authorities to establish community fishery groups at the 5 target sites.

The Fishery Law provides guidelines setting out the process for community fishery group registration, including: establishing a management committee and internal rules and local fishery regulations; mapping of community fishery area and resources; establishment of conservation areas (important habitats such as deep pools and flooded forest with restricted fishing); and the creation of a community fishery management plan that incorporates a system of patrols to enforce local fishery regulations that protect aquatic resources and habitats for sustainable local use. The Project hopes to have these activities completed at the target sites by the end of 2009, with community fishery groups ready to fully implement fishery management plans.

WWF Cambodia is already working with the FiA to build community fishery group capacity to better manage their fishery resources. To this





# COMMUNITY FISHERIES PROJECT



Chan Sokheng



end, the Project has been working to build the capacity of community fishery group committees by conducting a study tour to community fishery groups already successfully established in Kampong Thom and Siem Reap provinces, in order to learn about their experiences. The Project has also worked with the FiA to provide training courses to the community fishery groups on fish abundance survey and fish catch monitoring techniques to enable improved local understanding of local aquatic resources available and trends in local fish biodiversity and numbers. This information is important for communities to monitor the effectiveness of community fishery management activities.

## Project outputs

- Communities at the five target sites understand and recognize the benefits of community fishery management and have agreed to establish community fisheries.
- WWF Cambodia, Government of Cambodia and communities are working effectively together to establish community fisheries
- Successfully completed local fisheries baseline surveys and established a community

fish catch monitoring system at 2 villages, with training provided to 3 other villages.

- The establishment of community fishery management structure and internal rules and regulations for community fisheries is underway at the 5 target sites. In 2 villages the CF committee has been elected and local regulations on permitted fishing activities have already been agreed upon.
- Community fishery enforcement patrols have been initiated in 2 villages.
- Planning for community fisheries management has been initiated, with communities mapping aquatic resources, conservation areas and community fishery boundaries.

## Project partners

- Fisheries Administration
- Local Commune, District and Provincial Government authorities
- ExCom (Executive Committee for Provincial Rural Development).

*Production August 2008*

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# CLIMBING AMBITION: PHASE II

## A SWITCH TO SUSTAINABLE RATTAN HARVEST & PRODUCTION



### Introduction

In partnership with Cambodian government institutions, WWF Cambodia has embarked on a project to identify which species of rattan are produced, harvested, processed and traded in order to develop a sustainable rattan harvesting model.

Rattans are climbing palms belonging to the Palmae family. There are around 600 different species of rattan belonging to 13 genera. Many species, including some of commercial importance, are restricted to certain areas of the country.

Rattan is an important commodity in international trade and generates significant foreign exchange. At the local level, rattan plays an important role in the livelihoods of rural communities as a source of both food and income.

### Cambodian rattan resources

In Cambodia, 14 species have been recorded and the survey identified the following 12 rattan commercial species as potential for sustainable management, *Calamus erinaceus*, *Calamus godefroyi*, *Calamus palustris*, *Calamus viminalis*, *Calamus rudentum*, *Calamus salicifolius*, *Daemonorops jenkinsiana*, *Calamus tenuis*, *Calamus sp*, *Myrialepis sp*, *Plectocomia sp*, *Korthalsia bejaudii*.

The three year project entitled: A switch to sustainable rattan harvest and production in Cambodia and Lao PDR consists of two phases.

**Phase 1:** The first phase, which ended in June 2006, marked the completion of a field survey which identified rattan species, their distribution and trade in the following provinces: Kampong Thom, Preah Vihear, Siem Reap, Battambang, Uddor Mean Chey, Pausat, Koh Kong-Cardamom Mountain, Kampot-Bokor, Virachey-Rattanakiri, Kratie, Keo Seima-Mondulkiri, and the municipalities of Pailin city, Ream National Park and Sihanoukville.

According to the survey results, *Calamus viminalis* and *C. palustris* could be the ones to receive first priority to develop plantations, because of their abilities to grow countrywide. The two rattan species were found in all survey sites and they are commonly used for mattress, basketry, and furniture. Some of the rattan species such as *Daemonorops jenkinsiana*,



*Calamus rudentum*, and Phdao Teuk Khmum (*Calamus sp.*) have been highly collected which led the species to be crucially threatened.

For this reason, sustainable management or conservation strategies must be established or otherwise the species would be extinct.

The survey found that rattan is one of the main Non Timber Forest Products and made a crucial contribution to local livelihoods, especially in small cities. Rattan canes are vitally important to farmers – providing extra income in addition to their normal agricultural activities.

Cambodian rattan resources have been heavily depleted due to over-harvesting, shifting cultivation, forest logging and changing land use. Rattan cultivation for cane is not widespread but where it exists, the best quality rattan species are exported to Vietnam, Thailand and China and low quality rattan species are used for the domestic furniture and handicraft markets.

Lack of market information and inappropriate forest policy also hamper the development of the rattan market. Part of the follow-up activities for phase 1 of the project involve the setting-up of field research plots to obtain information on growth and yield of specific rattan species. In addition, a community based rattan network will be established and a market chain analysis carried out in Cambodia, Lao PDR and Vietnam.

**Phase 2:** In phase 2, the potential for sustainable harvest of rattan as an adjunct to local forest management regimes will be studied at a project site in Cambodia.





# CLIMBING AMBITION: PHASE II

## A SWITCH TO SUSTAINABLE RATTAN HARVEST & PRODUCTION



Preferred systems of harvest will be developed and tested at pilot studies carried out at community level to assess the potential of alternative products and agro-forestry plantations. Little is known of the existing rattan resources in Cambodian natural forest areas but interviews with villagers and other information sources indicate that rattan species are being over harvested, with some species at risk of local extirpation.

Given the existing open-access to remaining wild stocks, rattan farming is still at a nascent stage. A Sustainable Harvesting and Production System (SHPS) is needed to improve people's livelihoods and ensure long term sustainability. To develop this system it is important to gain an improved understanding of rattan ecology and its potential threats, socio economic reliance on the resource by the local communities, linkages to trade, value chain analysis and the potential for alternative or substitute products.

### Project outputs

The project aims to provide the following outputs:

1. Increased knowledge on rattan growth and yield through field research activities (set-up of Permanent Plot Sampling) with the aim to

support sustainable rattan management system (forest management and plantation)

2. Gain an improved understanding of the rattan market and supply chains to support the development of rattan marketing and trade in both countries.

3. Involve the private sector to develop and implement a Chain of Custody (COC) system in Cambodia as well as to propose a rattan certification system.

4. Develop a long-term framework to support research on rattan in Cambodia. The project will document patterns and trends at all stages of the regional rattan market and develop improved marketing systems which support local livelihoods.

### Project partners

The project which is part of the WWF and IKEA Co-operation on Forest and Cotton Project, started in 2006 and is scheduled to end in 2008. It is being carried out by WWF with cooperation from Save Cambodia's Wildlife (SCW) and the Faculty of Forestry (Royal University of Agriculture) with additional private sector involvement.

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# INTEGRATED LANDSCAPE DEVELOPMENT PLANNING



In partnership with Cambodian government institutions, local communities, and other stakeholders, WWF seeks to improve landscape-level development planning as a way to address the land-use challenge and contribute to inclusive, sustainable rural development.

## Introduction

The Greater Mekong Subregion (GMS) comprises six countries sharing the Mekong River: Vietnam, Cambodia, Thailand, Lao PDR, Myanmar, and China (Yunnan Province and Guangxi Autonomous Region). GMS countries are working together under an ambitious long-term strategic economic framework to develop the region.

One result of this increasing integration has been that Lao PDR and Cambodia, with their lower-cost labour and relative abundance of land, are emerging as regional exporters of agricultural products such as cassava, rubber and sugarcane. In recent years, there has been a proliferation of large-scale land concessions, mostly to foreign investors, to develop agriculture and pulp-and-paper plantations. In Cambodia, more than 1 million hectares of economic land concessions (ELCs) have already been issued.

## The Challenge

This concessions boom is creating numerous environmental concerns, including the conversion and fragmentation of globally important forests, displacement of small farmers into protected areas, and a significant increase in land-related conflicts. In addition, concessions can undercut alternative strategies for sustainable rural development. Given their negative impacts on rural livelihoods which depend on access to land and natural resources, concessions may lead to more, not less, poverty.

Additionally, the process of allocating and managing concessions has many problems, including a lack of adequate planning at various levels; an unclear division of responsibilities between national and provincial authorities, and between different government agencies; a lack of technical capacity and resources within the relevant institutions; and inadequate consultation with affected communities.

However, there are signs of a recent willingness to tackle these problems, including strong interest from provincial governments to collaborate with WWF around integrated landscape development planning.



## Objectives

*Addressing the Environmental and Social Challenges Resulting from Large-Scale Land Concessions* is a new project being implemented by WWF offices in Cambodia and Laos. Through this project, WWF and its partners will respond to the concessions challenge on a number of levels. Our work starts from the ground up, in Monduliri Province (northeastern Cambodia) and Champassak Province (southern Laos). Both provinces are hotspots of recent concessions development, and are trying to develop adequate planning mechanisms to ensure that future development is sustainable.

The project will seek to support better planning at a provincial and district level. The following outcomes are sought:

- 1. Integrated landscape-level development planning* to ensure that concessions are allocated and managed in a more coordinated fashion; do not negatively affect ecological functions and natural habitats; and do not create conflict with local communities.
- 2. Expanded capacity for landscape planning.* In Cambodia, WWF will further support Monduliri's new Working Group for Provincial Conservation Planning, a multi-agency platform that seeks to improve coordination between government departments and better integrate conservation and development objectives.
- 3. Greater participation of affected stakeholders.* Local communities are not always involved in decision-making related to planning processes. The project supports concrete opportunities for these groups to participate more fully.
- 4. More coherent and consistent policies and donor programmes* related to agricultural development, based on a greater understanding of environmental and social trade-offs. The project will engage with policy dialogues, technical working groups, and regional institutions to promote the strengthening of relevant policies and institutions.





# INTEGRATED LANDSCAPE DEVELOPMENT PLANNING

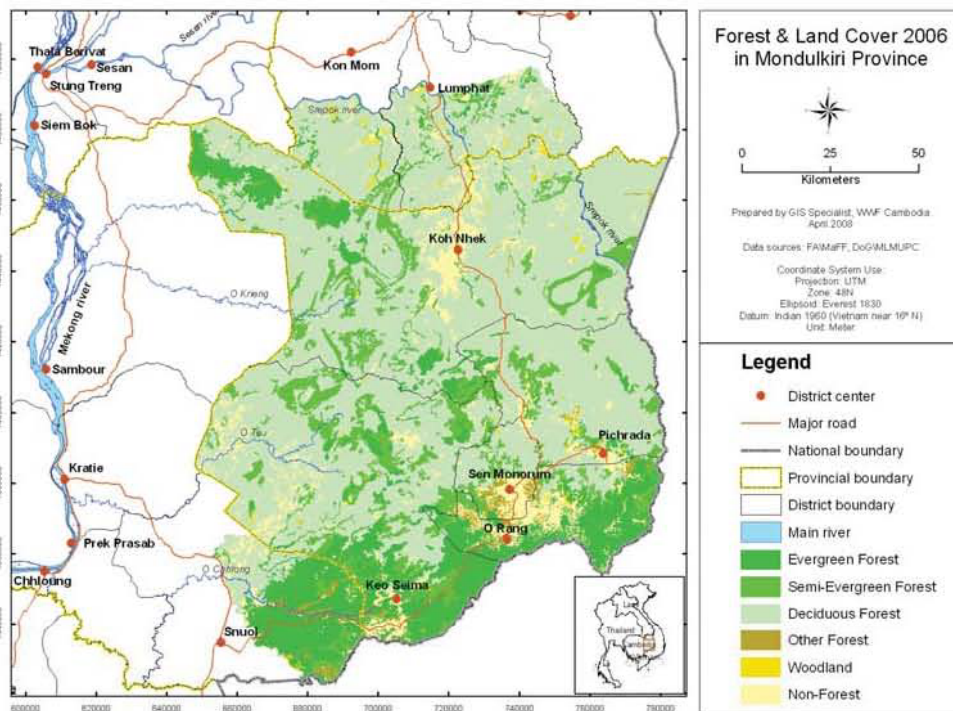


## Project Activities

1. Collaborating with government agencies to produce a detailed agricultural suitability zoning map for Pichreada District, Monduliri Province
2. On-the-job training and capacity building for key government staff in relevant provincial and district departments
3. Organizing a series of multi-stakeholder workshops to link communities, the private sector, and other groups to the planning processes
4. Promoting awareness among policymakers about environmental and social challenges associated with land concessions and agricultural development.

## Key Partners

In Cambodia, our primary partner is the government of Monduliri Province. The project is supported by the Swedish International Development Agency (Sida) and WWF's Macroeconomics Programme Office (MPO). In Cambodia, as in Lao PDR, it forms a subcomponent of the Biodiversity Corridors Initiative (BCI) already being implemented by WWF in Monduliri Province.



For more information about the project, please contact WWF Cambodia Country Director, Seng Teak, at [teak.seng@wwfgreatermekong.org](mailto:teak.seng@wwfgreatermekong.org)

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- conserving the world's biological diversity
- ensuring that the use of renewable natural resources is sustainable
- promoting the reduction of pollution and wasteful consumption.



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