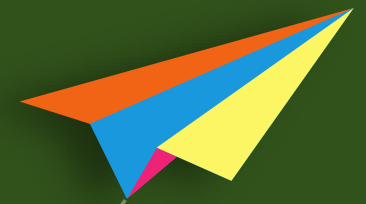
YOUR LOGO

Environment: Case Studies in CLMV

FACULTY OF ECONOMICS

THAMMASAT UNIVERSITY



Case studies

01 Lao PDR: Nam Theun 2 Hydropower

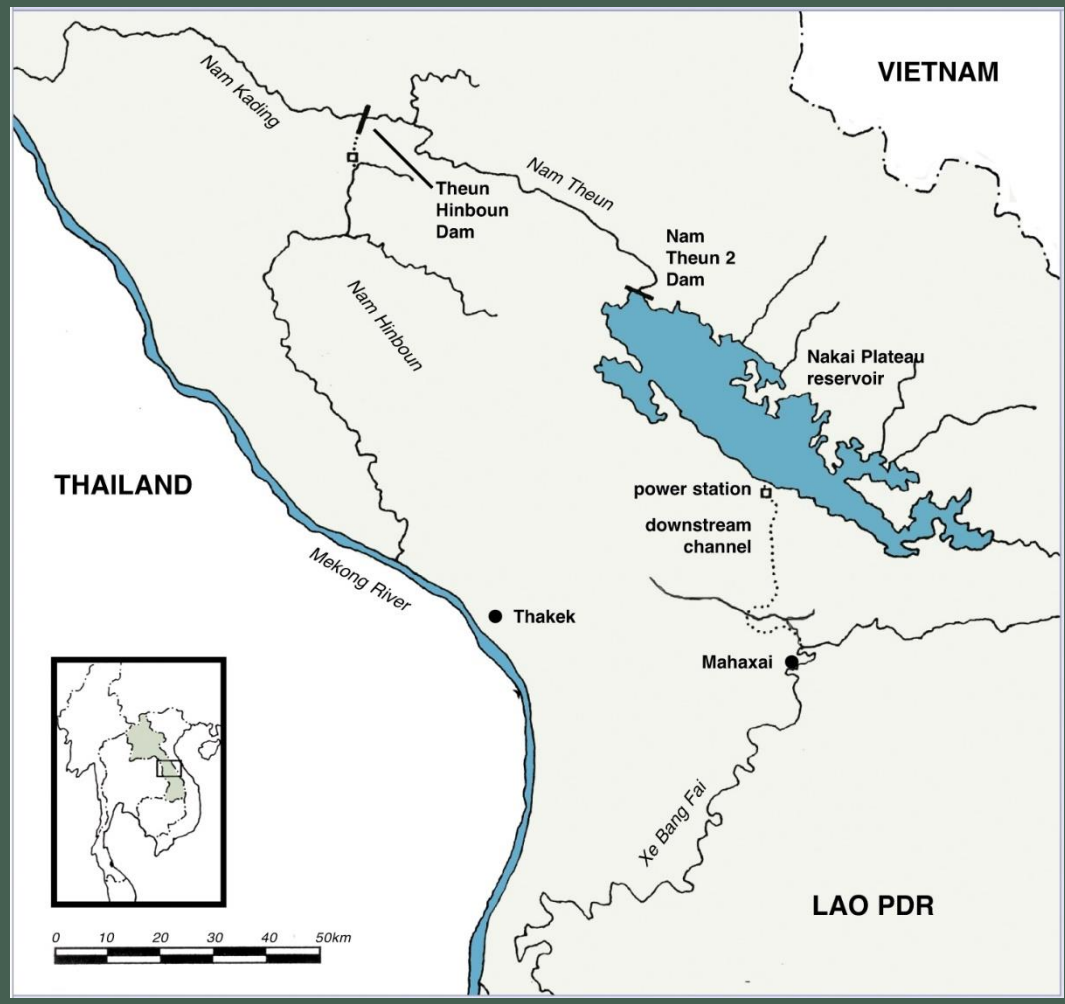
02 Cambodia: Biodiversity Conservation Corridors

03 Vietnam: Forestry and Livelihood Improvements

NAM THEUN 2 HYDROPOWER PROJECT

Project background

- Located in Khammouane province, one of Lao PDR' largest hydropower projects
- Total cost: $1.5 billion funded by various international funding partners and the Lao government
- Revenues contribute to road construction, repair, and maintenance, as well as rural electrification

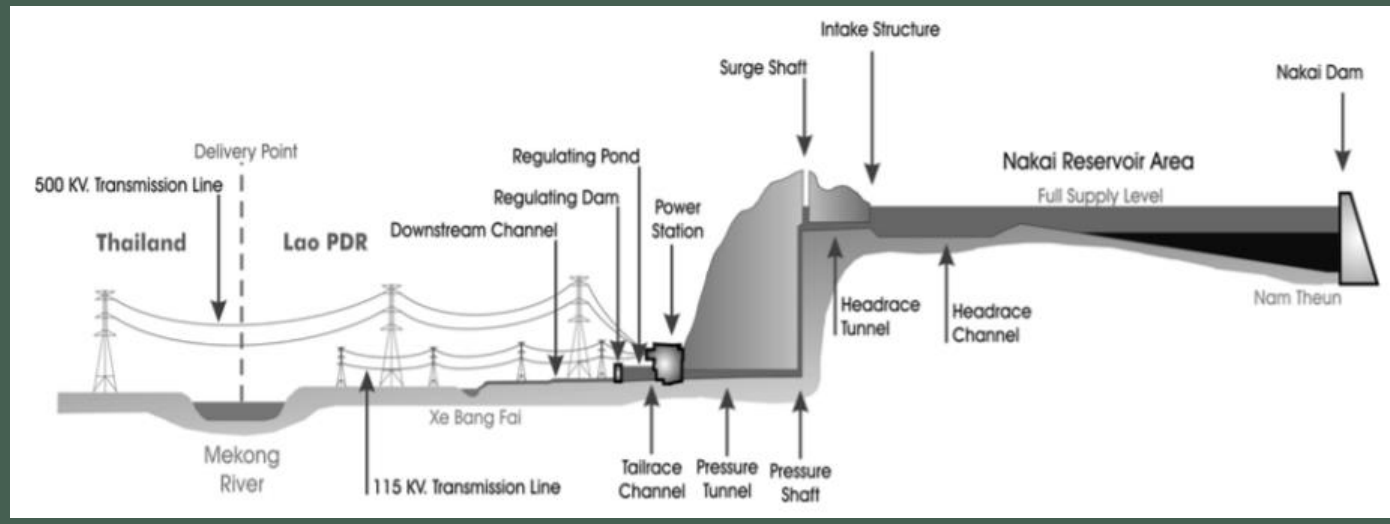


Implementation arrangements

- NT2 is a build-own-operate-transfer facility with a concession period of 31 year; thereafter NT2 will be transferred to the Lao government free of charge
- NT2 began commercial operations in 2010; power is exported to Thailand (1000 MW) and used domestically (70 MW)
- Implemented by the NT2 Power Company and the Lao government

Project features

- Application of industry-standard technologies and practices
- Generation needed revenues for poverty reduction
- Support for improved livelihoods through community-driven development with a strong focus on environmental protection
- The NT2 includes the development, construction, and operation of the facilities



Project outputs

- 1,070 MW trans-basin diversion power plant
- 450-km^2 reservoir on the Nakai Plateau
- 39-meter-high dam
- Powerhouse 350 meters below the plateau
- Regulating pond below the powerhouse
- 27 km channel from the regulating pond to the Xe Bang Fai River Basin

Project outcomes

- NT2 generated over $170 million between 2010 and 2017
- NT2 contributed to poverty reduction efforts, environmental management, and improved education and health through various programs (School Block Grants and the Health Equity Fund)

Socioeconomic impacts

- 6,300 people resettled; provided with community infrastructure, agricultural livelihood programs, and food supplements for vulnerable households
- Improved peoples' standard of living and doubled their incomes. 99% households were able to save (21% in 2006).

Socioeconomic impacts

- Improved primary school enrollment; from 31% to 94%; stunting dropped by 9%
- Improved access to markets with paved roads; decreased travel time from Nakai to Thakhek, from half day, to only one hour

Environmental impacts

- Supported villages downstream and upstream of the Nakai Reservoir to compensate for changes in river flows on fishing incomes, river gardens and other assets, and consequent changes in income and protein intake.
- Mechanisms in place to monitor fish levels and erosion and to support affected households through village development planning

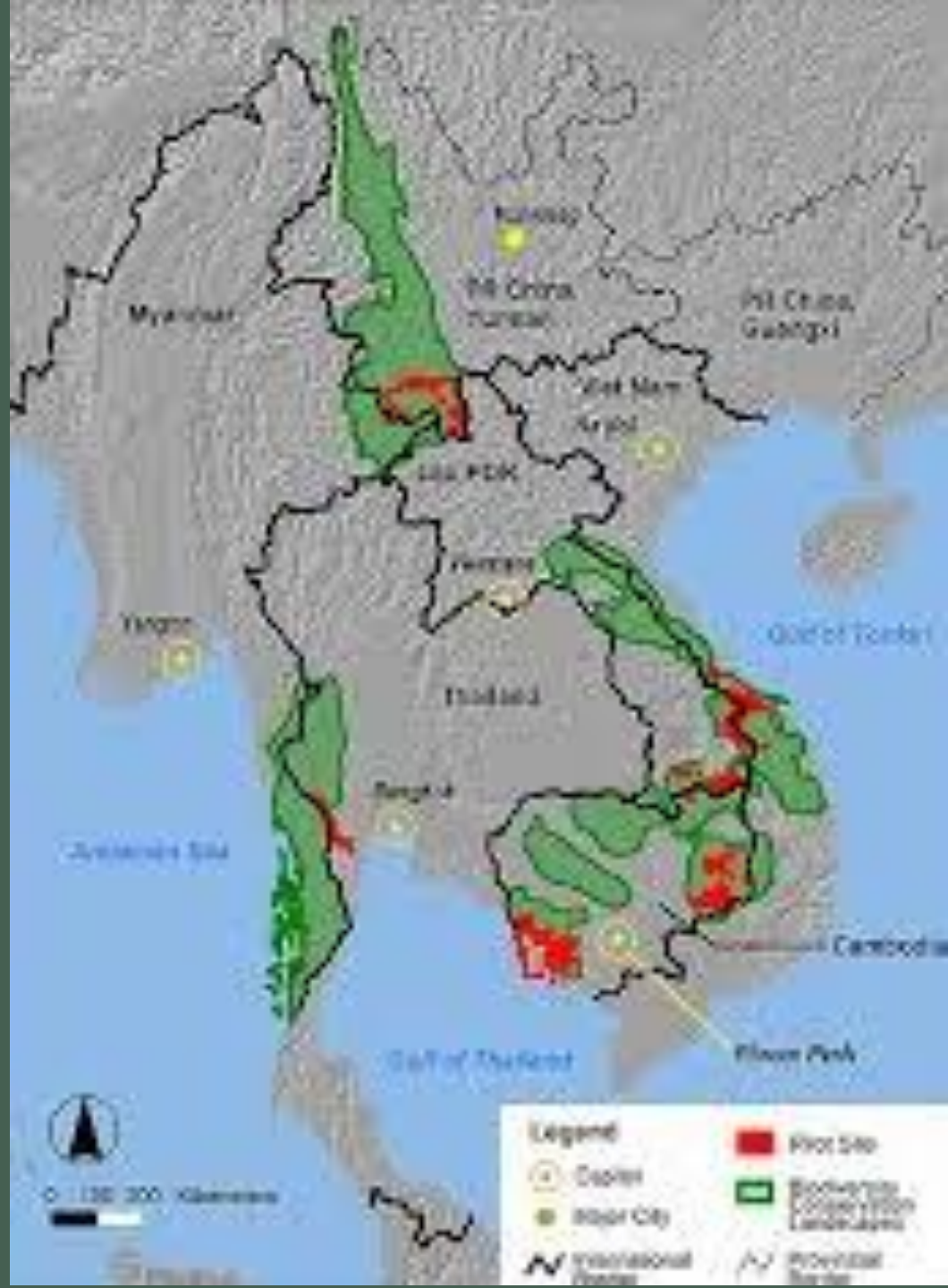
Environmental impacts

- Development of commercial forestry in the resettled area were less successful and therefore efforts were redirected to grazing, non-timber forest products, and conservation
- Some environmental groups and locals contend that the dam has depleted the fish supply and worsened the water quality
- Nam Theun 2 has gotten high marks for how its social and environmental impact was managed. The Laos government, World Bank and Asian Development Bank — which also backed the project — all billed it as a model of a measured approach to big dam construction.

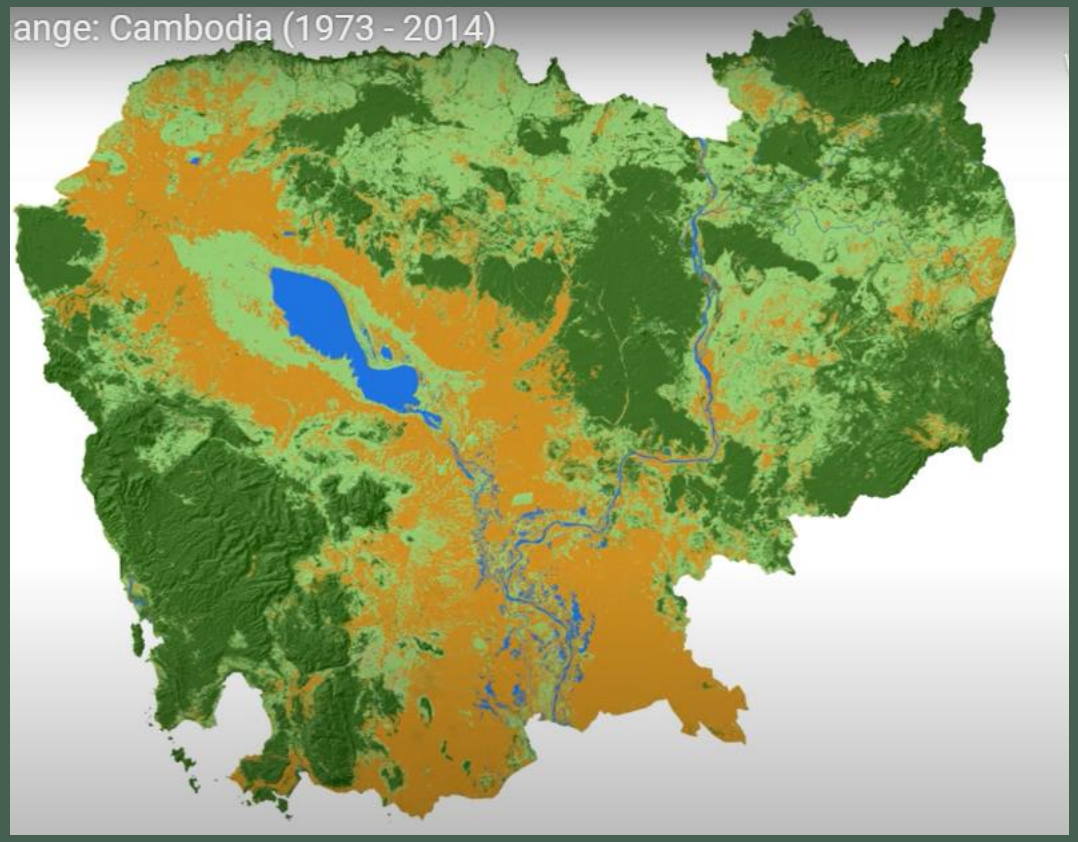
BIODIVERSITY CONSERVATION CORRIDORS

Rationale

- The Greater Mekong Subregion contains important biodiversity conservation landscapes that are vulnerable to increased development pressures and environmental degradation
- These arise from hydropower and roads construction, large-scale tourism infrastructure, mining, and plantation agriculture



Forest cover change



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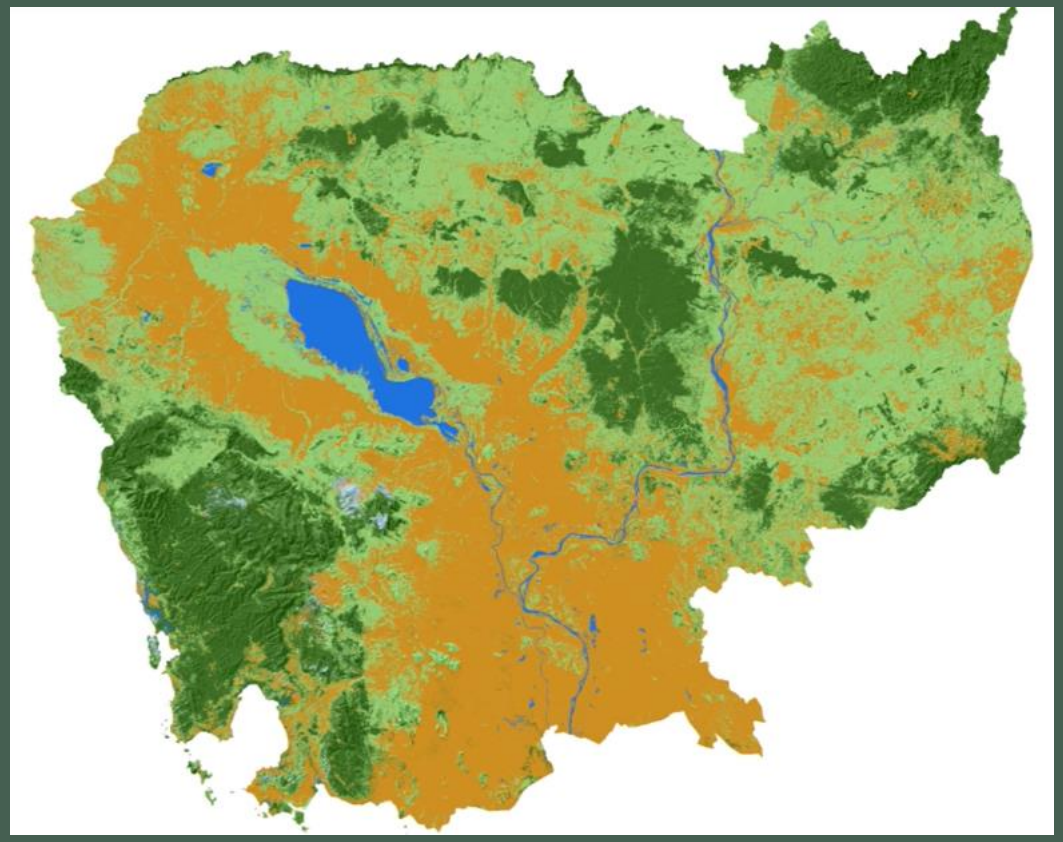
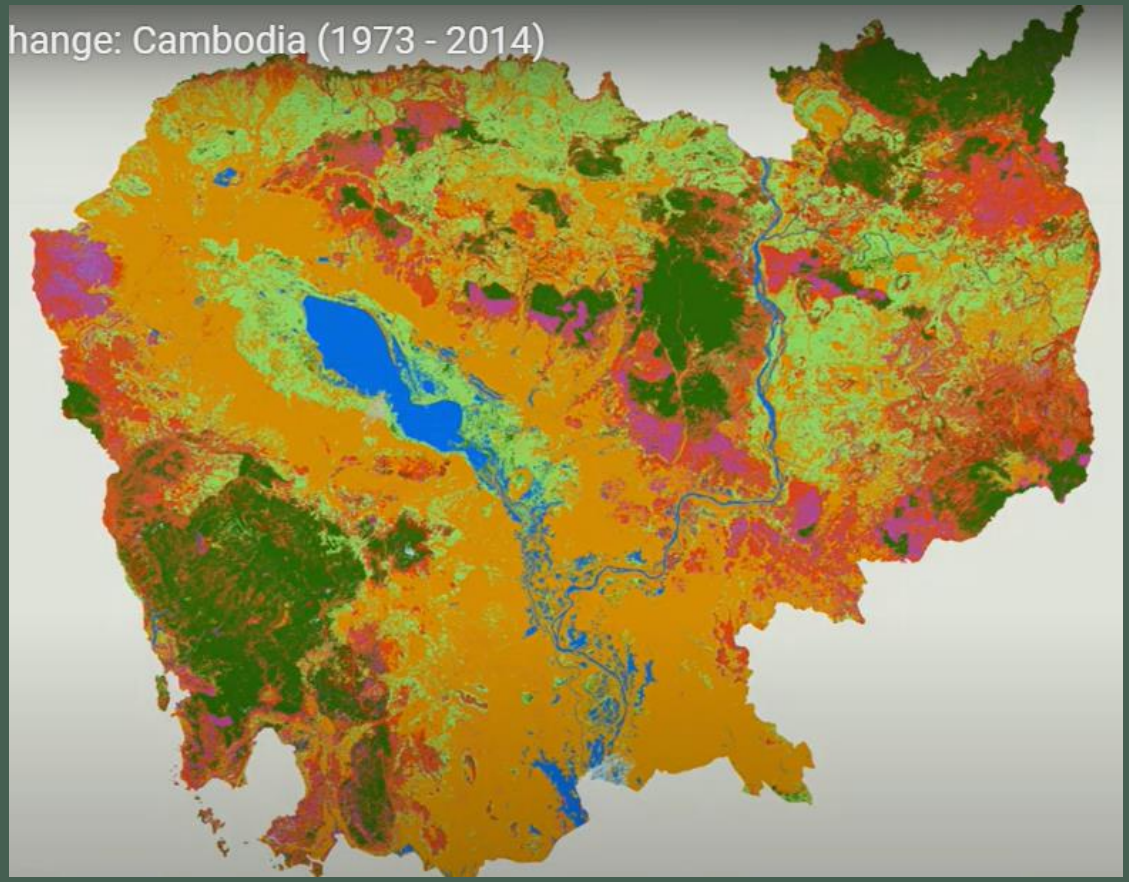


1995

Forest cover change

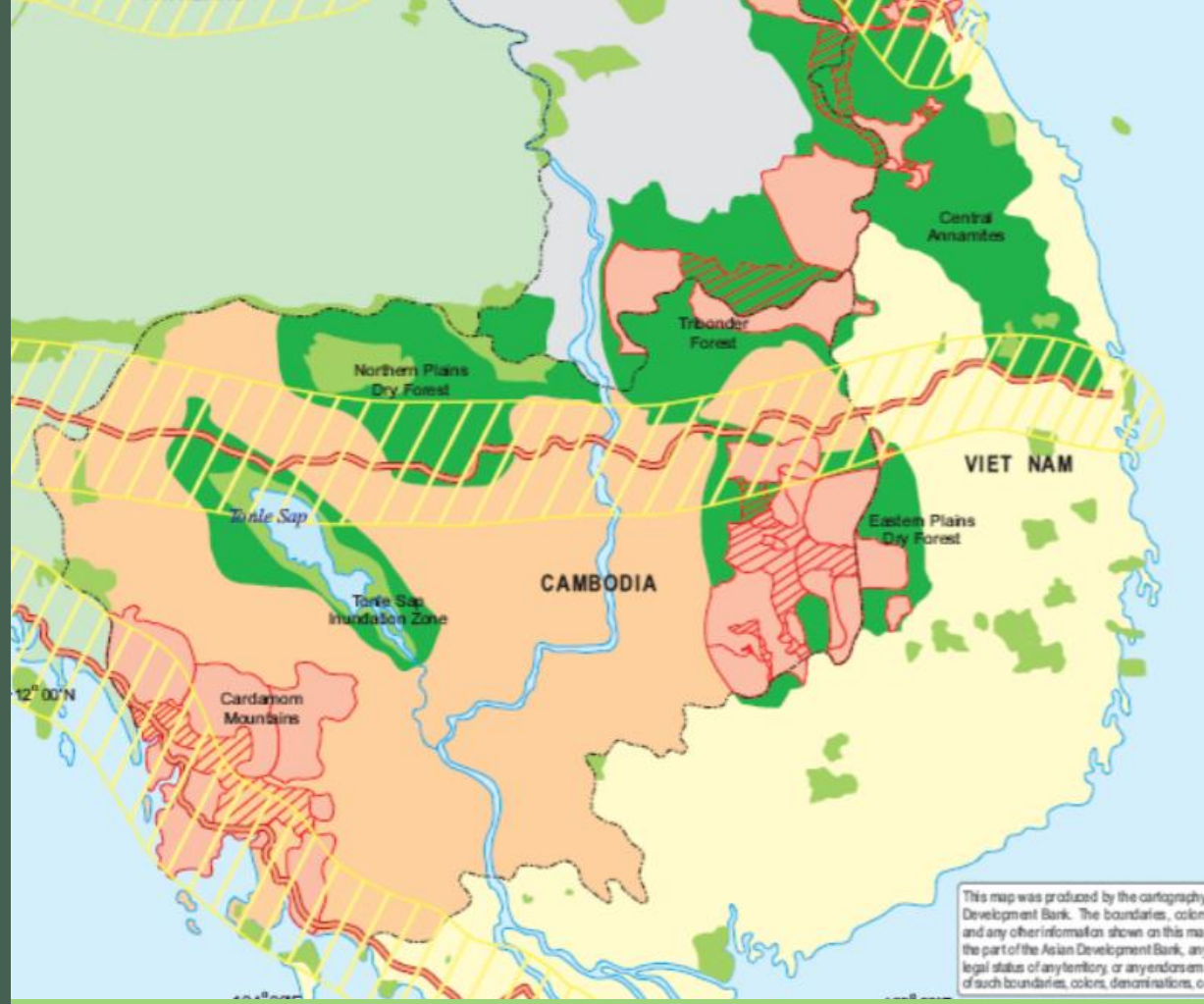
	1965	1992	1996	2002	2005	2010
Coverage	74.0%	59.8%	58.6%	61.2%	59.1%	57.1



2014

Project background

- Aims to enhance transboundary cooperation for preventing and mitigating fragmentation of biodiversity rich forest landscapes
- Location: Cardamom Mountains in Cambodia, Triborder Forest areas located in southern Lao PDR, and the Central Annamites in Viet Nam
- Covers more than 1.93 million ha; impacting 35,000 ethnic minority and poor households



The high-value area contains important biodiversity conservation landscapes that are vulnerable to increased development pressures and environmental degradation which need to be conserved to safeguard local livelihoods and investments in energy and hydropower, transport, water, and food security enhancing sectors

Project components

Tenurial security to poor households and ethnic minority groups

Restoration of habitat on degraded forestlands with tree planting of native species

Improved livelihoods and income-enhancing small-scale infrastructure

Project outputs

- Institutions and communities strengthened for biodiversity corridor management
- Biodiversity corridors restored, protected, and maintained
- Livelihoods improved and small-scale infrastructure support provided in target villages and communes

Project outcomes

- Climate-resilient sustainable forest ecosystems benefiting local livelihoods
- Sustainably managed biodiversity corridors in Cambodia, the Lao PDR, and Viet Nam

Social impacts

- Direct beneficiaries: poor upland farmers; indigenous communities; and women dependent on the forest ecosystem in 56 communes and 69 villages
- Average annual household incomes increased from $160 to $450
- Investments in forest conservation, livelihood programs, and rural infrastructure improved incomes and food security
- Provision of land use rights increased livelihood assets

Environmental impacts

- Encroachment due to improved access to conservation sites especially by outsiders
- Social exclusion/elite capture; Protocols in a number of ethnic minority communities determinbe “who gets what”

Environmental impacts

- Increased land value of land in project sites leads to land speculation
- May increase selling of ethnic minority land rights to the likes of tree plantation investors

Conclusion

- Establishing protected areas to safeguard diverse ecosystems has proven to be an effective development strategy
- Biodiversity conservation requires support of local communities; livelihood improvements are reasonable option to reduce pressure on land and forest resources
- Uncertain tenure and resource use rights in the regions surrounding protected areas leads to irresponsible development that degrades the environment
- Encroachment is degrading natural systems and needs to be addressed

THANK YOU!