Fishery Action Coalition Team

(FACT)

www.fact.org.kh

Working together for Sustainable Tonle Sap Basin and Fishery for People life

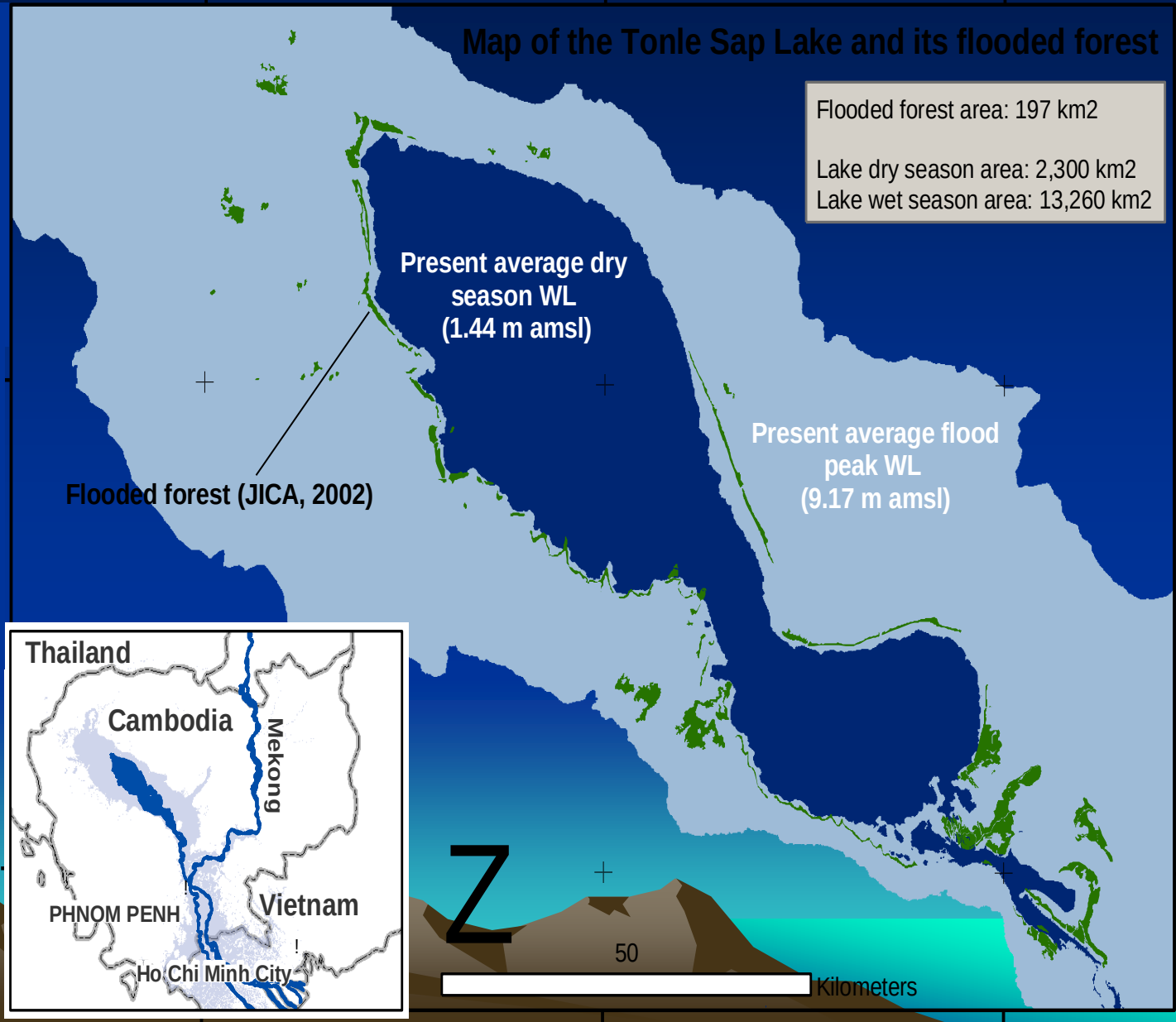
Sustainable Wetland Management

Sri Lanka on June 14-16th, 2010

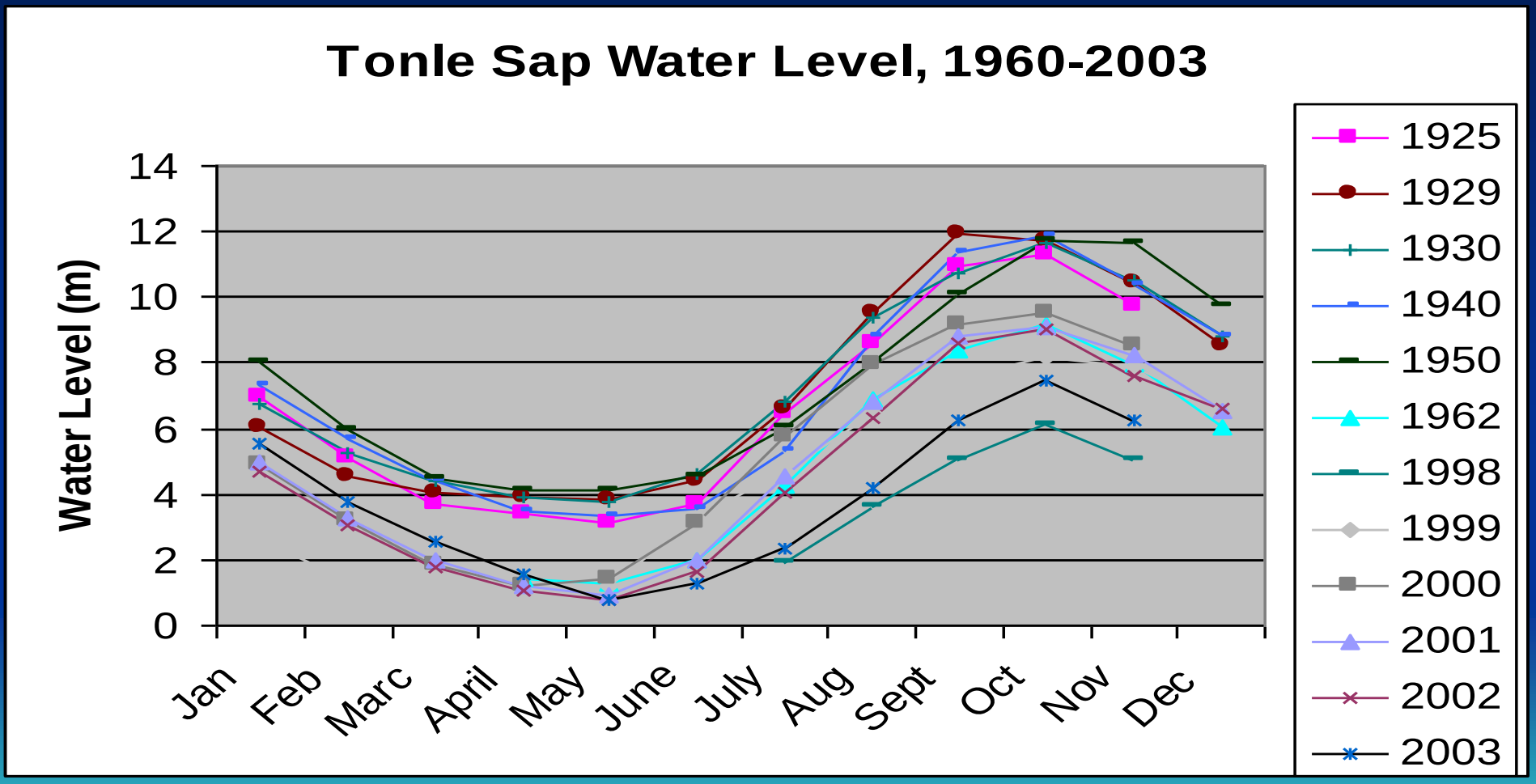
Presentation by Mr. Savath OM, Cambodia

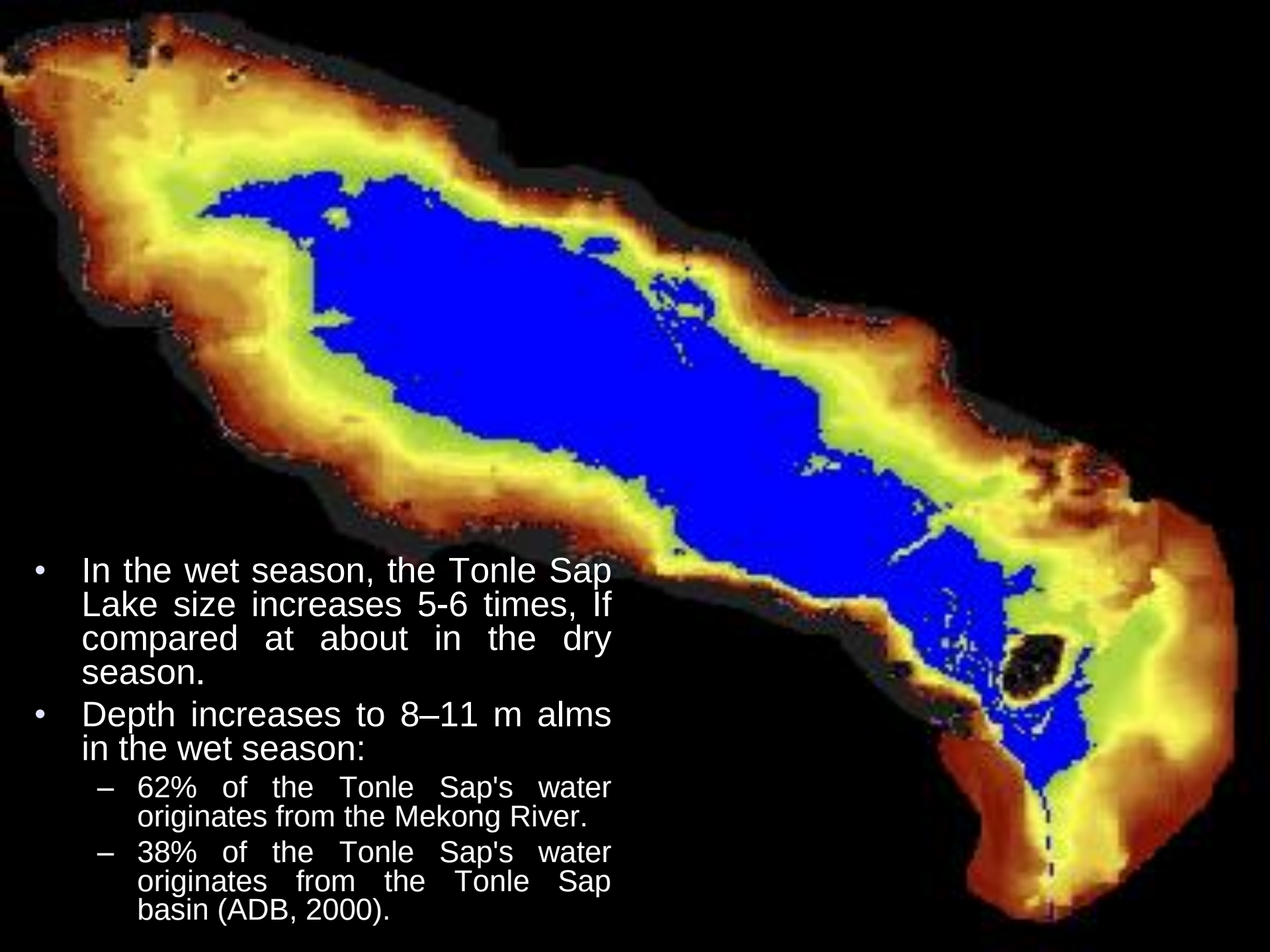
THAILAND
LAOS
MEKONG
RIVER
TONLE SAP
CAMBODIA
VIETNAM
Phnom Penh
GULF OF
THAILAND
CAMBODIA

Flooded forest: tall gallery stands of trees on the banks of lake and river
(McDonald et al,1997)



Hydrological fluctuation



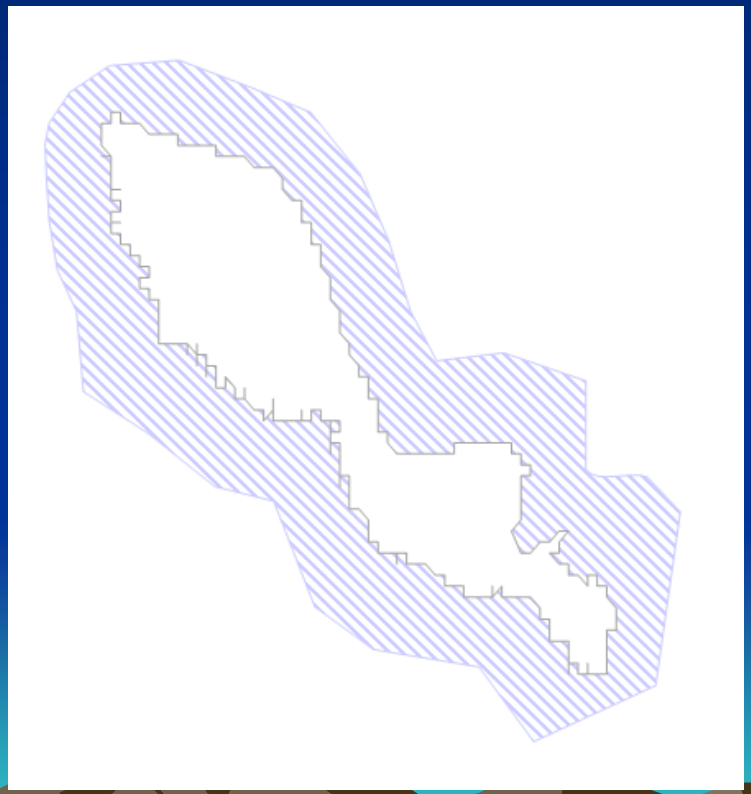


- In the wet season, the Tonle Sap Lake size increases 5-6 times, If compared at about in the dry season.
- Depth increases to 8–11 m alms in the wet season:
  - 62% of the Tonle Sap's water originates from the Mekong River.
  - 38% of the Tonle Sap's water originates from the Tonle Sap basin (ADB, 2000).

Wetlands, floodplains and fish productivity

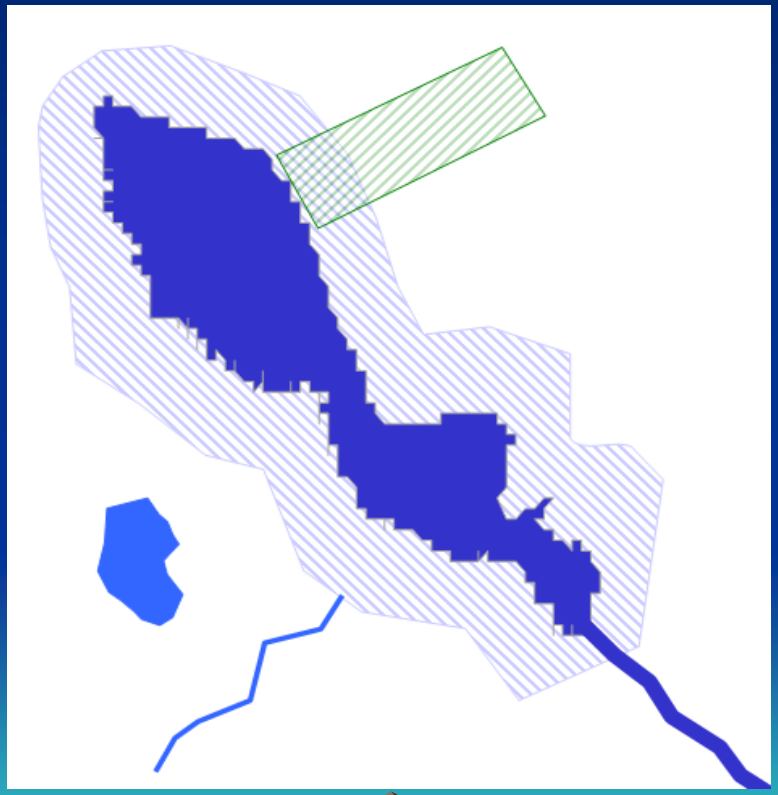
Floodplains

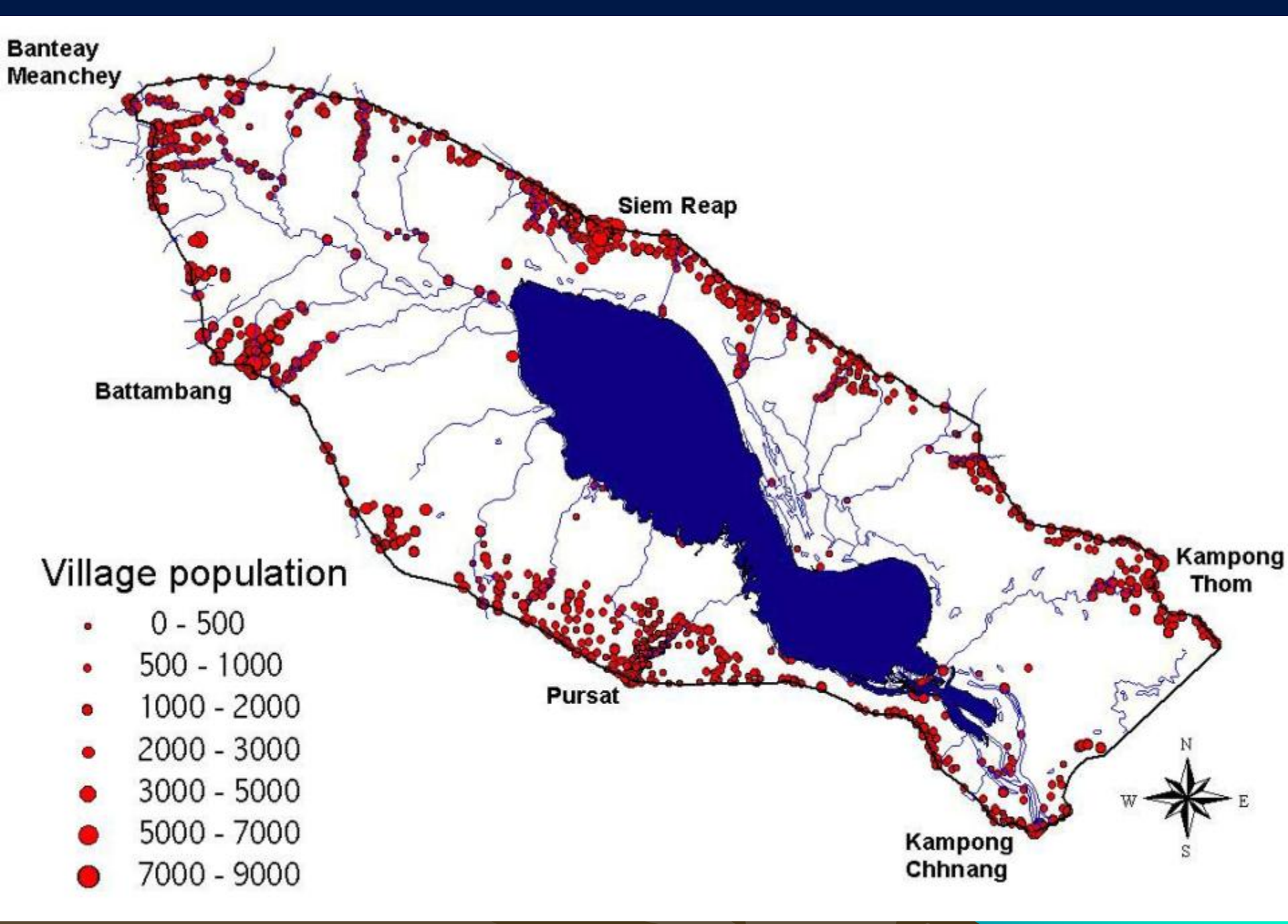
Rice fields = floodplain rice fields (high fish productivity)
+ rain fed rice fields (RRF, lower fish productivity)



Wetlands

(= floodplains + rice fields + permanent water bodies + aquaculture + swamps)




Banteay
Meanchey
Siem Reap
Battambang
Pursat
Kampong
Thom
Kampong
Chhnang
Village population
0 - 500
500 - 1000
1000 - 2000
2000 - 3000
3000 - 5000
5000 - 7000
7000 - 9000
N
W
E
S

Fishing Population in the Tonle Sap

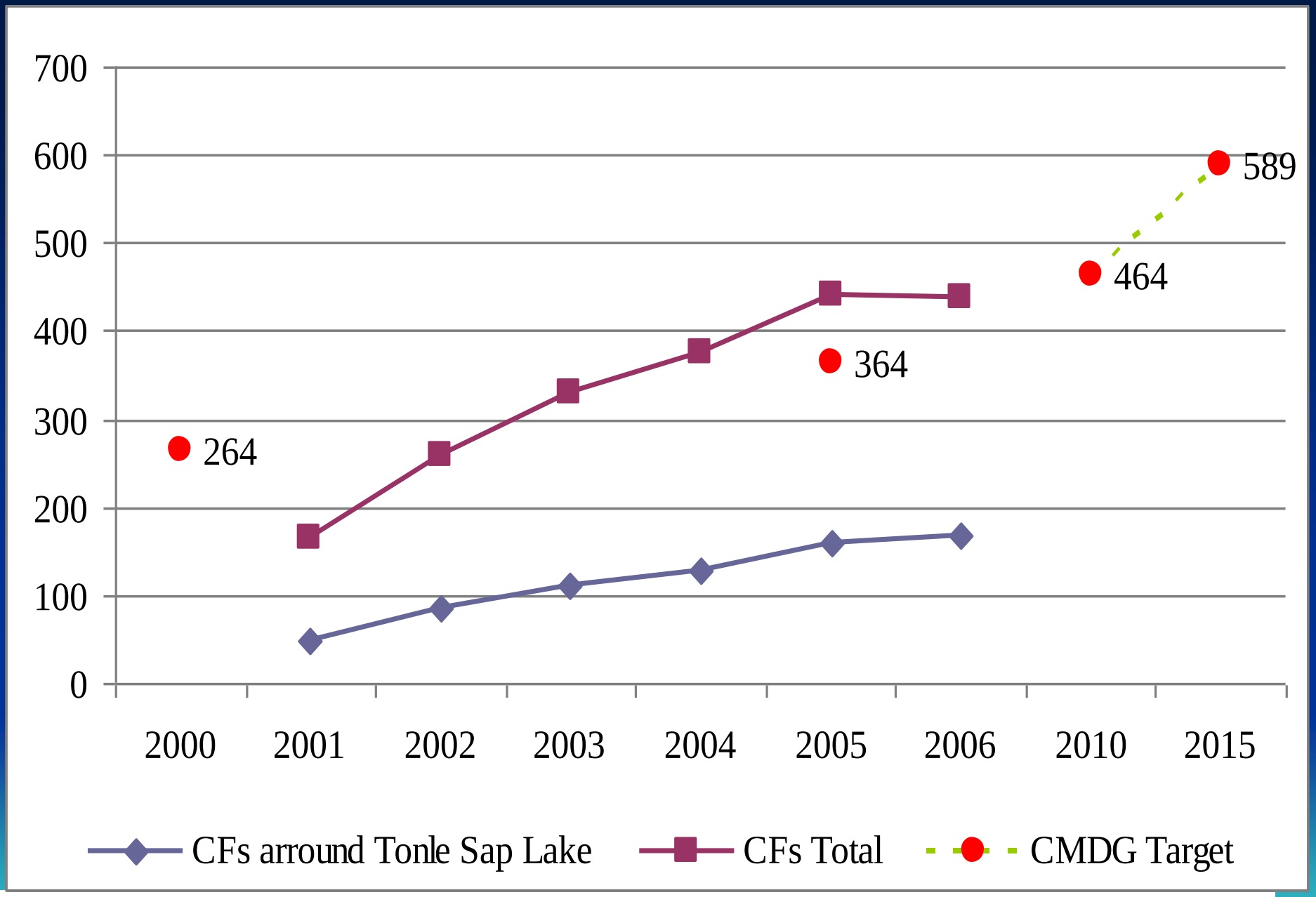
The Tonle Sap	**Area (km^2)**	**Population in 2008**	**Population in 1998**	Rate (percent)
Banteay Meanchey	6679	678,033	577,772	1.57
Battambang	11702	1,024,663	793,129	2.28
Kampong Chhnang	5521	471,616	417,693	1.21
Kampong Thom	13814	630,803	569,060	1.03
Pursat	12692	397,107	360,445	0.7
Siem Reap	10299	896,309	696,164	2.53
Tonle Sap Provinces total	60707	4,098,531	3,414,263	
Tonle Sap area (Between National Road 5 & 6)	14876	1,388,555[a)]	1,186,192	n/a
Cambodia	181,035	13,388,910	11,437,656	1.54

Source: Keskinen, 2003 and 2008; NIS, 2008; a) This is based on estimation

Fishing Lot in Tonle Sap Lake

Province	Fishing lot area in 2000		Fishing lot area in 2001		Net reduction in lot area (%)
	No. of lots	Lot area (ha)	No. of lots	Lot area (ha)	
Bantey Meanchey	4	32756	2	6,398	80.5
Battambang	12	146,532	9	102,718	29.9
Kampong Chhnang	19	62,256	12	45,085	27.6
Kampong Thom	7	127,126	7	69,353	45.5
Pursat	7	55,120	5	24,848	54.9
Siem Reap	7	83,941	3	22,725	72.9
Total	56	507731	38	271,127	46.60

Source: FiA, 2001. Sub-decrees of the fishing lot released for local people's use


700
600
500
400
300
200
100
0
2000
2001
2002
2003
2004
2005
2006
2010
2015
264
364
464
589
CFs arround Tonle Sap Lake
CFs Total
CMDG Target

Fishing Communities around Tonle Sap Lake

- Three types of community in Tonle Sap
  - Land-based communities—farming cum fishing community
  - Land and water based communities—stand stilt community
  - Water-based communities—floating community

Community Fishery in Tonle Sap Lake

Province	No. of Community Fisheries	Membership List	By-law and Regulation	Area Agreement
Siem Ream	22	22	22	21
Kampong Thom	30	30	30	30
Kampong Chhnang	52	52	52	52
Pursat	27	26	25	25
Battambang	38	38	38	37
Bantey Meanchey	6	4	4	2
Total	175	172	171	167

Sources: TSEMP, 2007 and TSBR, 2007

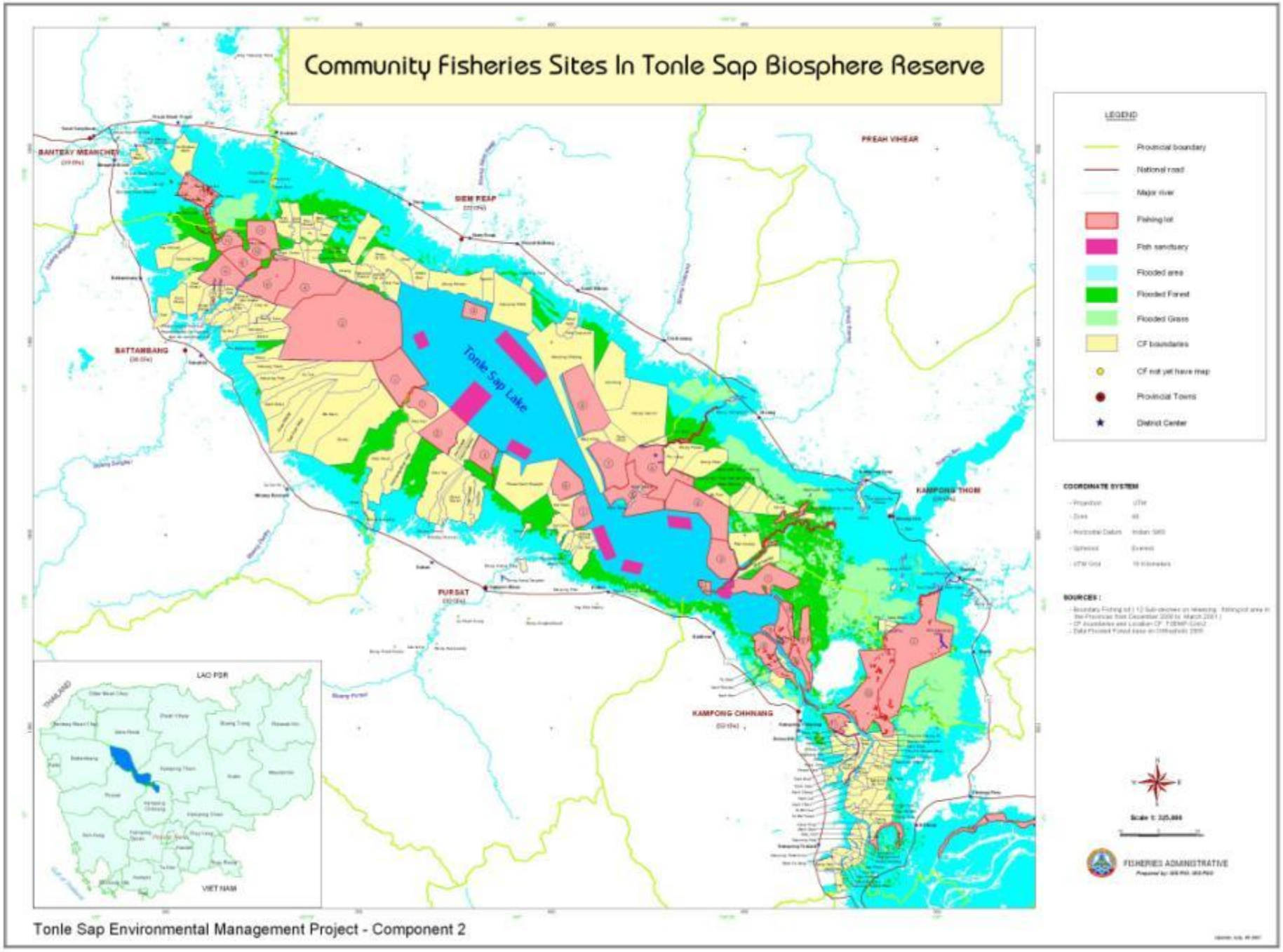
Land-based communities—farming cum fishing community

Picture: Chong Kneas commune and its rice fields around Tonle Sap Lake floodplains in Siem Reap Province

Dry season in Kampong Phluk commune, Siem Reap province

Wet season in Kampong Phluk commune, Siem Reap province

Floating villages


Community Fisheries Sites In Tonle Sap Biosphere Reserve
BANTEAY MEANCHEY
PREAH VIHEAR
SIEM REAP
BATTAMBANG
Tonle Sap Lake
KAMPONG THOM
PURSAT
KAMPONG CHHNANG
LAO PDR
THAILAND
VIET NAM
LEGEND
Provincial boundary
National road
Major river
Fishing lot
Fish sanctuary
Flooded area
Flooded Forest
Flooded Grass
CF boundaries
CF not yet have map
Provincial Towns
District Center
COORDINATE SYSTEM
SOURCES :
FISHERIES ADMINISTRATIVE
Tonle Sap Environmental Management Project - Component 2

Revenue from fisheries in Cambodia

- Inland fisheries produce an estimate 290,000-430,000 tons of fish catch each year.
- Estimated value at landing between US$150-200 million.
- Cambodian people eat 52.4kg of fish/ person/ year.
- It is widely believed that the Tonle Sap Lake provides two-thirds of fish consumed in Cambodia.

The Decrease in the Wet Season

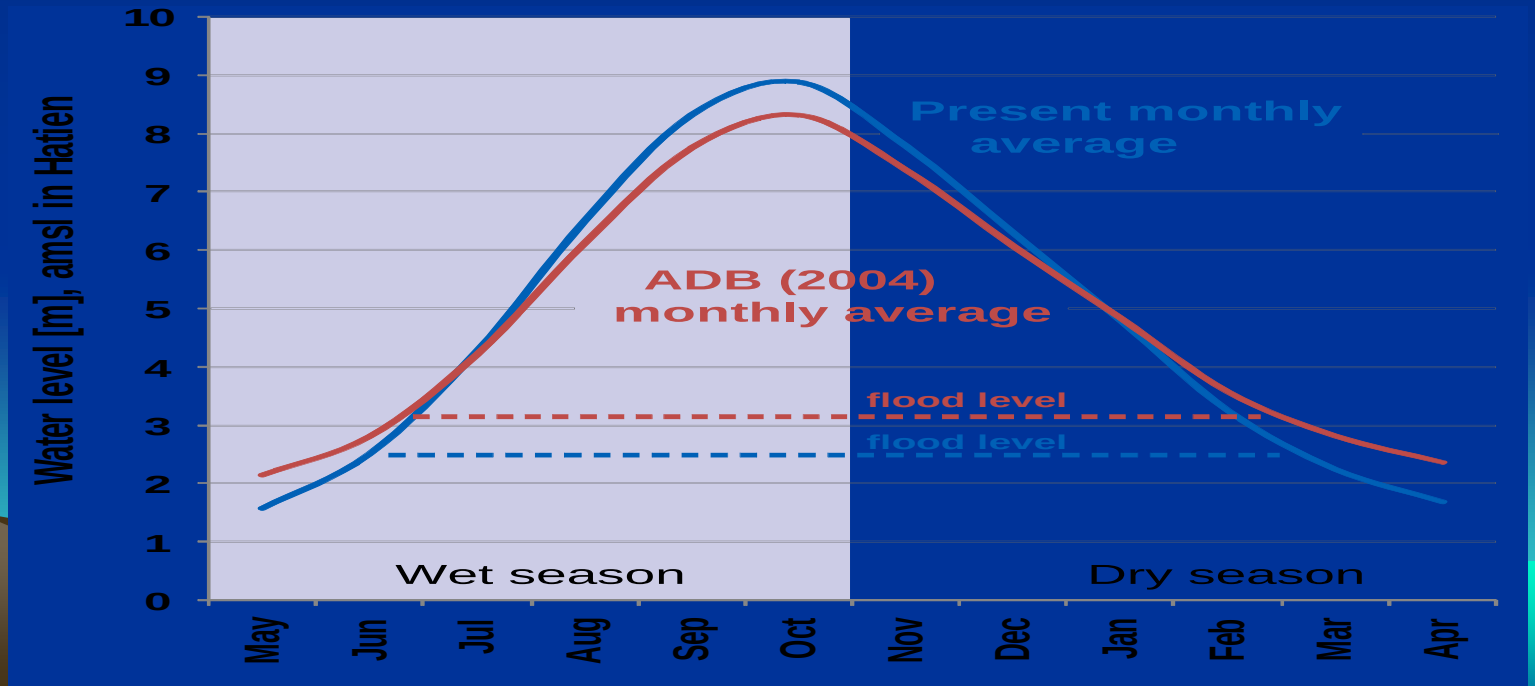
- **“Active storage” capacity** of the dams in the Mekong--**15,328 million cubic meter (mcm).**
- **The long term trend of discharge of the Mekong River suggest a decrease in discharge of around 10-12%** since 1960s (MRC, 2003).

The Decrease in the Wet Season Flow

Impacts on flood *(after ADB, 2004)*:

Duration:	**-5%**	(264→250 d)
Flood volume:	**-16%**	(60→52 km^3)
Floodplain area:	**-16%**	(11,000→9,200 km^2)
Min WL	**+0.6 m**	(1.44→2.04 m)
Max WL:	**-0.6 m**	(9.17→8.57 m)

(Kummu et al., 2008).



Fishery and advantages from Tonle Sap Lake

- Food security and exportation of fish in Cambodia
- Livelihood of fisher's in Cambodia

Wild bird and advantages from Tonle Sap Basin

- Riches natural resources and flooded forest in Tonle Sap Lake

Mekong River is changing flow to Tonle Sap Lake

- Changed water level
- Water pollutions
- Declining of flooded forest
- Declining of wildlife in Tonle Sap Lake

Major Hydropower Dams in the Mekong River Basin

	Existing large Project (operating and Under Construction)		Potential Large Project (Committed and Planned and Identified)	
	Number	MW	Number	MW
Cambodia	2	222	33	8,009
Laos PDR	11	1,779	32	5,788
Vietnam	30	5,910	65	11,160
Thailand	11	744	0	0
Myanmar	21	1,506	15	7,852
China	5	21,150	34	83,360
Total	**80**	**31,311**	**179**	**116,169**

Source: Peter King, Jeremy Bird, Lawrence Haas, 2007[1]

Issues and Impacts on Fisheries

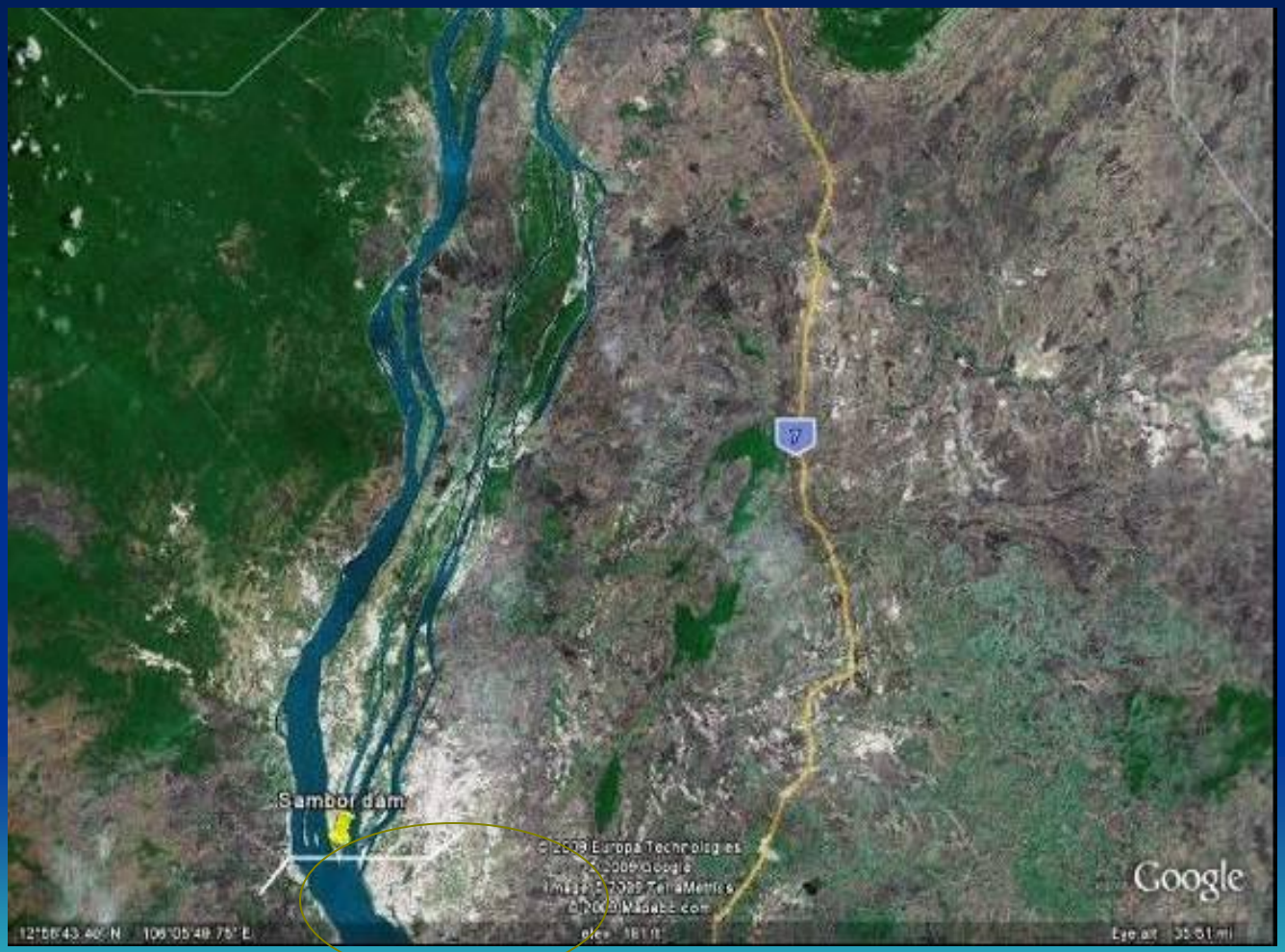
- Hydropower Dam along the Mekong River
- Tonle Sap Lake is source of oil and gas. Vietnamese and Japan Company studies the Oil and Gas in the Tonle Sap
- Poor Fisheries Governance

Sambor(2,600 MW)

Developer:

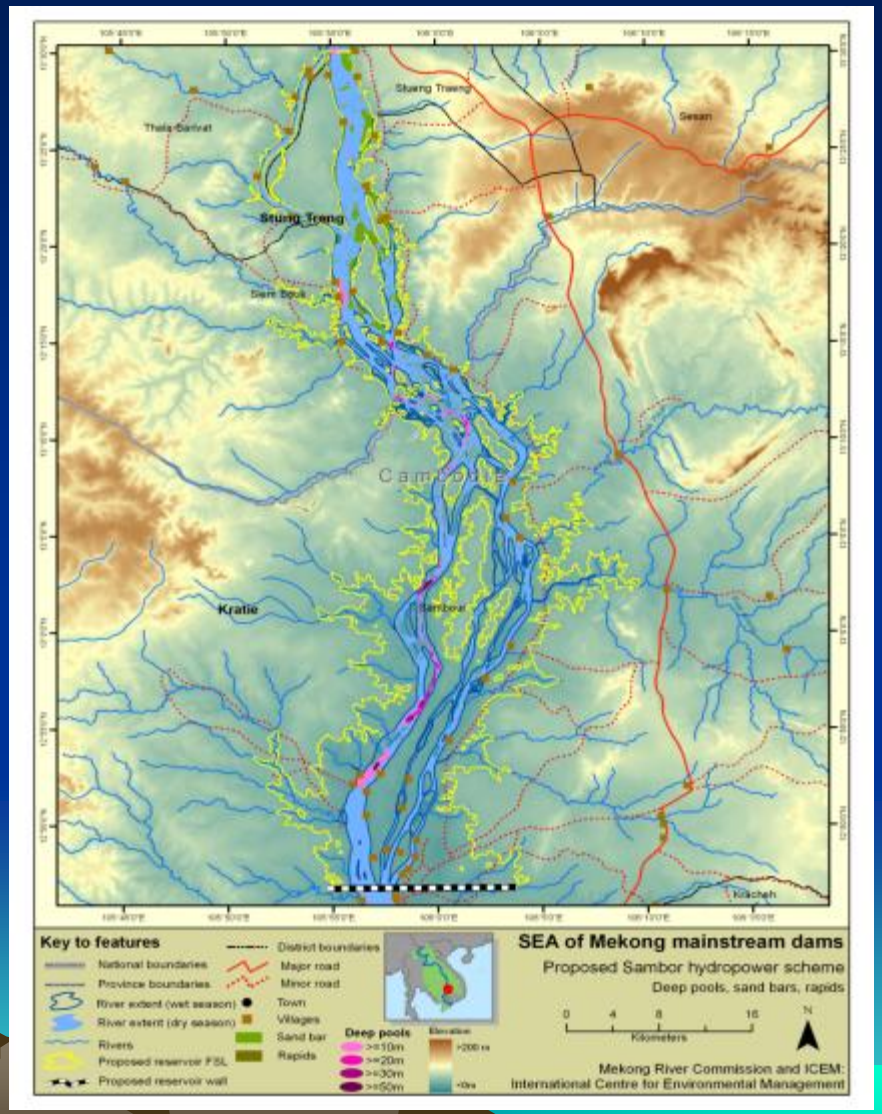
China Southern Power Grid

Dam and Reservoir in Cambodia



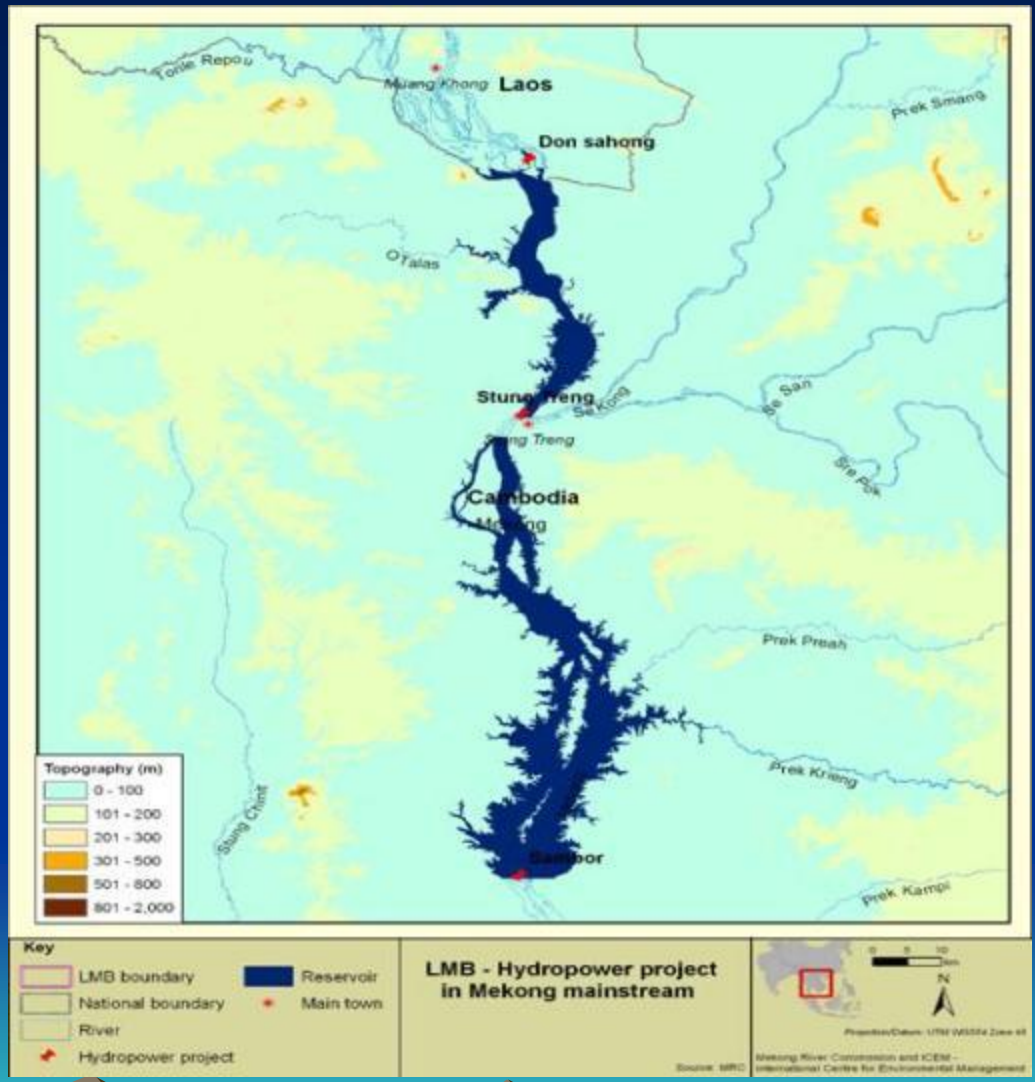
Proposed site of Sambor dam

- FSL = 40 masl
- MDL = 39 masl
- Area = 880 sq km
- Population affected 19,034



Reservoirs of proposed dams in Cambodia

- **Stung Treng**
  - Dam + Embankments 10 km
  - 22 m high(15 m head)
  - Reservoir 211 sq km
- **Sambor**
  - Dam + Embankments 18 km
  - 56 m high(33 m head)
  - Reservoir 620 sq km

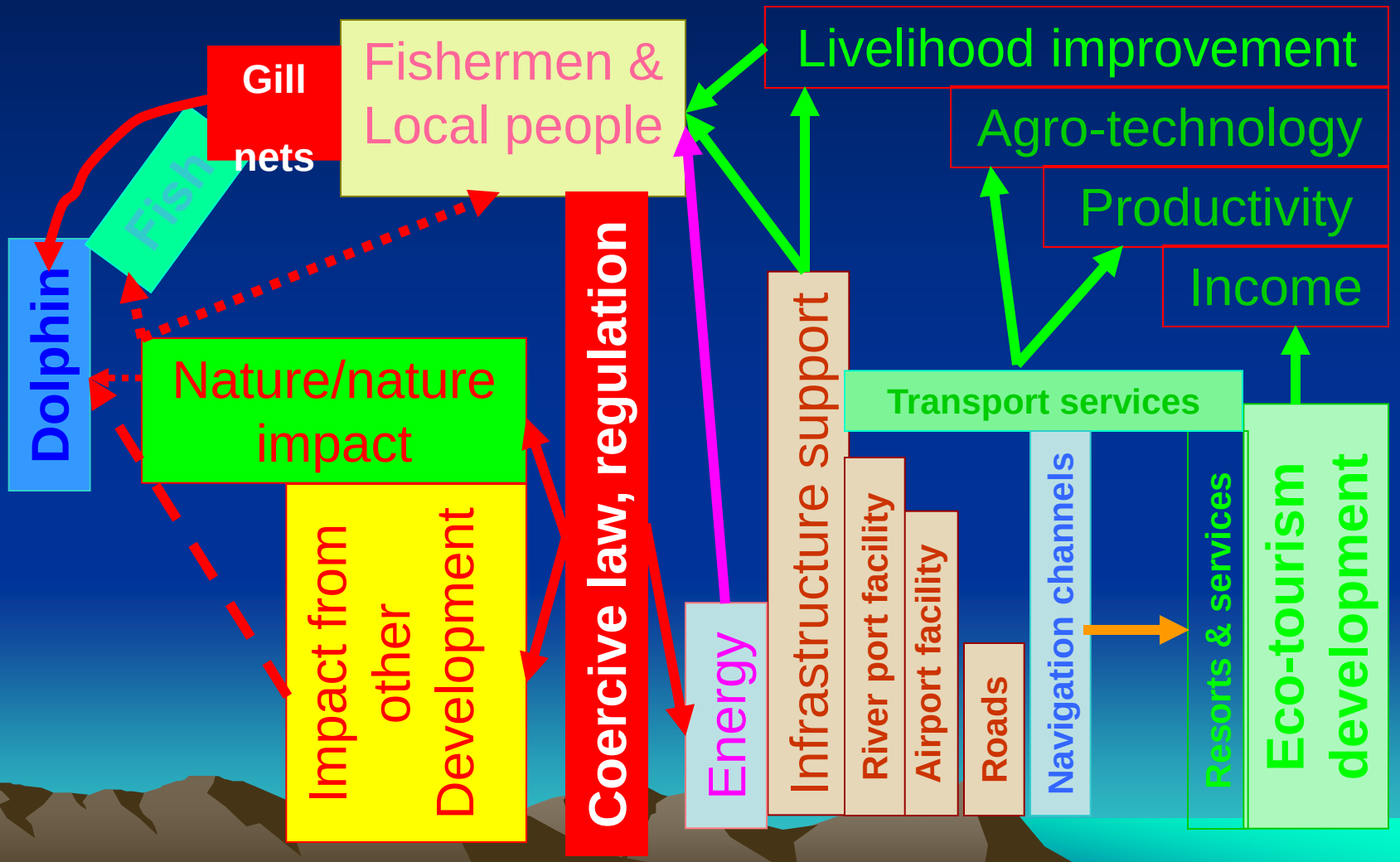


These fishing practices hampered the movement of dolphin

The gill net fishing caused serious problems to dolphin kill as both competed for fish

No chemical substances were found in the death dolphin: Why they died?

System approach to conservation of Mekong River dolphin and development



Thank you