



WWF

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# Mekong

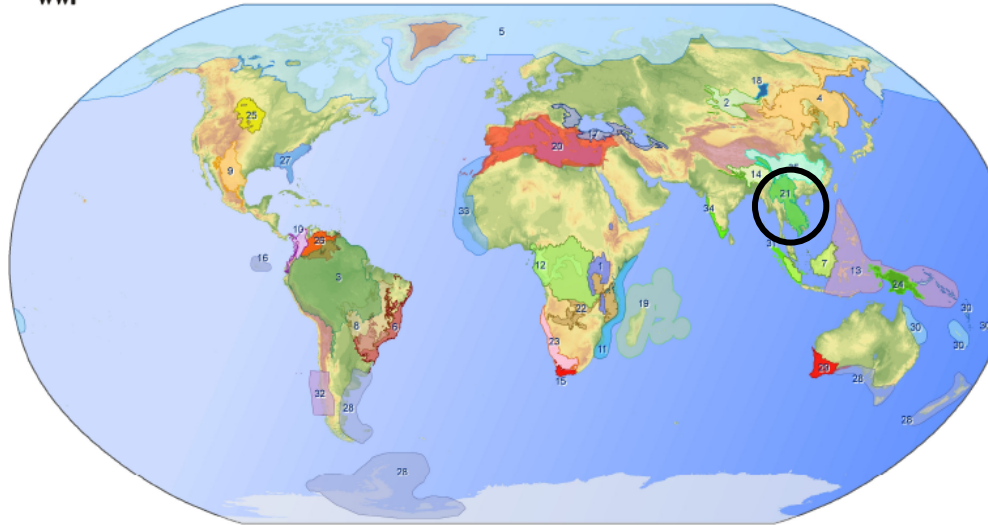
Climate Change in the Greater Mekong –  
a greater challenge ahead?



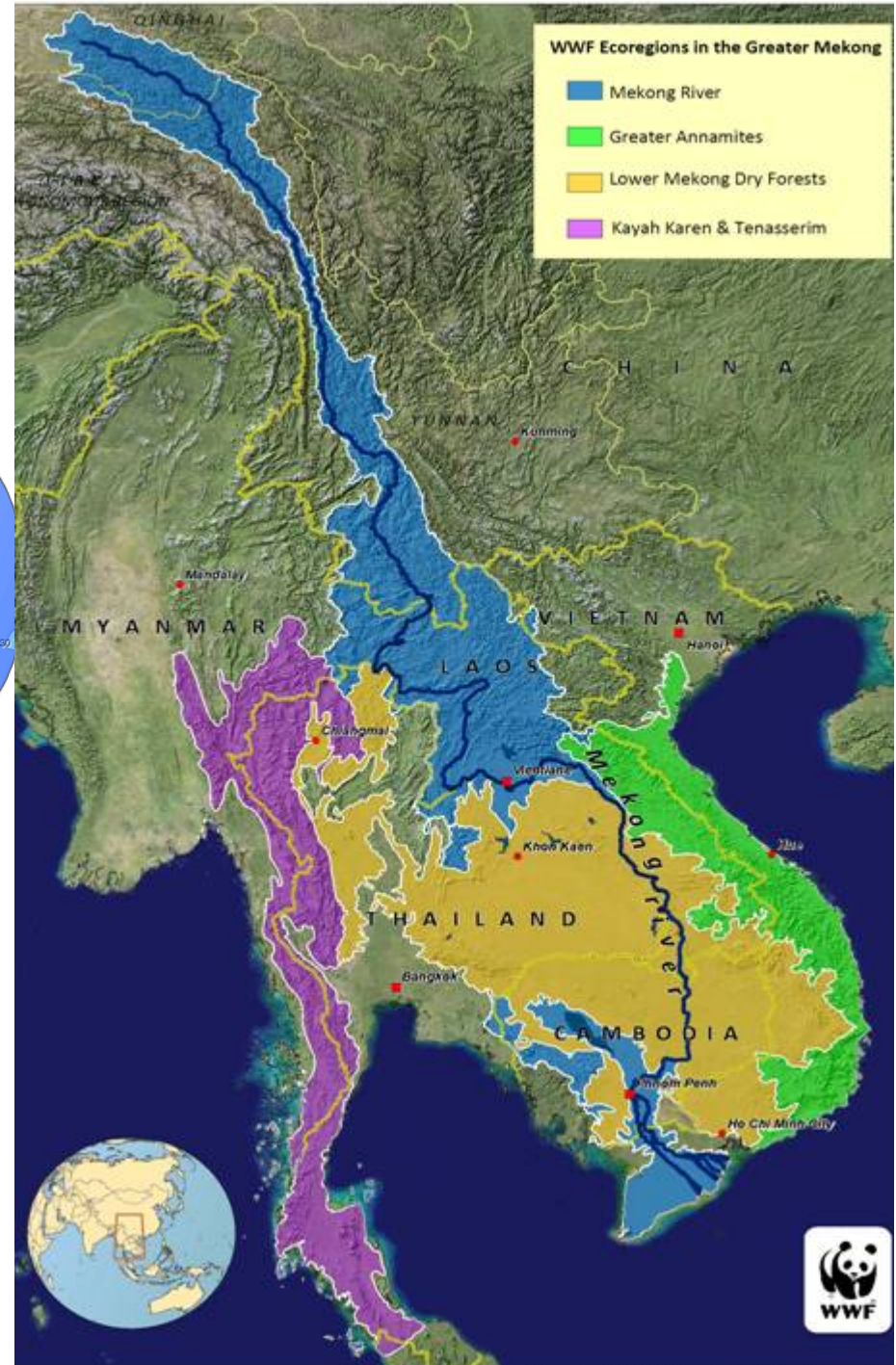
# Greater Mekong Region – greater biodiversity



## WWF Network Priority Places



- |   |                                      |                                       |                                     |
|---|--------------------------------------|---------------------------------------|-------------------------------------|
| 1, African Rift Lakes Region                | 9, Chihuahuan Deserts and Freshwater | 18, Lake Baikal                       | 27, Southeastern Rivers and Streams |
| 2, Altai-Sayan Montane Forests              | 10, Choco-Darien                     | 19, Madagascar                        | 28, Southern Ocean                  |
| 3, Amazon Guianes                           | 11, Coastal East Africa              | 20, Mediterranean                     | 29, Southwest Australia             |
| 4, Amur-Heilong                             | 12, Congo Basin                      | 21, Mekong Complex                    | 30, Southwest Pacific               |
| 5, Arctic Seas and Associated Boreal/Tundra | 13, Coral Triangle                   | 22, Miombo Woodlands                  | 31, Sumatra                         |
| 6, Atlantic Forests                         | 14, Eastern Himalayas                | 23, Namib-Karoo-Kaokoveld             | 32, Valdivia                        |
| 7, Borneo                                   | 15, Fynbos                           | 24, New Guinea and Offshore Islands   | 33, West Africa Marine              |
| 8, Cerrado-Pantanal                         | 16, Galapagos                        | 25, Northern Great Plains             | 34, Western Ghats                   |
|   | 17, Greater Black Sea Basin          | 26, Orinoco River and Flooded Forests | 35, Yangtze Basin                   |





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**Greater Annamites Ecoregion:  
globally one of the highest  
rates of endemism in a  
continental setting**



2009-04-14 7:07:49 AM M 1/3

26°C





# FIRST CONTACT

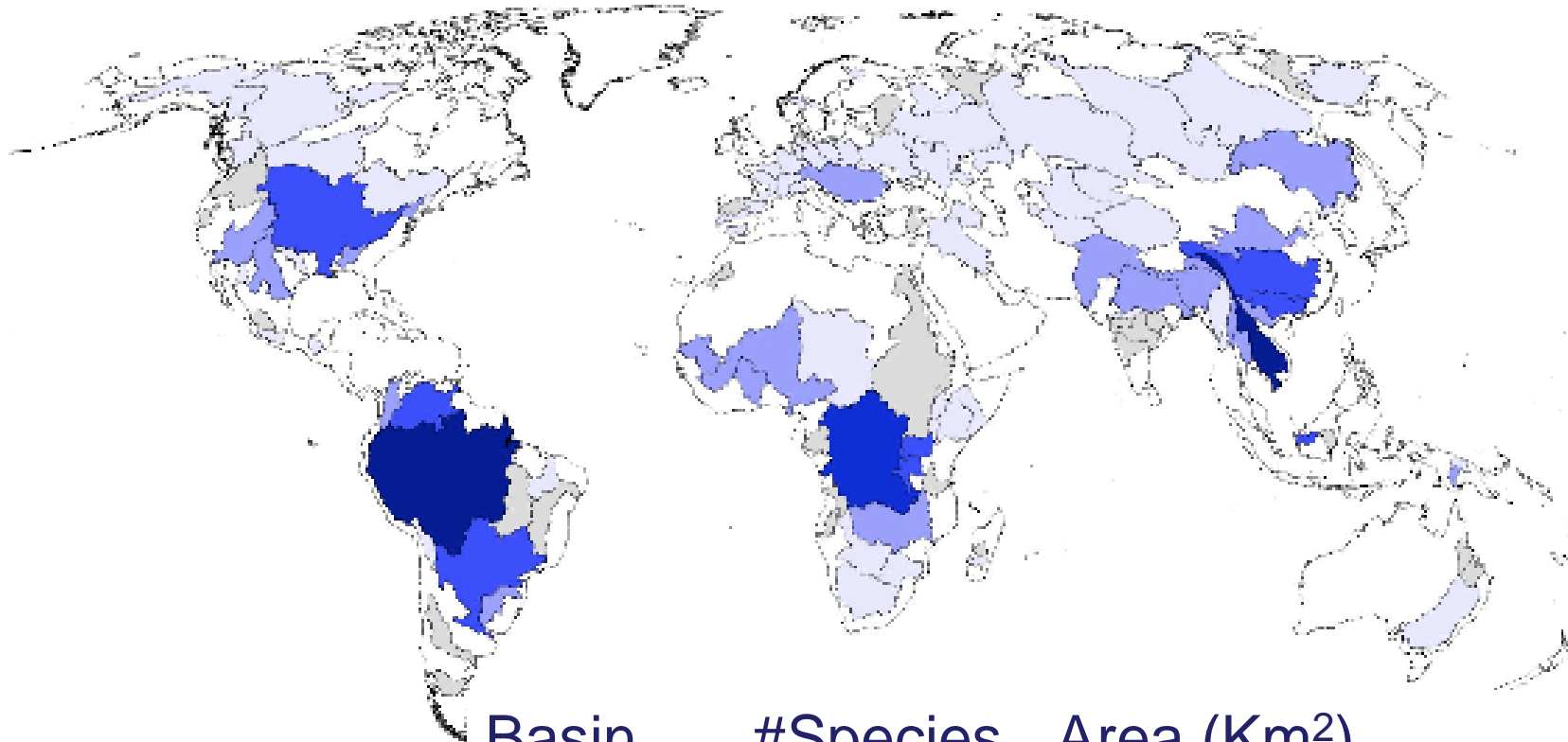
in the Greater Mekong



new species discoveries



# World's Richest River Basin for Fish Species by Area



Number of Fish Species



<u>Basin</u>	<u>#Species</u>	<u>Area (Km<sup>2</sup>)</u>
Mekong	1200	795,000
Amazon	3000	7,000,000

Source: WRI, 2001

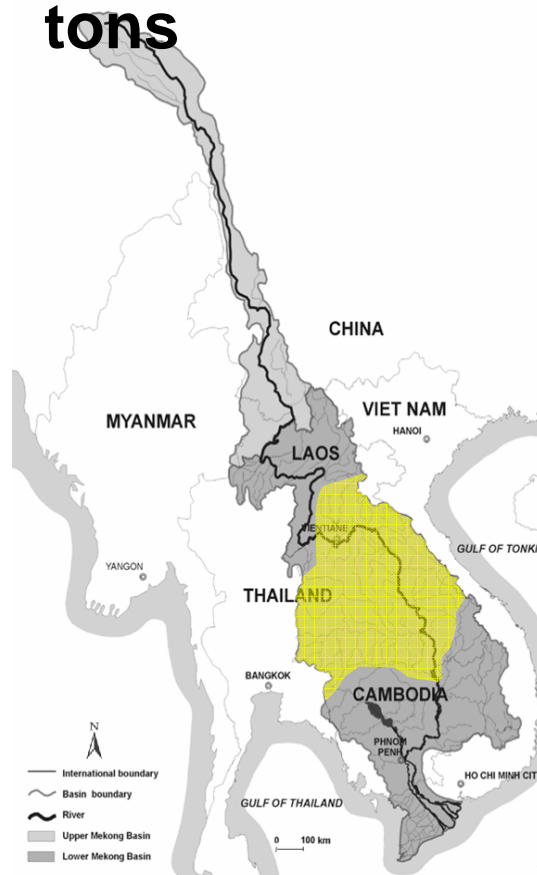


# The Mekong has the world's largest inland fisheries

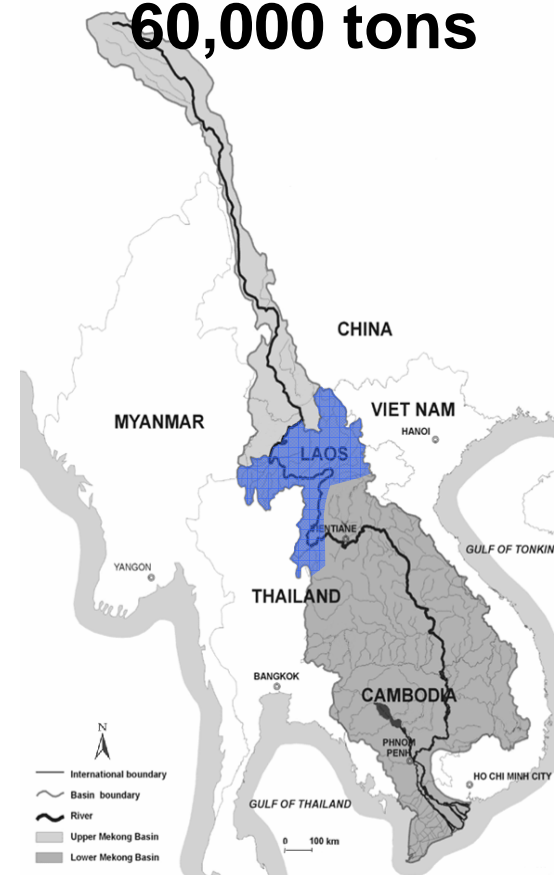
**Lower Mekong**  
**1-1.3 million**  
**tons**




**Middle Mekong**  
**0.9-1.2 million**  
**tons**



**Upper**  
**Mekong**  
**60,000 tons**



**Source: MRC 2009**

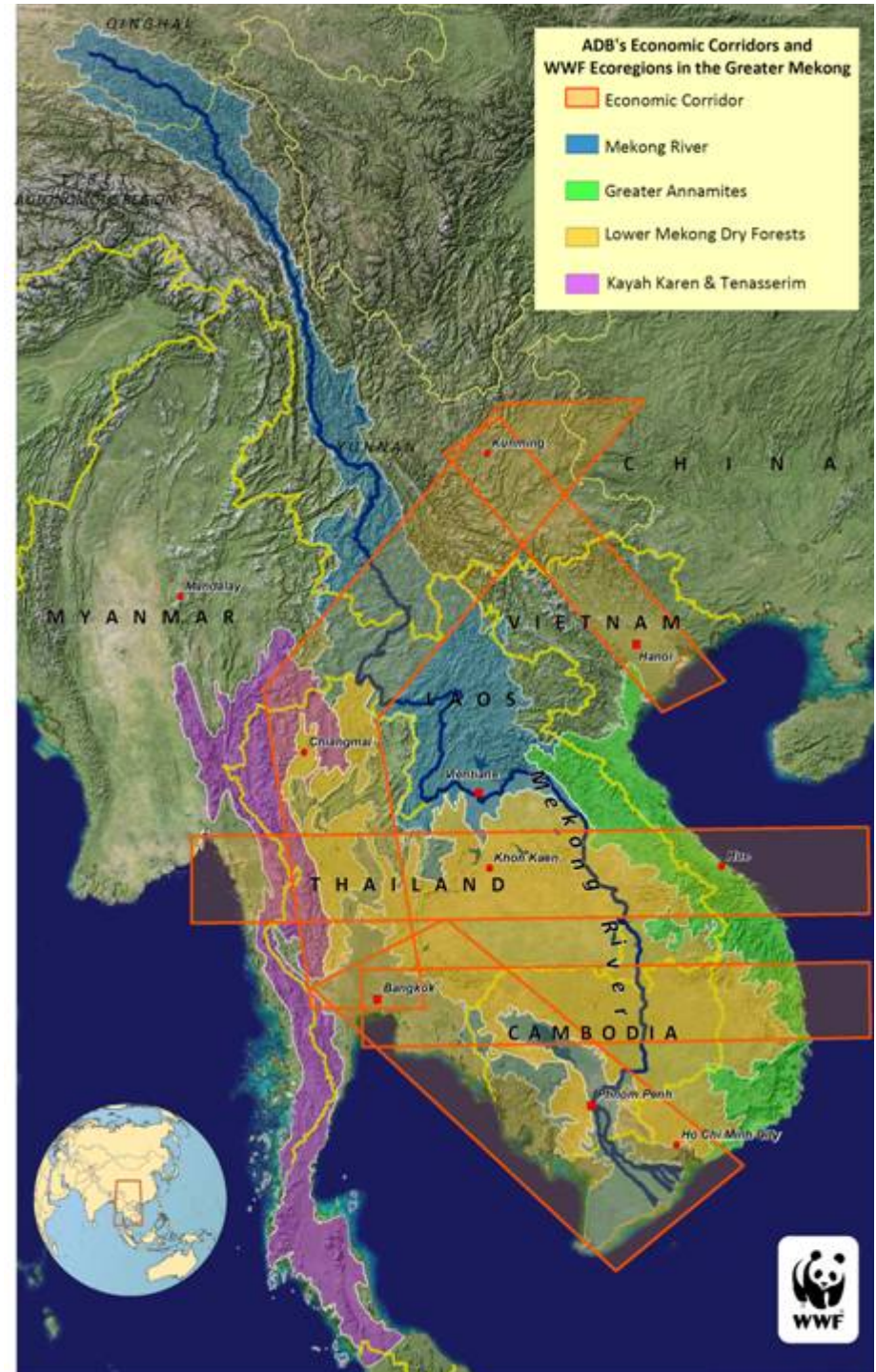


*“the ability of natural resources to continue to support poor peoples’ livelihoods in the Mekong is at a crisis point. Forests and rivers are in a state of rapid ecological decline caused by human over-exploitation”. Oxfam report, 2007*

**Ho Chi Minh Highway**

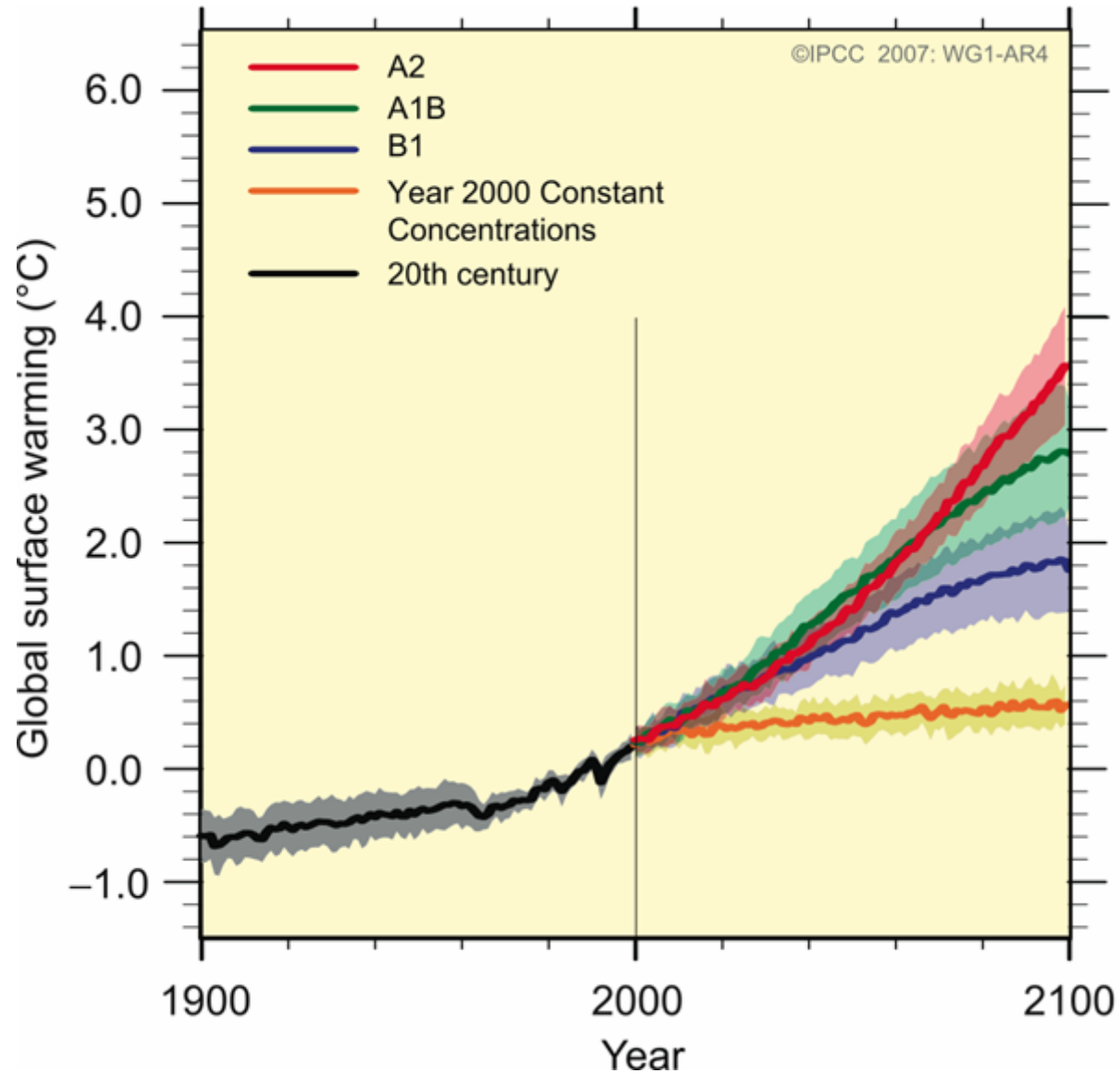


# Rapid development is transforming the Mekong region





# Amount of warming depends on future emissions, but substantial warming over next few decades is inevitable





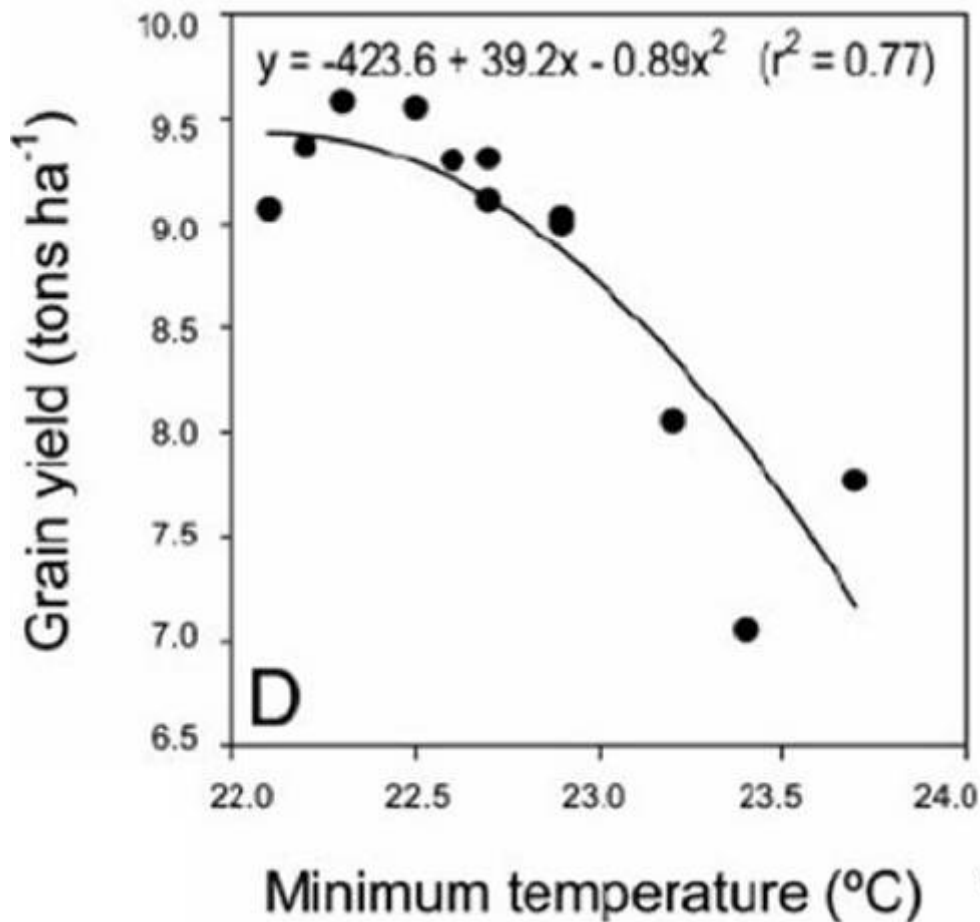
## Substantial warming is already causing major ecosystem shifts

Massive forest dieback from heat, drought, fire, pests → lost carbon sinks, mass extinctions

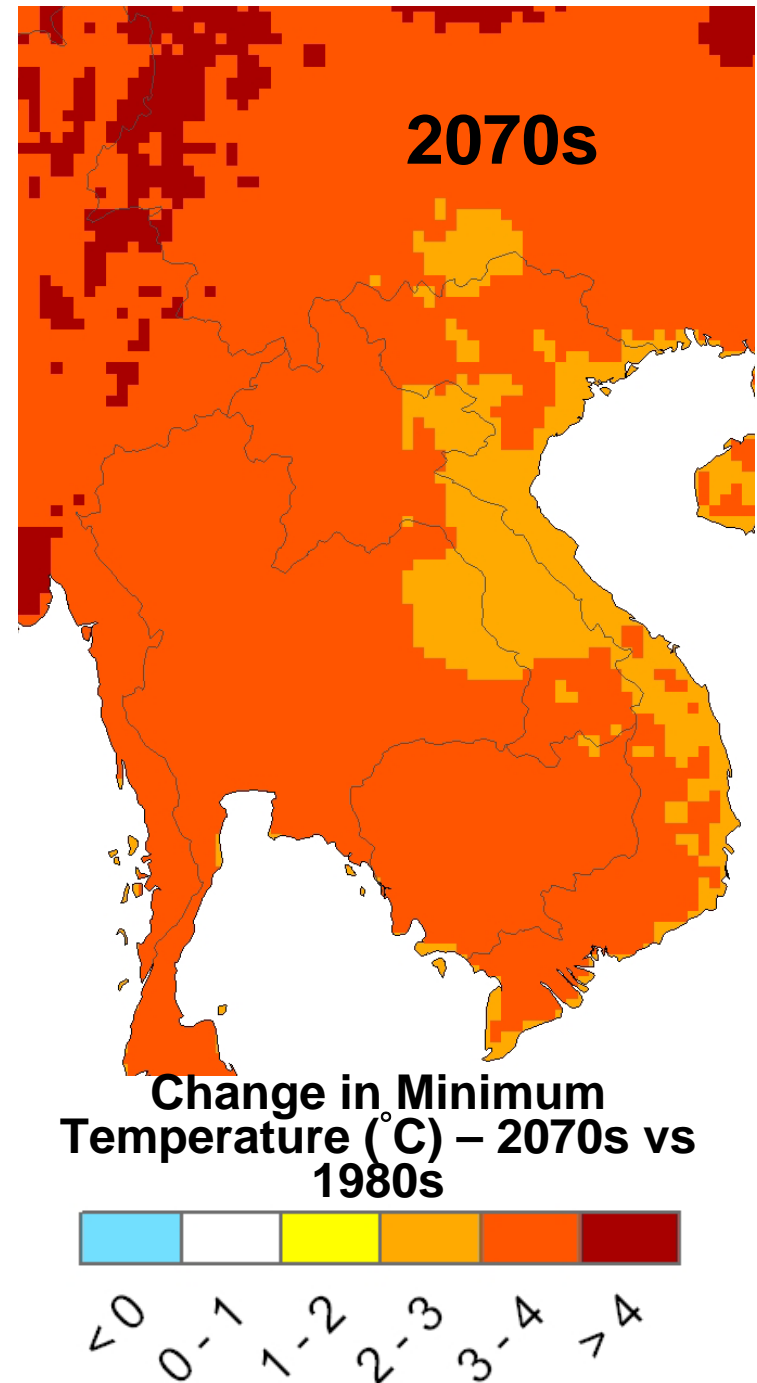


Melting and break-up of land-bound ice sheets - Greenland & Antarctica → sea level rise

# Warmer temperatures and changing precipitation patterns will likely reduce agricultural productivity



Source: Peng et al. 2004





# Anticipated Climate Change Impacts in the Mekong region

- Warmer temperatures will:
  - Shift location of species' ranges
  - Impact on fisheries & agricultural productivity
  - Impact on infrastructure viability
  - Add additional pressures on already vulnerable ecosystems
  - Increase the severity and frequency extreme climatic events

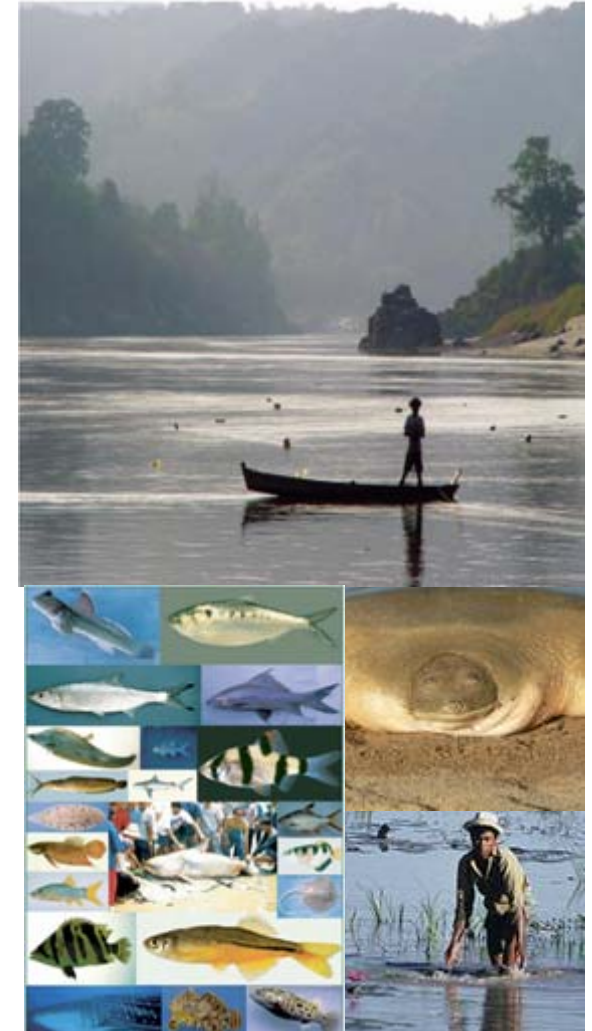




Figure 1. Relative vulnerability of coastal delta populations as indicated by population potentially displaced by current sea-level trends to 2050, including local effects. Extreme > 1 million people, high = around 500,000 people, and medium is > 50,000 people potentially displaced (Source: IPCC 2007a, based on Ericson et al., 2005).

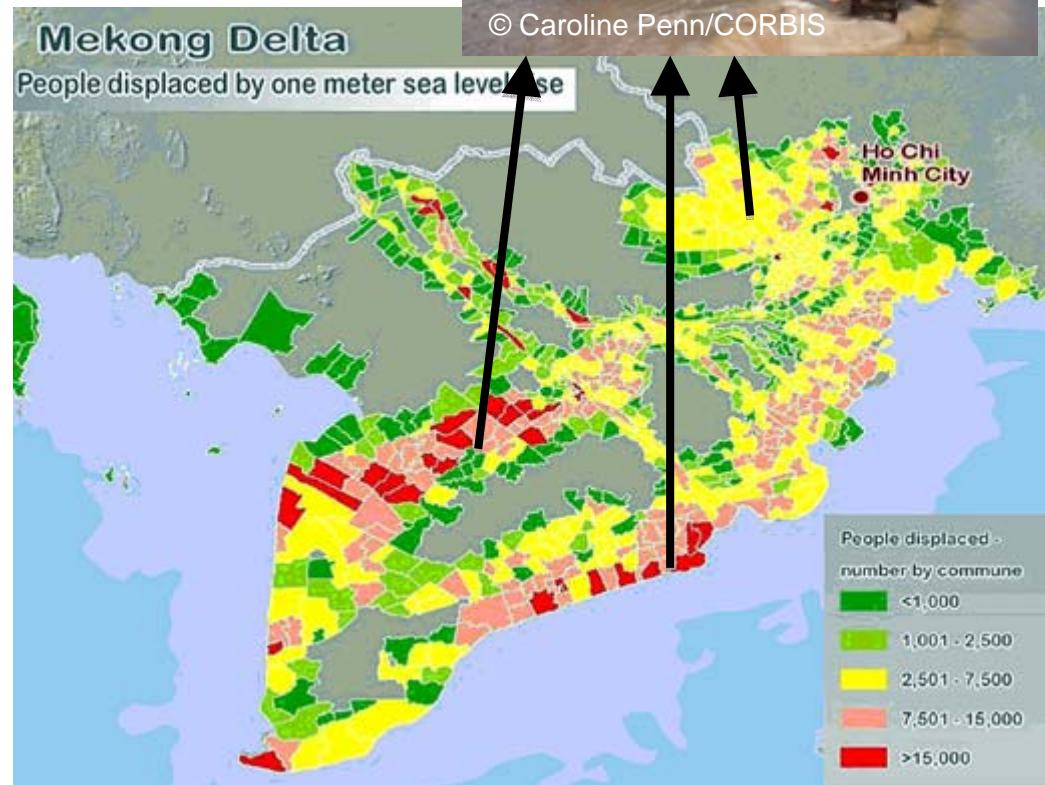




# Rising Seas, Extreme Climate Events, Altered Hydrology & Sediment Inputs Make the Delta One of World's Most Vulnerable

A 1 m increase in relative sea level will likely

- Displace ~8.5 million residents
- Threaten region's food security

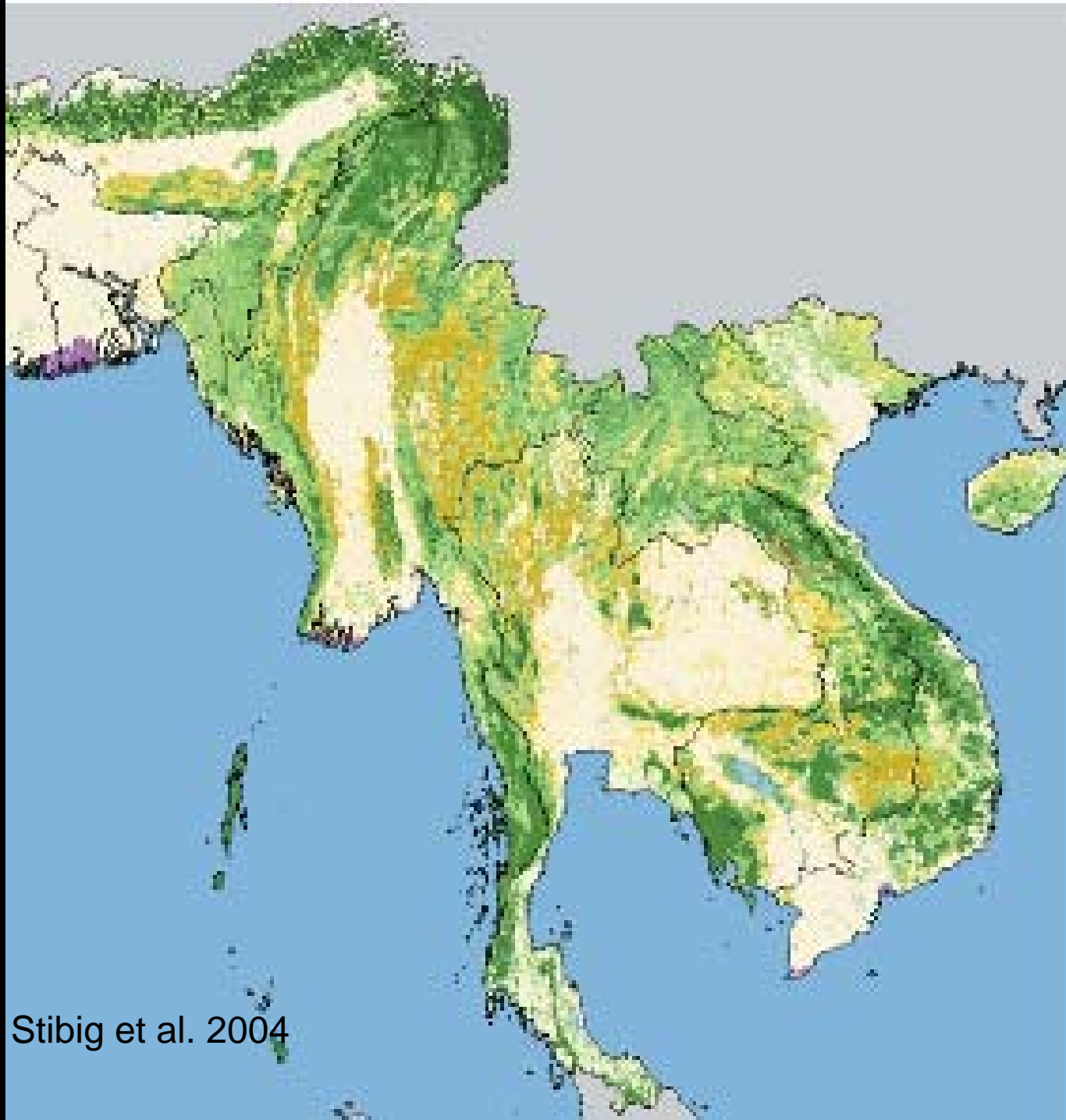




# Ecosystem services

- Carbon sequestration
- Sediment retention
- Water supply and quality
- Pollination
- Food and Fuel
- Timber
- Flood control
- Hydropower
- Genetic diversity
- Recreation and tourism
- Cultural and aesthetic values





Stibig et al. 2004

# Countdown to Copenhagen and a New Climate Regime

“The financial crisis is the result of our living beyond our financial means. The climate crisis is the result of our living beyond our planet’s means”

Yve de Boer, UNCC

MISSION POSSIBLE!  
SAVE THE CLIMATE!





## **Regional Climate Change Adaptation Agreement**

An Agreement amongst the GMS countries to create a legal framework & mechanism for coordinated regional responses to :

- disaster preparedness
- land use planning
- climate proof infrastructure developments
- ensure the maintenance of ecosystem services and resilience of transboundary conservation areas