

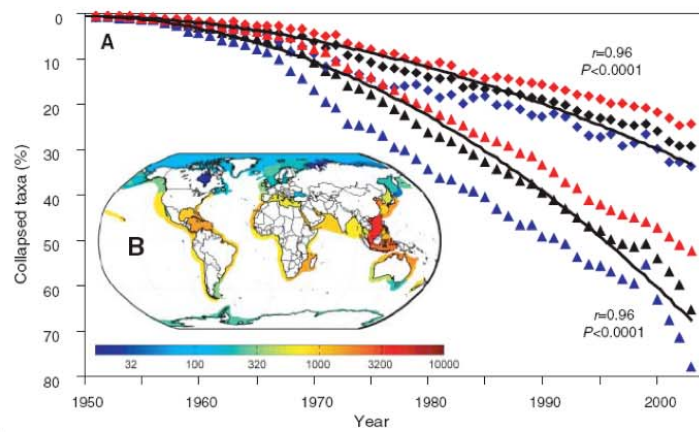


# The Oceans and Environmental Security

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Jackson School of International Studies and  
School of Marine Affairs  
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# Worrisome global-level change for ocean: The sky IS falling!



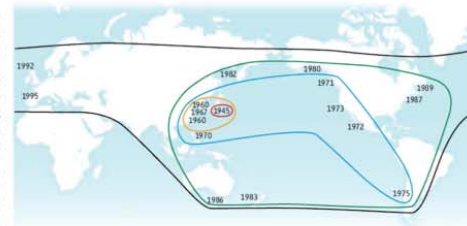
## ECOLOGY

### Globalization, Roving Bandits, and Marine Resources

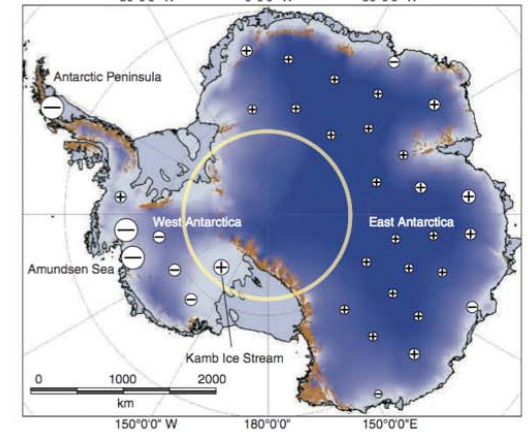
F. Berkes,<sup>1</sup> T. P. Hughes,<sup>2</sup> R. S. Steneck,<sup>3</sup> J. A. Wilson,<sup>4</sup> D. R. Bellwood,<sup>5</sup> B. Crona,<sup>1,6</sup> C. Folke,<sup>1,6</sup> L. H. Gunderson,<sup>7</sup> H. M. Leslie,<sup>8</sup> J. Norberg,<sup>9</sup> M. Nyström,<sup>1,6</sup> P. Olsson,<sup>1,6</sup> H. Österblom,<sup>9</sup> M. Scheffer,<sup>1</sup> B. Worm<sup>10</sup>

Overfishing is increasingly threatening the world's marine ecosystems (1, 2). The search for the social causes of this crisis has often focused on inappropriate approaches to governance and lack of incentives for conservation (3, 4). Little attention, however, has been paid to the critical impact of sequential exploitation: the spatially expanding depletion of harvested species (5). The economist Mancur Olson (6) argued that local governance creates a vested interest in the maintenance of local resources, whereas the ability of mobile agents—roving bandits in Olson's terminology—to move on to other, unprotected resources severs local feedback and the incentive to build

Marine resource exploitation can deplete stocks faster than regulatory agencies can respond. Institutions with broad authority and a global perspective are needed to create a system with incentives for conservation.

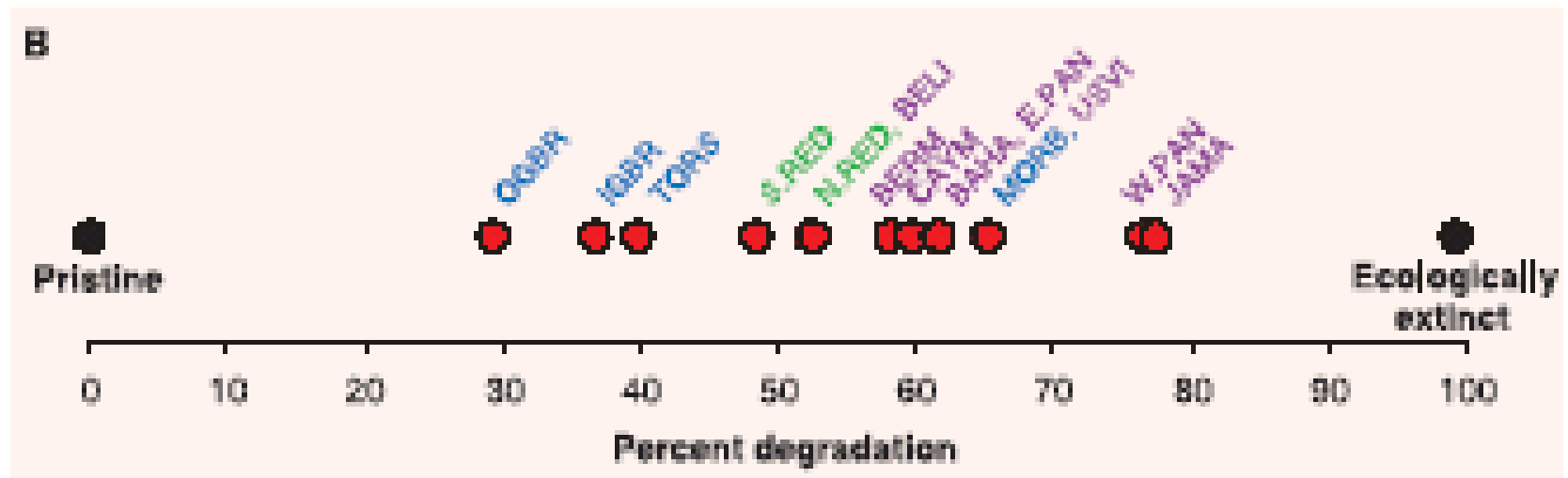


Sequential exploitation of a marine resource. Initiation year by location of major commercial fishery for sea urchins.



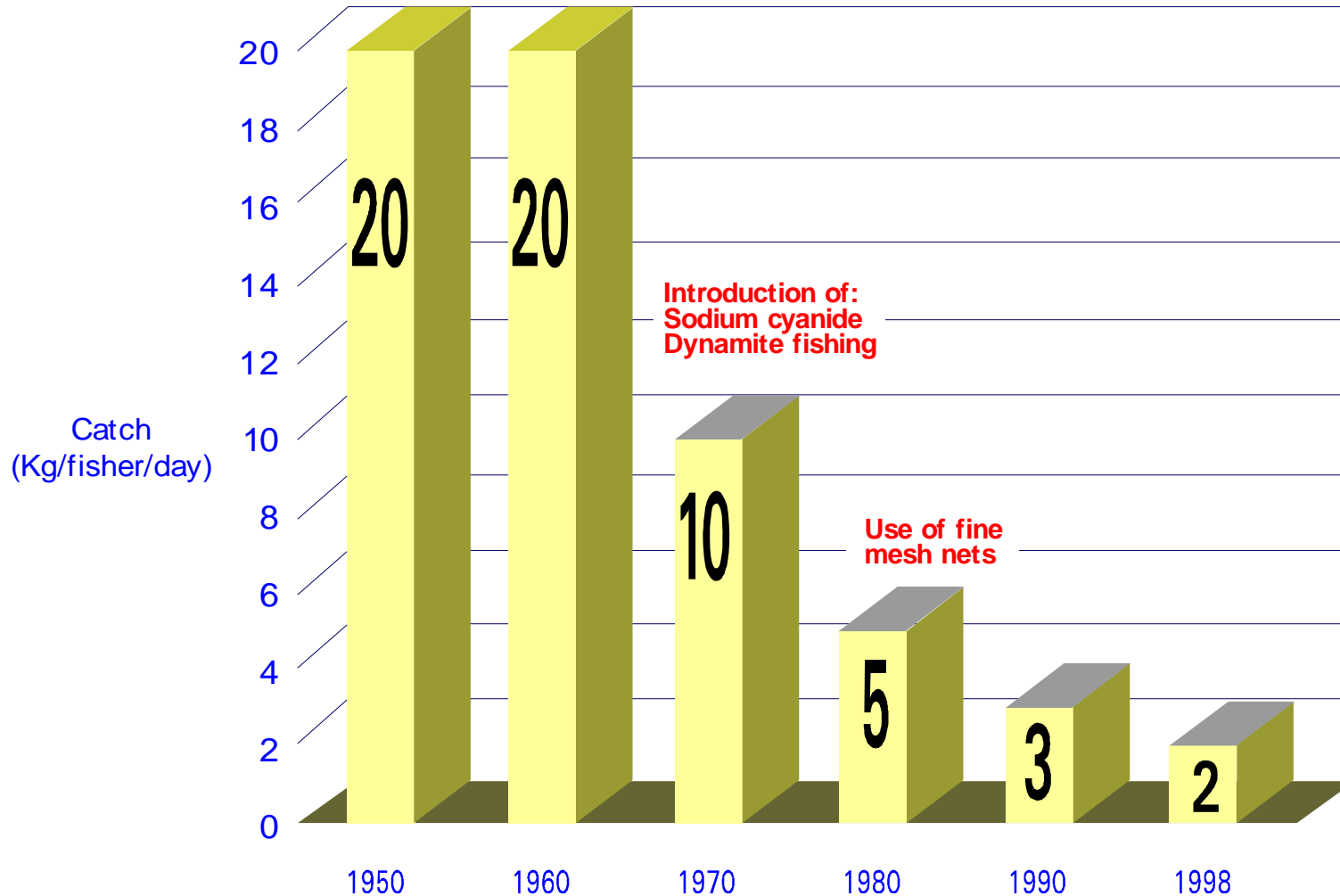


# Are coral reefs on their way to ecological extinction?



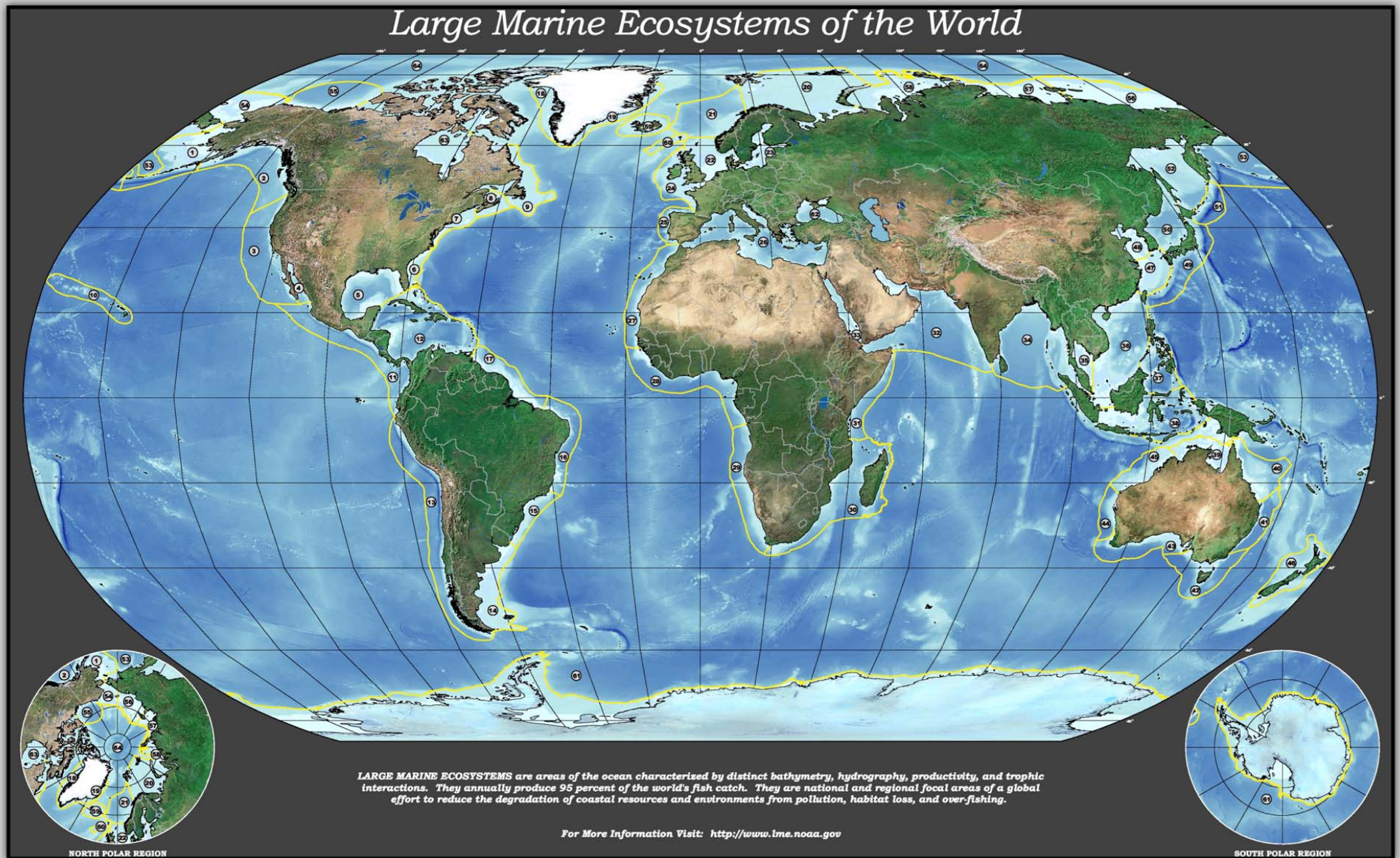
Pandolfi et al. 2003, *Science*

# Trend in estimated daily fish catch per municipal fisher for Olango Island



**Food security:** Approximately 50% of animal protein derived from marine fisheries and aquaculture Filipino coastal communities

# Policy response to global problems





WPC RECOMMENDATION 5.22  
APPROVED

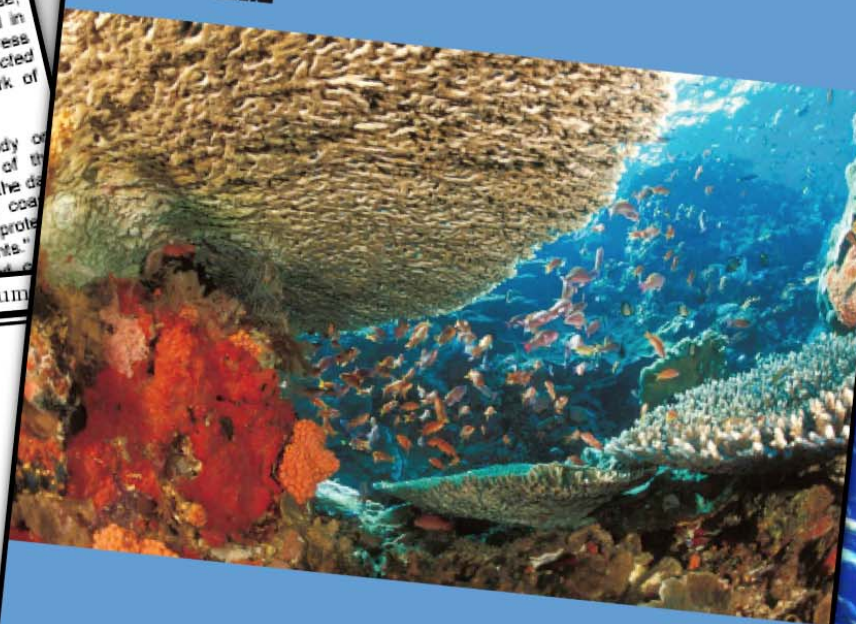
And, more recently, the 8<sup>th</sup> meeting of the Subsidiary Body of Scientific, Technical and Technological Advice (SBSTTA) of the Convention on Biological Diversity noted in March 2003 that "...the data on biological diversity noted in March 2003 that ... the data on marine biodiversity are severely deficient, and probably prote-

.../Wednesday, May 31, 2000/Presidential Document

Executive Order 13158 of May 26, 2000

By the authority vested in me as President by the laws of the United States of America and in furtherance of the National Marine Sanctuaries Act (16 U.S.C. 1601 *et seq.*), the National Wildlife Refuge System Administration Act of 1966 (16 U.S.C. 1531 *et seq.*), the National Park Service Organic Act (16 U.S.C. 1 *et seq.*), the National Wilderness Preservation Act (16 U.S.C. 470 *et seq.*), the Wild and Scenic Rivers Act (16 U.S.C. 1271 *et seq.*), the Magnuson-Stevens Fishery Conservation and Management Act (16 U.S.C. 1801 *et seq.*), the Coastal Zone Management Act (16 U.S.C. 1601 *et seq.*), the Endangered Species Act of 1973 (16 U.S.C. 1531 *et seq.*), the Mammal Protection Act (16 U.S.C. 1362 *et seq.*), the National Environmental Education Act (16 U.S.C. 1331 *et seq.*), the National Environmental Policy Act (42 U.S.C. 4321 *et seq.*), the Outer Continental Shelf Lands Act (43 U.S.C. 1331 *et seq.*), and other pertinent statutes, it is ordered that the following Executive Order will be:

**Section 1. Purpose.** This Executive Order will



## Marine Initiative

Although once considered a limitless and inexhaustible resource, the oceans of the world are increasingly in jeopardy. The cycle of influence between land and sea is delicate, and human activities are taking a heavy toll on the health of all ocean systems, from marshes and mangroves to reefs and the deepest reaches.

In response, The Nature Conservancy has launched the Marine Initiative to link land and sea conservation in an effort to protect the rich array of plant and animal life and safeguard the tremendous benefits the oceans provide.

**PROTECTED AREA STRATEGY:**  
A ten-year strategy to promote  
representative system of  
protected area networks

**Summary Version**  
Theme Participants at the  
World Parks Congress,  
(8-17 September 2003)





# Tropics: a place of social complexity, instability, and moving toward global integration



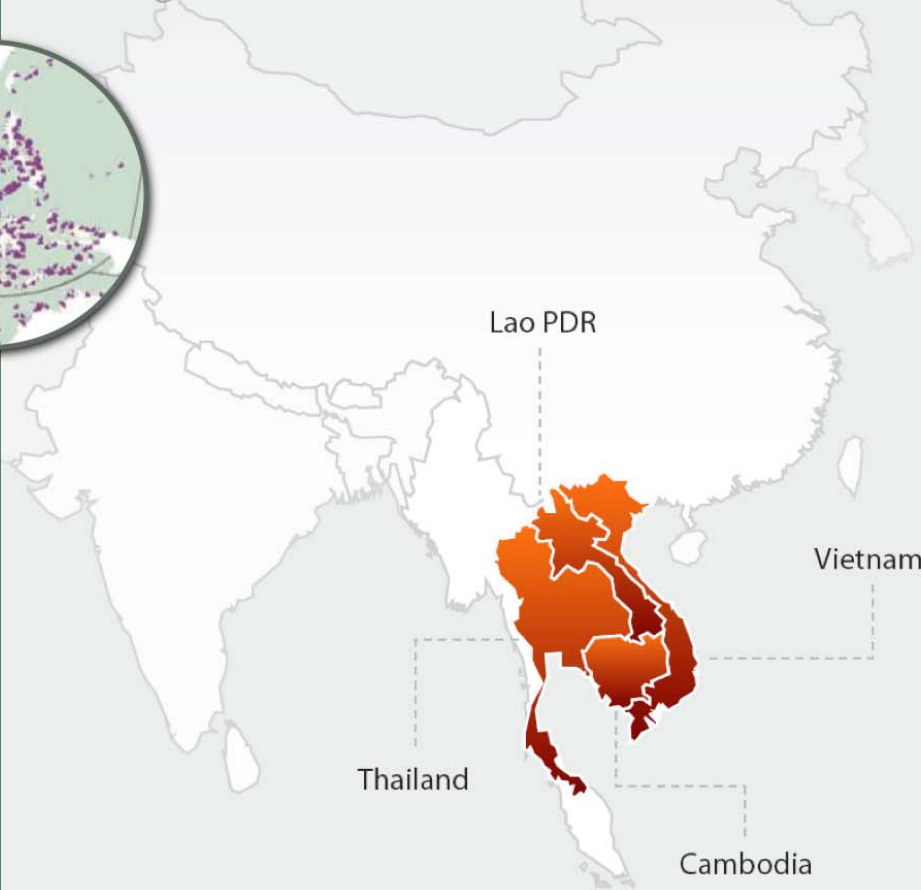
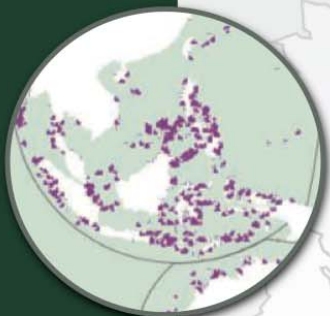








Pro-Poor Livestock Policy Initiative (PPLPI)  
Population and Poverty  
PPLPI Southeast Asia Regional Hub  
Mekong River Commission (MRC)

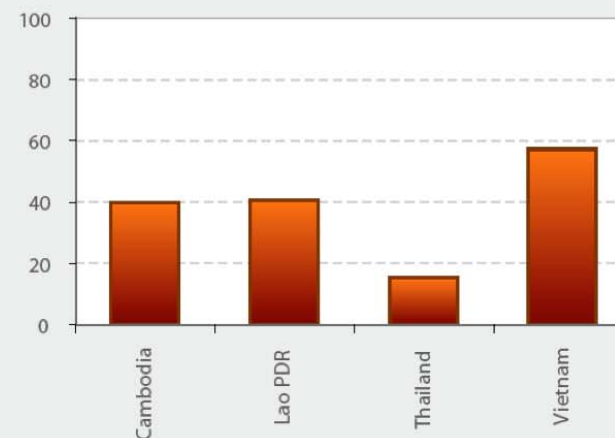


### Population figures (millions)

Country	Total population	Rural population	Rural poor
Cambodia	13.1	10.9	4.4
Lao PDR	5.3	4.3	1.7
Thailand	62.8	50.4	7.8
Vietnam	78.1	59.3	33.9

Source: The Center for International Earth Science Information Network (CIESIN) - Gridded Population of the World Version 3 (GPW-3)

### Rural poverty rates (percent)



Source: World Bank's Global Poverty and Inequality Database (GPID)  
NB: These figures are based on national poverty lines and are therefore not strictly comparable between countries.

<http://www.fao.org/ag/pplpi.html>

The designations employed and the presentation of material in this information product do not imply the expression of any opinion whatsoever on the part of the Food and Agriculture Organization of the United Nations concerning the legal or development status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries.



A Living from  
Livestock



Pro-Poor Livestock Policy Initiative (PPLPI)  
Population and Poverty  
PPLPI Southeast Asia Regional Hub  
Mekong River Commission (MRC)



# Tropics a place of growing poverty

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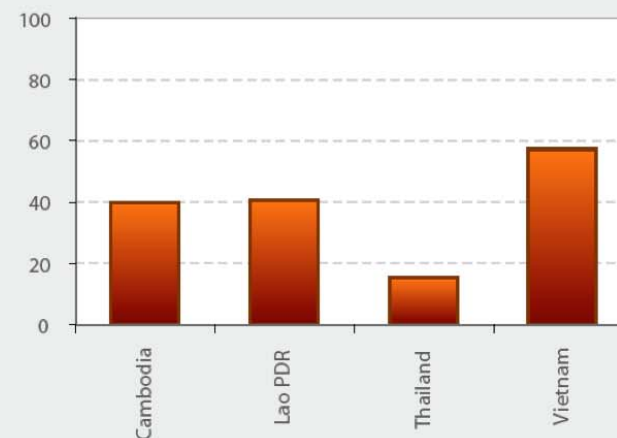
Lao PDR

Vietnam

Thailand

Cambodia

Rural poverty rates (percent)



A Living from  
Livestock

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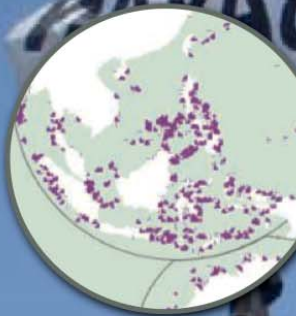
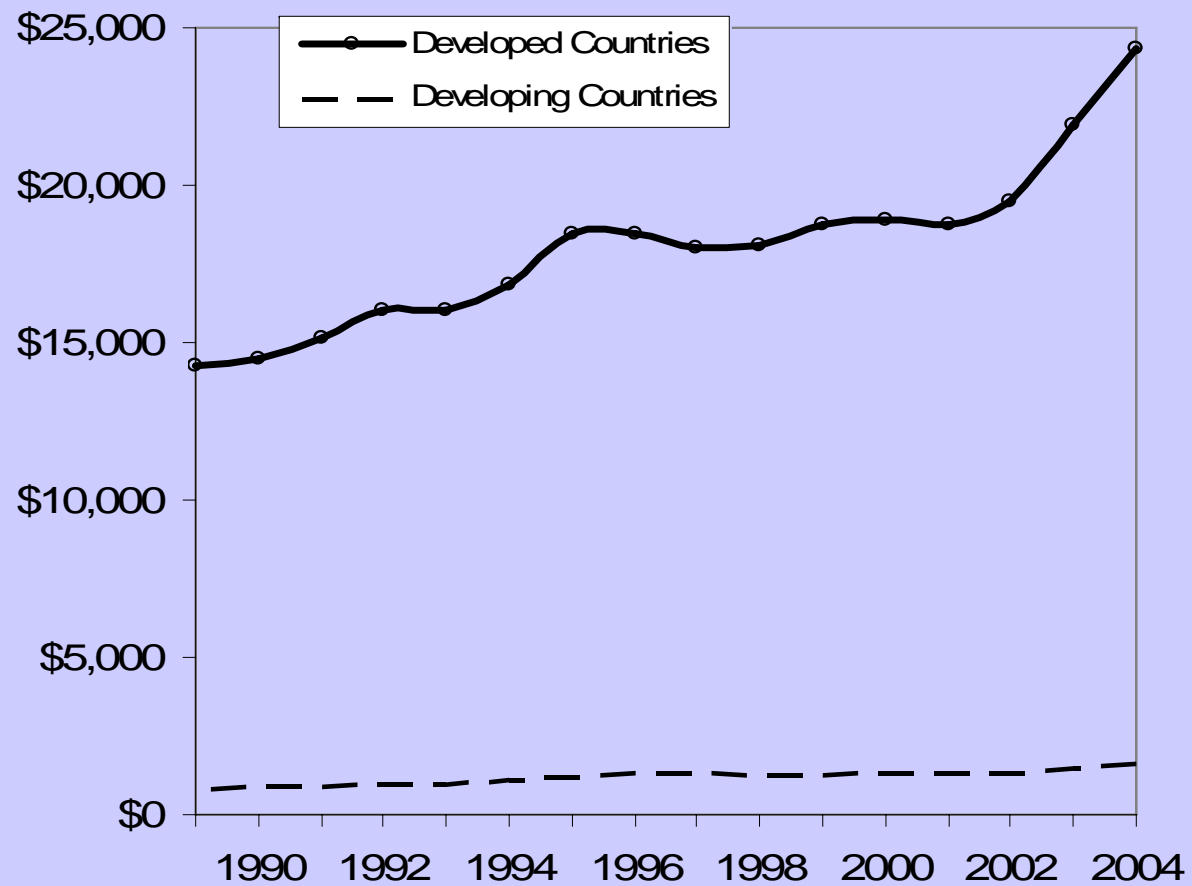
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Annual GDP per capita, current US \$









The South subsidizes the North...









The background of the slide features a dark, atmospheric image of a tropical coastline at dusk or dawn. A semi-transparent world map is overlaid on the upper portion, highlighting the tropical regions. In the lower foreground, the silhouettes of two people are visible: one person on the left is bent over, possibly fishing or gathering, while another person on the right stands with their back to the camera, pointing their right arm towards the horizon over the water.

# Title 6-supported classes: Society and Oceans and Environmental Degradation in the Tropics

- What are the historic and ethical underpinnings of how we frame environmental issues and policies?
- What are the societal responses and social processes that influence policy?
- How to integrate social and natural science information?
- Term paper: Socio-ecological impact of tropical commodity