Climate Insecurities, Human Security and Social Resilience Conference

S. RAJARATNAM SCHOOL OF INTERNATIONAL STUDIES

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New Challenges and Regime Resilience: Climate Change and Water Security for the People of the Lower Mekong Basin

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Observation

- Majority of major environmental changes felt through modifications in hydrological cycle

- Impacts particularly severe in developing countries: dependence on water-related resources and ecosystem services

- Environmental change undermines human security not in isolation from broader range of social factors: existing challenges magnified

Human Security

Underpinning elements: individual human lives, role of society & social arrangements

- reasoned concentration on the downside risks of human lives
- a chosen focus on the downside in emphasizing the more elementary human rights

Prof. Amartya Sen

The Lower Mekong Basin

- Mekong River: 10th largest – total length 4,909 km, mean annual flow 475 km^3
- 6 riparian states: 4 in LMB – Laos, Thailand, Cambodia, Vietnam
- Population: 65.7 million of which 85% rely on subsistence agriculture based on rice & fish
- Climate change scenario: slightly warmer but duration of warm periods extend much longer & cover much wider areas, increased rainfall intensity
- Hydrological impacts: flood pulse system – higher water levels & more extensive flooded area, longer flood duration

Basin Development Plan & Its Cross-cutting Issues

SECTOR	ISSUE
Integrated Agriculture	Degradation of Terrestrial & Aquatic Habitats
Watershed Management & Forestry	Ecosystem Degradation
Fisheries	Habitat Degradation
Hydropower	Habitat Degradation
Navigation & Transportation	Degradation of Terrestrial & Aquatic Habitats
Tourism & Recreation	Ecosystem Degradation
Water Supply	Water Quality
Flood Management	Ecosystem/Habitat Degradation

THEME	Public Participation	Human Resource	Development	Socio-Economic	Environment

Changes Affecting Water Resources

Demands

'consumptive uses'

Agriculture
Culture fisheriesWater supply Environmental

'instream uses'

Fish
Salinity control Energy
Navigation

Climate

Sea level rise

Increased dry season demand

Higher drought risk

Increased flood flows & frequencies

Infrastructure

Dams

Irrigation & Drainage

Flood mitigation

Salinity Control

Dredging & River works

Water supply & Sanitation

Management Practices

Catchment management

Energy production

Irrigation & Animal husbandry

Fishery Management

Pollution control

What are the impacts from these changes?

Inter-basin Flow Management (IBFM): Main Issues

•Bed level changes Increased bank erosion
•Loss of secondary channels

Channel

•Increased dry-season water levels
•Decreased flood peaks
•Delayed inundation of flood plains

Movement of water

•Wetland
•Fisheries

Biological / Agricultural productivity

Framework for Cooperation

- Mekong Commission (MC) 1957
- Interim Mekong Commission (IMC) late 1970s
- Mekong River Commission (MRC): *1995 Agreement on the Cooperation for the Sustainable Development of the Mekong River Basin*

- Climate related activities since inception: basin-wide hydro-climatic data collection and dissemination hydrographic survey, sponsorship of tributary dams and reservoirs, flood forecasting and warning systems

MRC as Water Regime

- "sets of implicit or explicit principles, norms, rules, and decision-making procedures around which actors' expectations converge in a given area of international relations" (Krasener, 1986)

- present LMB cooperation based on the 1995 Agreement on the Cooperation for the Sustainable Development of the Mekong River Basin spells out areas of cooperation, institutional framework and general proceedings validates labeling the MRC as a regime

- 2000: process to re-focus on mandate, based on 2 pillars for change:
  1) new structure at MRC Secretariat
  2) introduction of program approach with 3 core programs:
  - Basin Development Plan (BDP)
  - Water Utilization Program (WUP)
  - Environment Program (EP)

Different Needs, Aspirations & Development Opportunities among Riparian Countries

Upper Basin: Located mostly in China
Significant hydro-power potential: downstream magnitude & timing of river flows, sediment supply

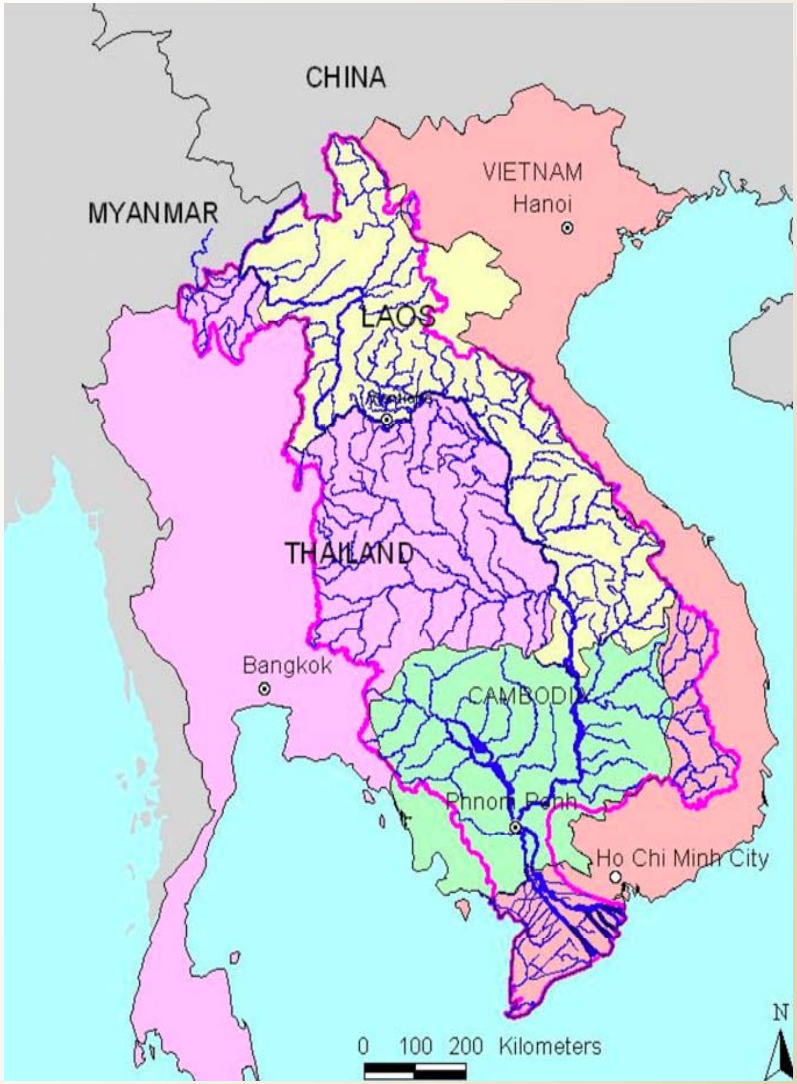
Middle Basin, Thailand:
•hydropower & reservoirs: impact on water availability, quality & sediment
•significant irrigation development
• landuse changes/ forestry
•impacts on hydrological response

Middle Basin, Laos:
•hydropower potential: impact on downstream flows & sediment supply
•limited irrigation potential
•landuse changes/ forestry: impacts on hydrological response, water quality & sediment

Lower Basin, Cambodia:
•possible hydro-power development:
• impact on fish migration
• potential for increased irrigation:
•constrained by water availability
•potential impact of agro-chemical use
•impact of upstream development on hydro-ecology of Tonle Sap (water quality & quantity)possible impact of downstream development on backwater levels & operation of Tonle Sap
• impact on sediment supply etc.

Delta, Vietnam:
Impact of upstream development:
•dry-season irrigation (water availability)
•saline intrusion
•acidification
• wet season floodplain inundation
• possible impact of flood mitigation upstream
•hydropower potential on Se San River
• impact on hydro-ecology of floodplains & Tonle Sap
•impact on sediment supply etc.

Concerns of Riparian States



Laos:
97%
(41%)

Development in tributaries to own preference

Thailand:
36%
(15%)

Water Diversion

Cambodia:
86%
(19%)

Fisheries & natural reversal of Tonle Sap during wet season

Vietnam:
20%
(8%)

Delta; salt water intrusion during dry season

Critical Hydropolitics

- MRC: institutional arrangements oversimplifies MB's spatial & temporal dynamics: concern mainly with watercourses & river channels, MR's existence as multi-dimensional river basin ignored

  - under mainstream water resource paradigm: confined by dominance of law, engineering, and economics

  - focus on capacity of states to achieve cooperation over shared river resources & on ways such cooperation among states can be negotiated and implemented: state-centered approach

- Alternative approach: identify nodes of water conflict & multiple networks – more relevant to issues of human security – people-centered approach

Regime Effectiveness

- Character of the problem

  - knowledge deficit about the problem makes it harder to achieve effective governance

- Problem-solving capacity of institutional tools applied & actors that approach the problem

  - institutional setting of the regime

  - distribution of power among actors involved

  - skill & energy put into the efforts to address problem

  Underdal (2002)

Issues currently addressed by MRC

- Flow regime changes from development or climate change?
- Downstream impacts from Upper Mekong development: increased dry season flow, decreased flood peaks, delayed inundation of floodplains, bed level changes/increased bank erosion, loss of secondary channels, reduced floodplain/delta areas (particularly in Cambodia & Vietnam)

What does this mean:
for wetland/fisheries/biodiversity/agricultural production?



Critical Issues in the LMB

- Complexity of actors & actions: stronger private economic actors & market forces, weaker social actors
- Regionalization of development: 'national interest' vs. 'transboundary interests' – perception of gaps & unfavorable climate of opinions
- MRC for sustainability (awareness, willingness & capability/capacity)
- MRC for whom: legitimacy crisis
- Necessity to have an atmosphere of partnership – no actors can do it alone: new need for multilevel & multilayered governance for real-world problems of development under framework of adaptation to climate change

Source:adjusted from Wun 'Gaeo, "Challenges and Opportunities for the MRC and Civil Society Partnership", MRC Regional Consultation on BDP, 2008.