Holistic approach in mainstreaming climate change adaptation into policy planning - A perspective from Thailand

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Holistic approach in mainstreaming climate change adaptation into policy planning - A perspective from Thailand

- Climate change adaptation: Fundamental concerns
- Mainstreaming climate change into policy & strategic planning
- Holistic approach in climate change planning
- Conclusion - Food for thought about climate change adaptation planning
Climate change adaptation: Fundamental concerns

- Putting climate change adaptation into proper context
- Various aspects of climate change adaptation
- Matter about scale
Putting climate change adaptation into proper context
Adaptation to changed climate vs adaptation to climate change

Climate change adaptation:
Fundamental concerns

Climate impact Socio-economic pressure
Exposure Sensitivity Risk
Adapt to risk

Climate change Socio-economic pressure
Exposure Sensitivity Sensitivity
Coping actions

Past Present Future

Strategy / actions
Alternate development / livelihood

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Various aspects of climate change adaptation

**Multiple levels of adaptation:**
Household / Community / Provincial / National / Regional

**Multiple approaches of adaptation:**
Individual / Collective

**Multiple methods of adaptation:**
Climatic concerns

Climate Change

Impact, risk and vulnerability

Climate variability

Community / household

Local gov. / watershed committee

National gov. / Regional gov.

Action plan: household, community and national level

Policy frame: area-based / multi-sectoral

Strategic direction: System-based strategy

Uncertainty

Change in climate pattern

Change in frequency and magnitude of extreme events

Timescale

Decade or much longer

Short-term response

Medium-term adaptation

Long-term adaptation

Matter about scale – different levels of adaptation

Increase flexibility to better manage future risk

Climate risk management
Mainstreaming climate change into policy planning

- Uncertainty about future
- Paradigm shift in climate change adaptation planning process
- The story of Lao-oi district, Kalasin Province, Thailand
Mainstreaming climate change into policy planning

Can we really tell the future?

Dealing with uncertainty is not about trying to make certainty out of uncertainty, but to be prepared for various circumstances, even unlikely situations.
The way forward:

Paradigm shift in climate change adaptation planning ....

Future climate projection
Future climate change impact analysis - sector
Vulnerability analysis
Adaptation options aim at solving future problem – maintain status quo
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Alternative approach: from impact-based to risk-based assessment

- Development strategy (now – future)
- Socio-economic change
- Risk of sector / area (now – future)
- Climate change
- Vulnerability of sector / area (now – future)
- Adaptation
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Alternative approach: Area-based / Community-based approach

- **Socio-economic condition** (past – present)
- **Risk – resilience of society** (now)
- **Climate** (Past – present)
- **Vulnerability** (now)
- **Risk and risk management strategy** (now)
- **Future climate**
- **Vulnerability** (future)
- **Sustainable / flexible / more options**
- **Adaptation**
Mainstreaming climate change into policy planning

Story of Lao-oi district, Thailand – Mainstreaming climate change into climate risk management strategy

Climate risk management strategy will put community into different context – different risk profile
Current context: wet-season rice / community is located along river
Climate risk – farmer vulnerability

- **Exposure:** Flood before harvest / 7-8 times in a decade
- **Sensitivity:** Rice has low tolerance to flood
- **Coping capacity:** Dry season rice – partially / government compensation / seasonal migration

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Mainstreaming climate change into policy planning

Strategy to cope with current climate risk

New farming practice - Won’t fight with flood – change to dry season rice – use water from main river through pumping station and underground pipe system

Path leads to dead end?
Strategic move to cope with current climate risk leads to different context and different risk & vulnerability profile

**Future context:** Dry-season rice practice

- **Exposure:** Drought / heat
- **Sensitivity:** Rice has low tolerance to drought / heat
- **Coping capacity:** Limited – single source of water supply
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Will such strategy leads to new problem – wasteful investment?

Warmer and longer summertime – reduced river flow whilst crop water demand could be higher to compensate higher evapotranspiration

Increase rainfall in rainy season suggests higher flood risk
Strategy heading toward right direction

But current response to climate risk may not sustain under warmer and longer summertime in the future
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**Adaptation: alternative in strategy implementation**
Alternate source of water resource – harvest water during flood season for dry season agriculture
Conclusion:

- Adaptation in reality >> linkage between present and future / the smaller the unit of analysis – the stronger linkage with the present
Holistic approach in climate change planning

- Why holistic approach?
- Cross sectoral concerns
- The story of Krabi Province, Thailand
- Gaps in policy planning
Climate change adaptation planning under multiple threats

Issues of concern:
• Climate is one of the changes among many
• Multiple stressors
• Multiple Stakeholders
• Context change over time

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Why holistic approach?

- Society / a landscape is a complex system – consist of various sub-systems / sectors
- Different sectors have different concerns
- Different sectors response to risk / pressure differently
- Thus, response of a sector may affect the others
- Planning for climate change adaptation in the context of society / landscape would ensure harmonized climate risk management of different sectors
Climate change is not uniform across space and time - overlook multiple dimensions of climate change in various aspects:

- **Magnitude** – change in range of weather pattern
- **Frequency** – change in return cycle of extreme weather event
- **Distribution over time and space**
  - **Temporal** – e.g. length of season, onset – end of season, distribution of weather parameters over time
  - **Geographical** – e.g. area of hot area / distribution of weather parameters over geographical area

Different areas / systems / sectors have different concern on future climate change.
Holistic approach in climate change planning

Cross-sectoral concerns: Different sectors have different concern about future climate change

More severe coastal erosion

Coastal settlement

Stronger wave / sea level change

More severe coastal erosion

Stronger wind during monsoon season

Fisherman – cannot go out at sea for fishing

Change in wind speed / wind direction

Some sectors may be directly affected, but some may be affected along the chain of consequences of climate change
Cross-sectoral concerns: Different sectors have different concern about future climate change.

- Shift and change in seasonality / rainfall distribution / etc.
- Coastal erosion / water resource / ecosystem integrity / Natural hazard / etc.
- Agriculture / Fisheries / Forest ecosystem / Tourism / Urban / Etc.

Climate change

Bio-physical

- Agriculture
- Urban
- Tourism
- Fisherman

Different sectors are at risk by different climate change.
Planning adaptation strategy should base on holistic view on future change: **Cannot take climate change as isolate issue**

**Future change:**
- Natural aspects
  - Agriculture
  - Urban
  - Tourism
  - Fisherman

**Future change:**
- Social aspects
  - Institution / Governance / Development scheme

**Holistic approach in climate change planning**
Holistic approach in climate change planning

Climate change

Bio-physical

Agriculture

Urban

Tourism

Fisherman

Institution / Governance / Development scheme

Socio-economic change

Shift and change in seasonality / rainfall distribution / etc.

Coastal erosion / water resource / ecosystem integrity / Natural hazard / etc.

Agriculture / Fisheries / Forest ecosystem / Tourism / Urban / Etc.

Water allocation policy / market condition / migration / public infrastructure / etc.
Climate scenario

Climate change

- Shorter rainy season
- Longer tourism season
- Less water to support agriculture
- Stronger monsoon season
- Higher dependency on coastal ecosystem
- Sea level rise
- Aquifer contamination

Tourism

- More tourists
- Higher water demand
- More palm oil plantations
- Tourism promotion

Agriculture

- Less fresh water to maintain coastal ecosystem
- Bio-fuel promotion

Coastal community

Urban

Socioeconomic scenario

Socio-economic change

Example of case study in Krabi province Thailand

The story of Krabi Province, Thailand

Climate change

- Shorter rainy season
- Stronger monsoon season
- Sea level rise

Longer tourism season

Less water to support agriculture

Higher dependency on coastal ecosystem

Aquifer contamination

Sea level rise

Tourism

Agriculture

Coastal community

Urban

Tourism promotion

Bio-fuel promotion

More tourists

More palm oil plantations

Higher water demand

Less fresh water to maintain coastal ecosystem

Migration

Fragmented planning by mandate of each government agency – cross sectoral issue is neglected

Socio-economic change
**Conclusion:**

- Holistic approach in climate change adaptation planning may require new or enhance institutional arrangement to cover cross-sectoral issue
Conclusion - Food for thought about climate change adaptation planning
Mainstreaming climate change adaptation into development plan & holistic approach may require paradigm shift in planning process.

Mainstreaming climate change into sectoral planning is still necessary – need to address strategic direction under future circumstances.

Climate change adaptation is not about plan to fix problem in the future under today’s context.

- To ensure that strategy with long-term effect will sustained under climate change condition
- To ensure that climate risk management strategy will still be applicable option in the future

Climate change adaptation is a continuous process – NOT static planning. Need to be reviewed and revised over time.
Thank you

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