Understanding Local Adaptation to Too Much and Too Little Water in the HKH Region

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FOR MOUNTAINS AND PEOPLE

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Outline

- Background
- Experiences from HKH region
- Key issues
- Potential opportunities
- Conclusion

Background

Hindu Kush Himalayas

8 countries

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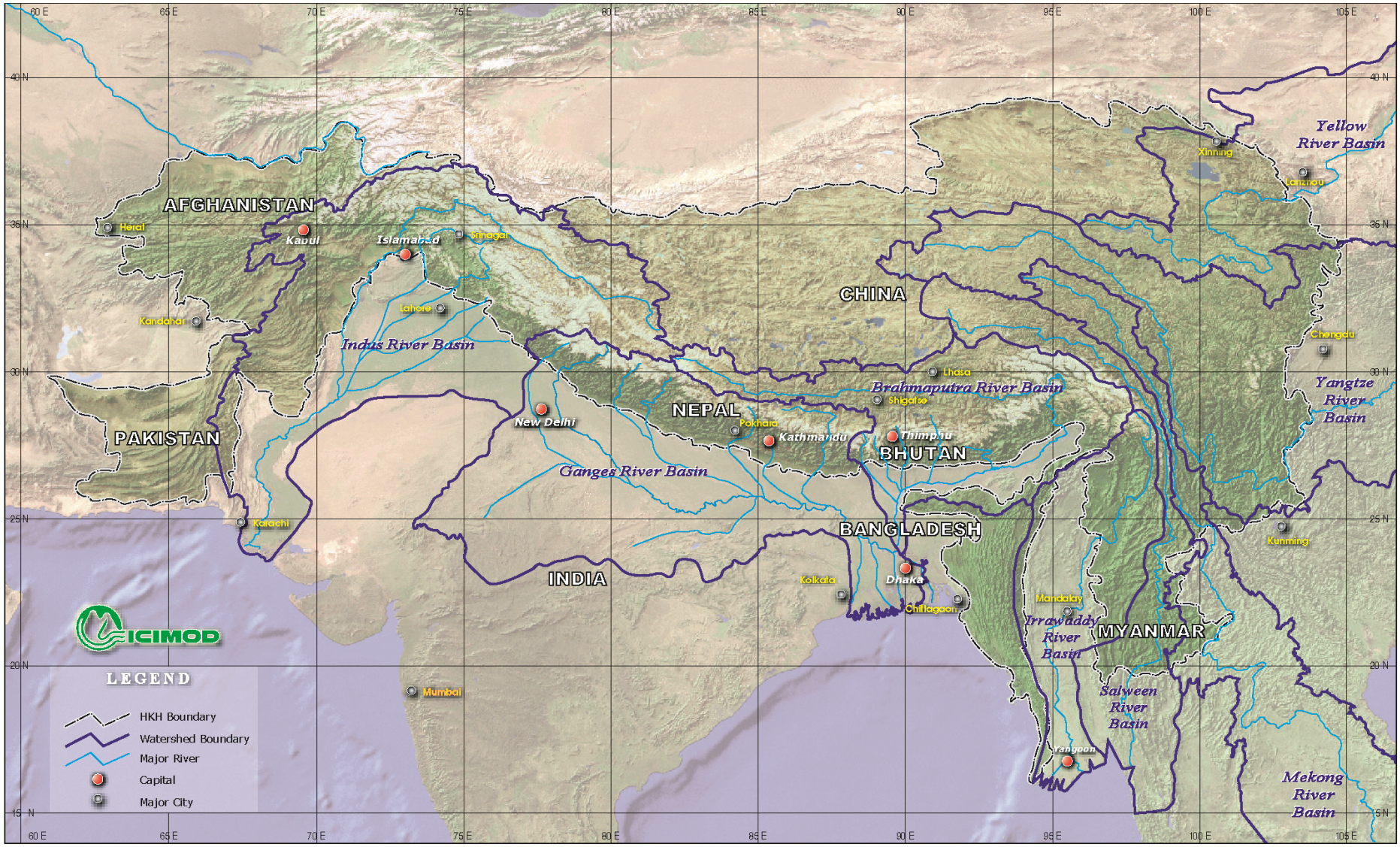

Mountains are hotspot for climate change: vital resources and growing vulnerabilities

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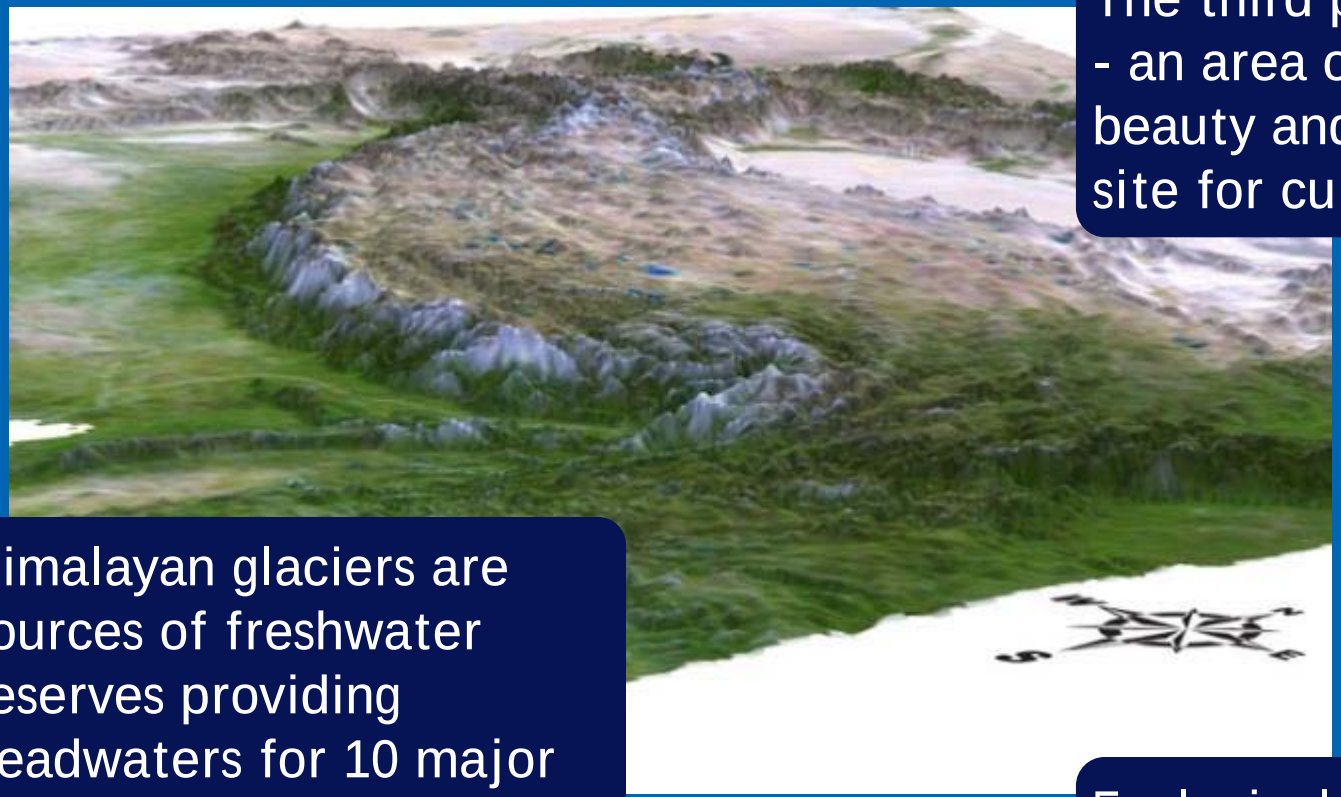

The third pole on earth - an area of extraordinary beauty and a world heritage site for culture & biodiversity

Himalayan glaciers are sources of freshwater reserves providing headwaters for 10 major river systems in Asia – a lifeline for almost one third of humanity

Ecological buffer between the Tibetan Plateau and South Asia

Mountains Matter

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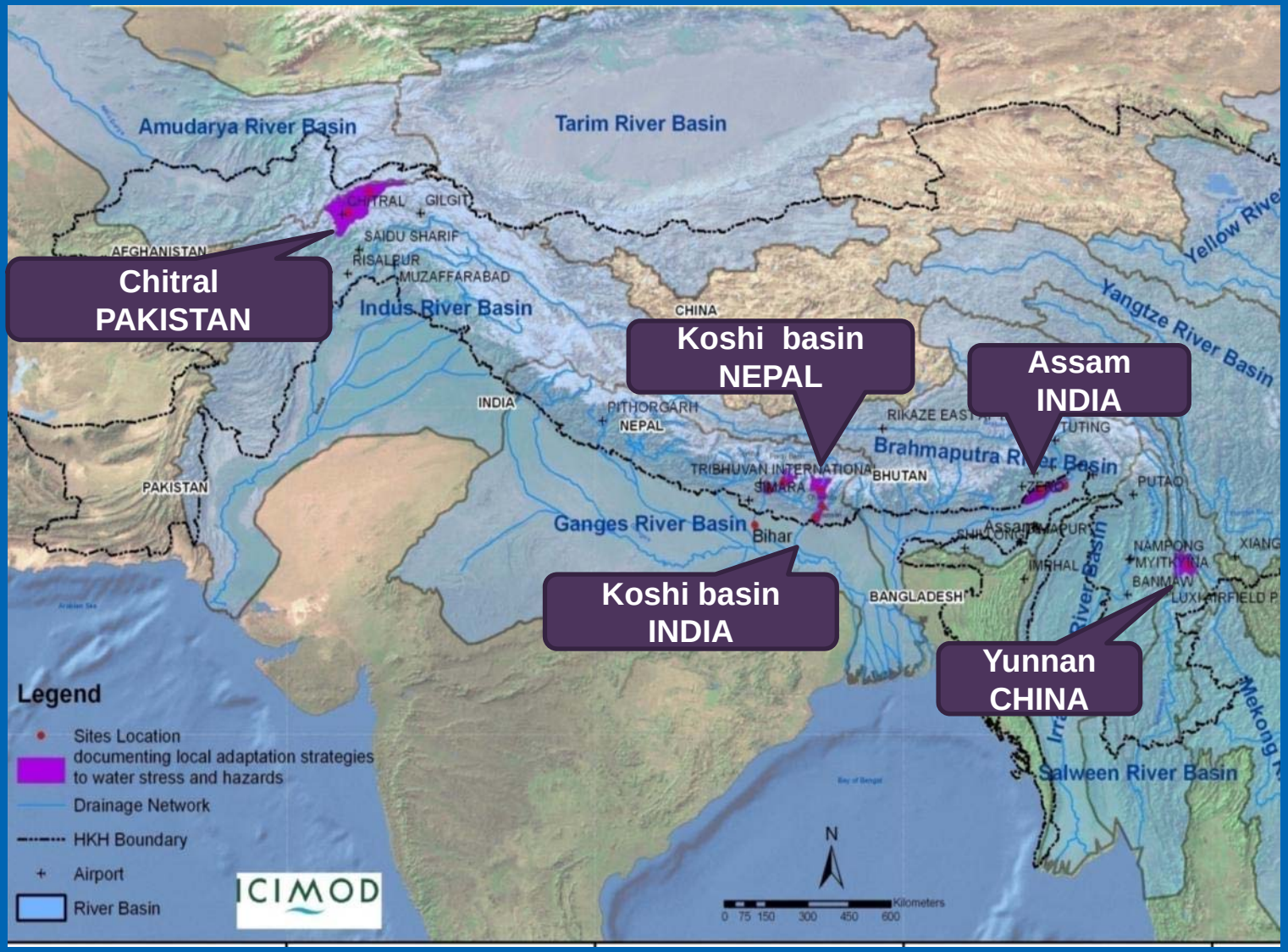
- Mountains ecosystems – a global resource
  Vital for water, food, energy, forests, biodiversity
- Mountains are under pressure
- Mountains offer solutions

TMTL Water: Research Area



Research Objectives

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Phase 1: To understand Local adaptation strategies (Country & Location based)	Phase 2: To analyze the role of policy & institutions in local adaptation (Theme based)
Major issues: -Infrastructural development -Policies and market change -Governance -Labor migration -Land use change/change of cropping patterns -Livelihood diversification -Role of social organization social capital and networks -Gender considerations	Major themes: -Local water governance -Agricultural diversification and intensification / tree crops -Governance of flood mitigation infrastructure / embankments -Livelihood diversification/ migration

Message 1: Vulnerability to climate change reduces access to systems, services and institutions that could decrease adaptive capacity, creating a potential downward spiral of increasing vulnerability.

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The risk of floods and their impact on people's income and livelihood options have made public and private agencies cautious of bringing services. (Assam, India)

Message 2: Remittances from labour migration have a significant impact on the quality of life of recipient households and on their ability to respond.

Remittances are known to be a relatively stable source of household income during natural disasters, financial crises, and armed conflicts. In this way, labour migration and remittances 'moderate the harm' caused by water hazards in HKH region.

Message 3: As climatic conditions change, people are testing new approaches, some contribute to increased adaptive capacity, which are not sufficiently captured to be communicated to other beneficiaries.

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The role of trees on farms in reducing vulnerability is determined less by the quantity of trees or total tree cover, and more by their role in diversification in livelihood portfolios. (Yunnan, China)

Message 4: Cultural norms affect people's adaptive behaviour; despite being deeply rooted, they can shift over time in response to the needs.

Two types of chang-ghar (house on stilts of the Mishing community): left, the original design of bamboo and wood; right, wealthier households invest in concrete to make higher stilts (Assam, India)

Message 5: NGOs and CBOs are playing important roles in the development of institutions supporting adaptive capacity, but their efforts are not recognized by state/national institutions.

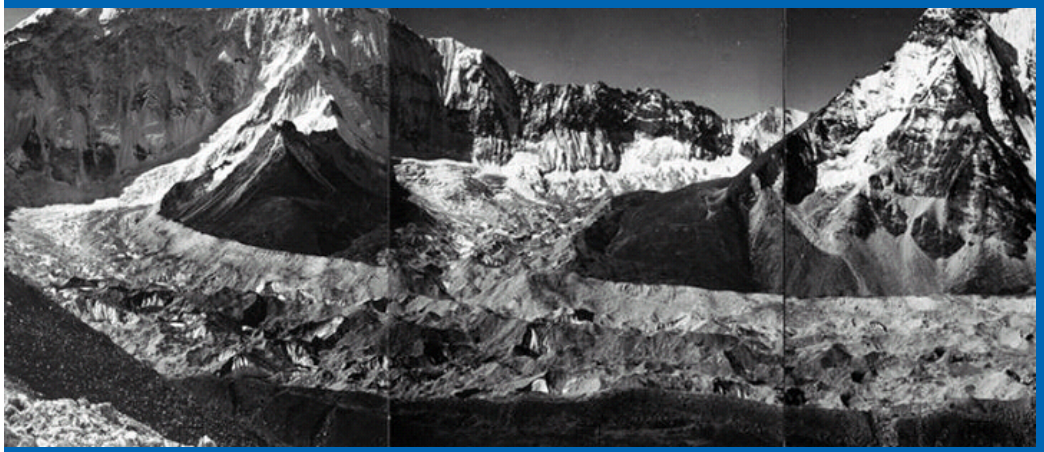
NGOs introduced an effective system of community-based water, however, neither these arrangements nor the traditional arrangements in other communities have been recognized or incorporated into the government's water sector plans and interventions. (Chitral, Pakistan)

Message 6: National institutions and policies strongly affect people's ability to adapt at the local level, but the they are rarely informed about adaptation concerns and priorities.

Governments invest in flood protection when drought was the main concern – lack of bottom up approach in policy shaping (PaanchKhal, Nepal)

Key Issues

1. Scale issue



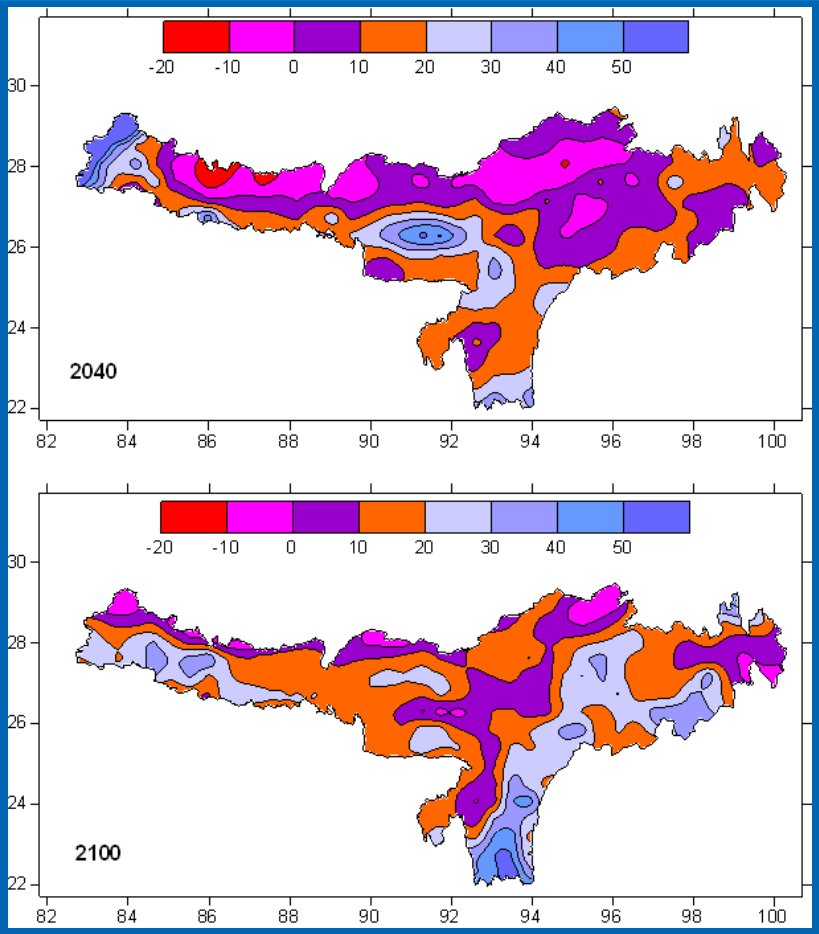
1956 photograph of Imja glacier
(Photo: Fritz Muller, courtesy of Jack Ives)

2006 photograph of Imja glacier
(Photo: Giovanni Kappenberger ,courtesy of Alton C Byers)

- Change is not new. What is new is the rate of change.

➔ "We need to develop adaptation strategies to climate change"

2. Knowledge issue



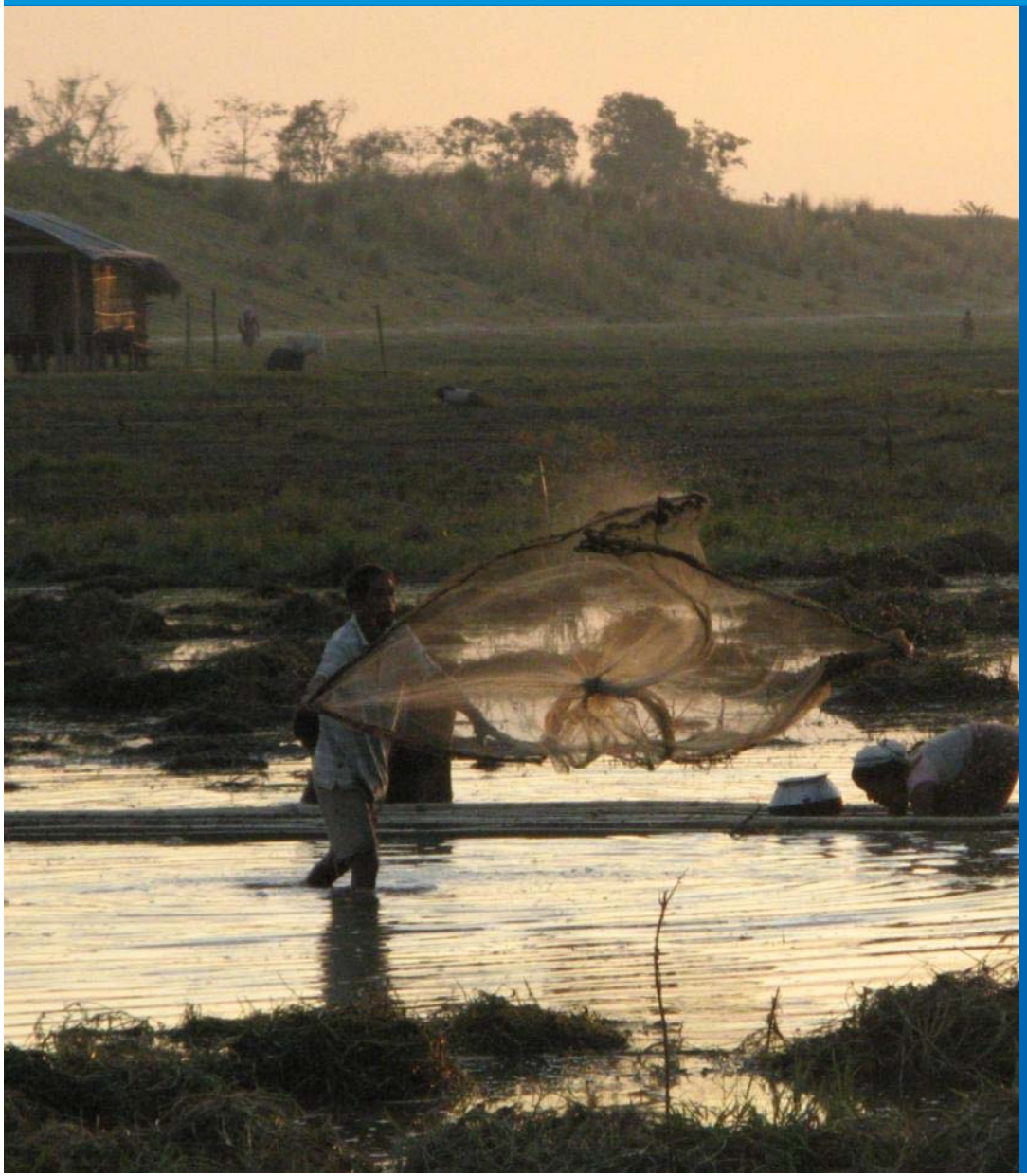
The skill of climate models to simulate precipitation is still low resulting in high bias and low confidence in the projections.

Source: Shrestha and Devkota 2010

- Future is uncertain. Knowledge about future climate impacts is important to develop planned adaptation strategies.

➔ "We need more emphasis on scientific projections."

3. Policy issue



- Who is supported in their effort to adapt to climate change? How?
- Adaptation for whom? for what? to what?
- What are the trade-offs?

➔ “We need to focus on community-based climate change adaptation.”

Opportunities

1. Scale opportunity

- Community have already been adapting to climate change and climate variability for centuries.

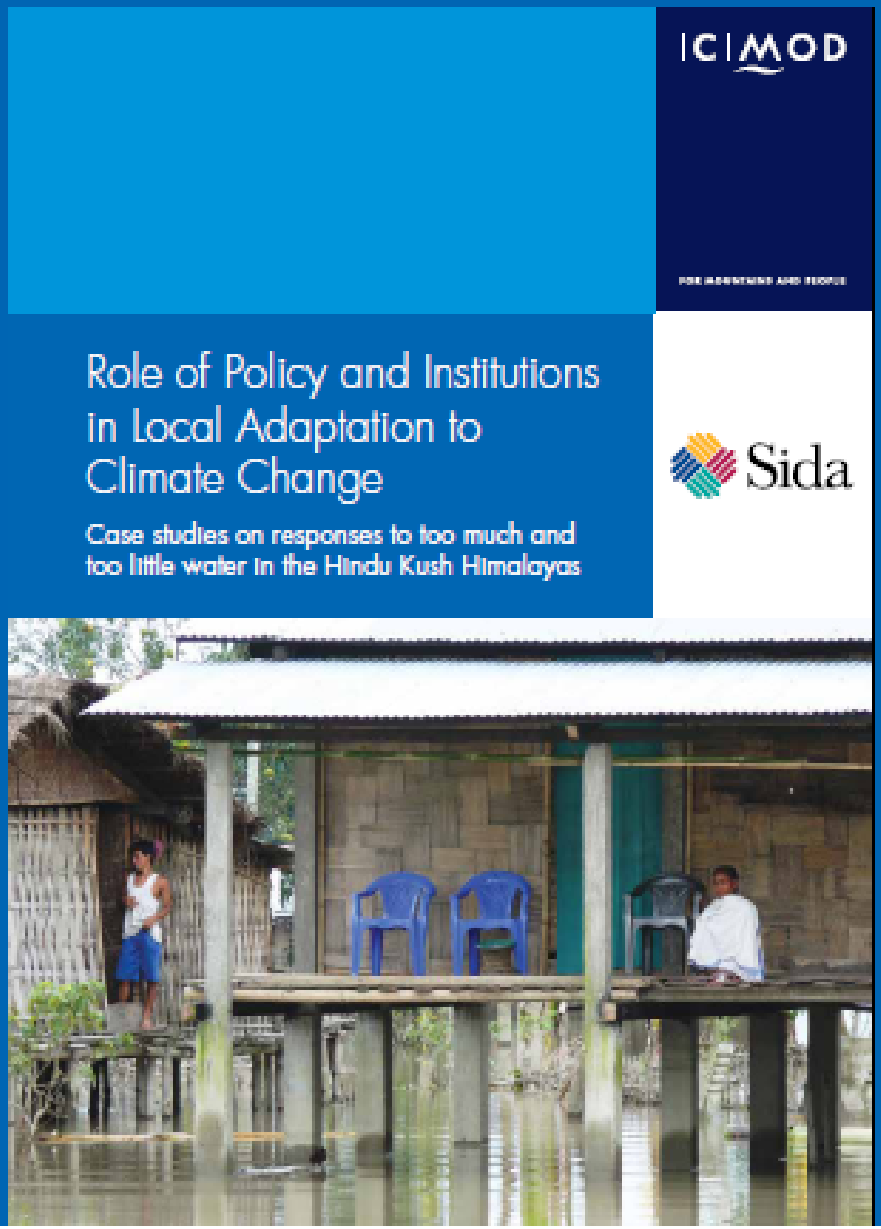
➔ Opportunity to know what those local existing adaptation strategies are and how robust they are in the changing context

2. Knowledge opportunity

- Climate predictions should not be the central tool to guide adaptation to climate change.

➔ Opportunity to focus on existing vulnerabilities and the real causes of vulnerability in a context of change where climate change is one driver among others.

3. Policy opportunity



- Local responses are influenced by wider trends, processes and pressures, in particular larger policy and market contexts.

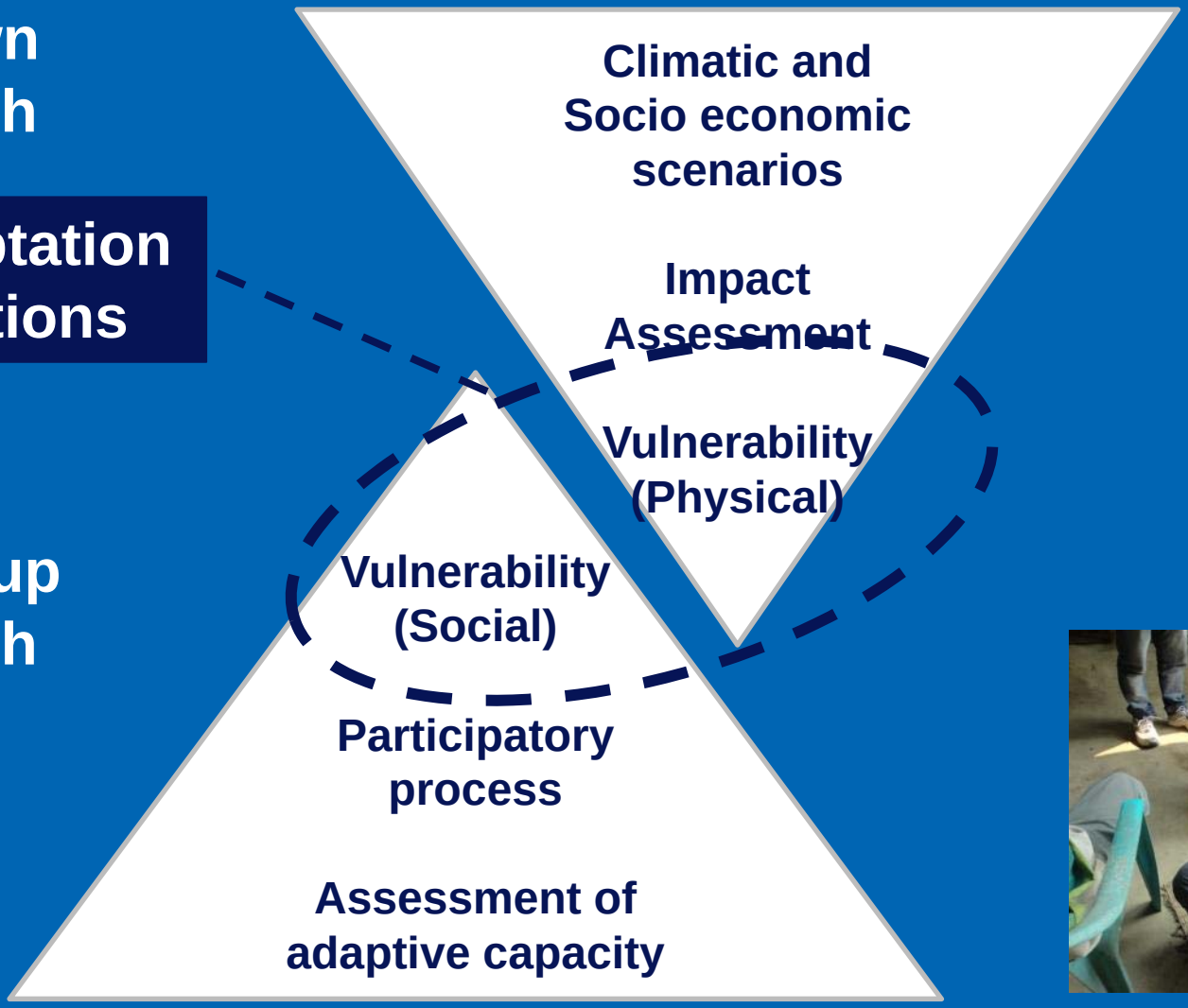
➔ Opportunity to understand the role of policies in influencing how people are supported (or not) in their efforts to deal with climate change.

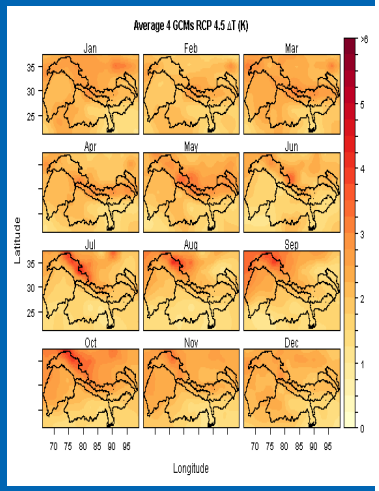
Conclusion

Top-down Approach

Adaptation Options

Bottom-up Approach





Thank you

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Trade-offs in water allocation