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Adaptation Planning for Building Resilience in the Himalayan Region in the Context of Paris Agreement

Binaya Raj Shivakoti

*Senior Water and Adaptation Specialist,
Institute for Global Environmental Strategies, Japan*

Contents

- Conceptual discussion
- 'Adaptation' in the Paris Agreement
- Adaptation planning in Himalayan region



Group discussion

Adaptation gap and adaptation planning in
Bhutan

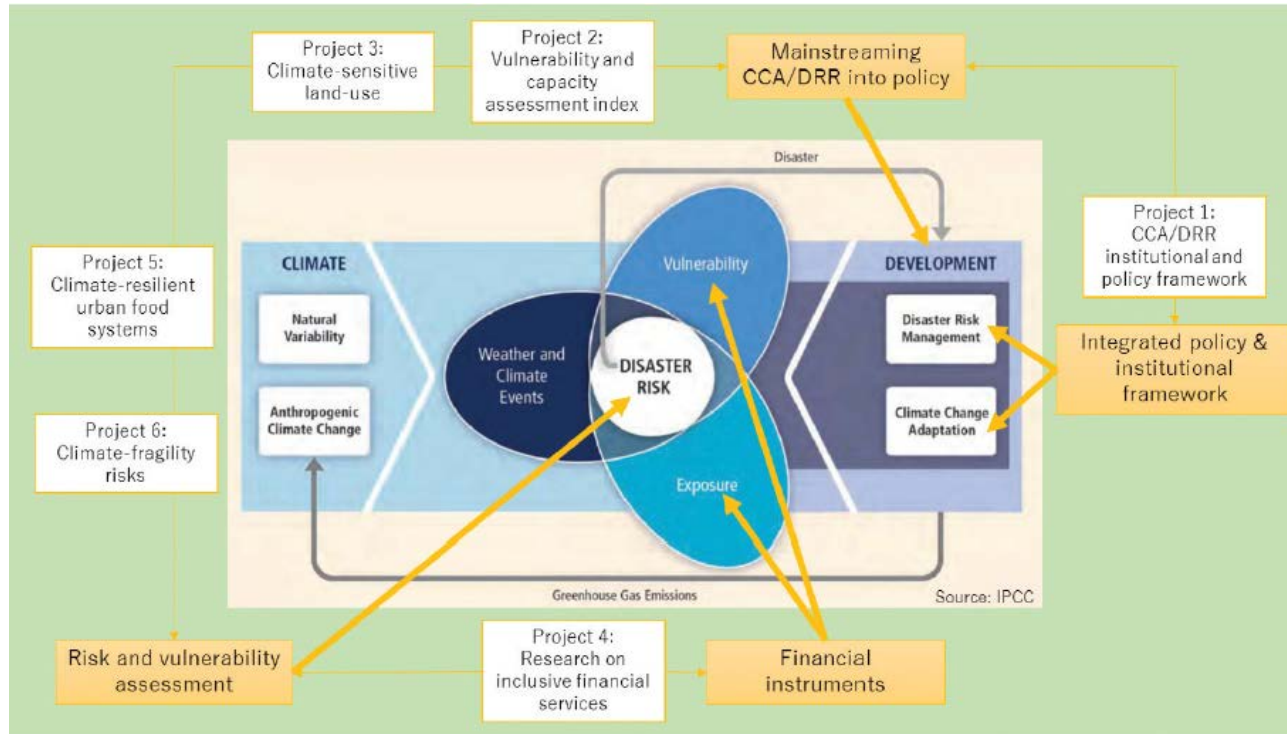
IGES at a Glance

- Established under an initiative of the Japanese government in 1998 with the support of Kanagawa Prefecture where the IGES Headquarters is located.
- Aims to bring about a transition to ***a sustainable, resilient, shared, and inclusive Asia-Pacific region and the world*** through:
 - Acting as an *Agent of Change*
 - Conducting strategic research to generate collective impact generation with key stakeholders (***co-design and co-production***): United Nations organisations, multilateral banks/financial institutes, central/local governments, and the private sector.
- About 160 professional staffs implement a number of projects funded by various organisations.
- A new four-year ***Integrative Strategic Research Programme for the Seventh Phase (ISRP 7th Phase)*** started in July 2017.



Approach of IGES Adaptation Research



Overarching aim: Building knowledge and capacities for integrated approaches to climate change adaptation and disaster risk reduction to reduce vulnerability to climate change in the Asia-Pacific region.



Focuses: Integrated policy/institutional frameworks, risk and vulnerability assessments, mainstreaming CCA/DRR into policy, and financial instruments

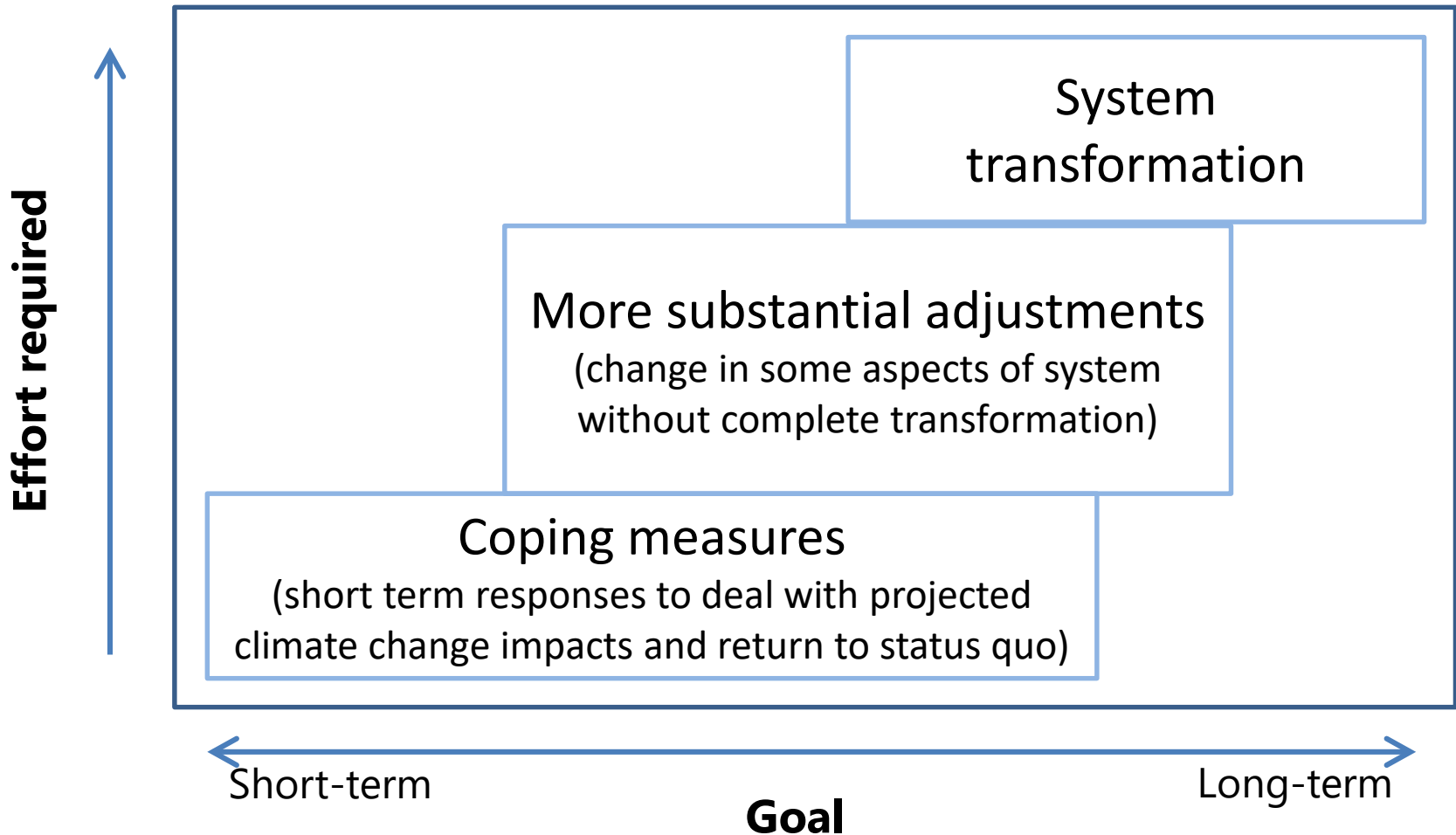
Conceptual Discussion

Adaptation, Transformation and Resilience

- **Adaptation**: The process of **adjustment to actual or expected climate and its effects**. In human systems, adaptation seeks to moderate or avoid harm or exploit beneficial opportunities. In some natural systems, human intervention may facilitate adjustment to expected climate and its effects. 
- **Transformation**: A **change in the fundamental attributes** of natural and human systems. Transformation could reflect strengthened, altered, or aligned paradigms, goals, or values towards promoting adaptation for sustainable development, including poverty reduction. 
- **Resilience**: The **capacity** of social, economic, and environmental systems **to cope with** a hazardous event or trend or disturbance, responding or reorganizing in ways that **maintain** their essential function, identity, and structure, while also maintaining the capacity for **adaptation, learning, and transformation**.

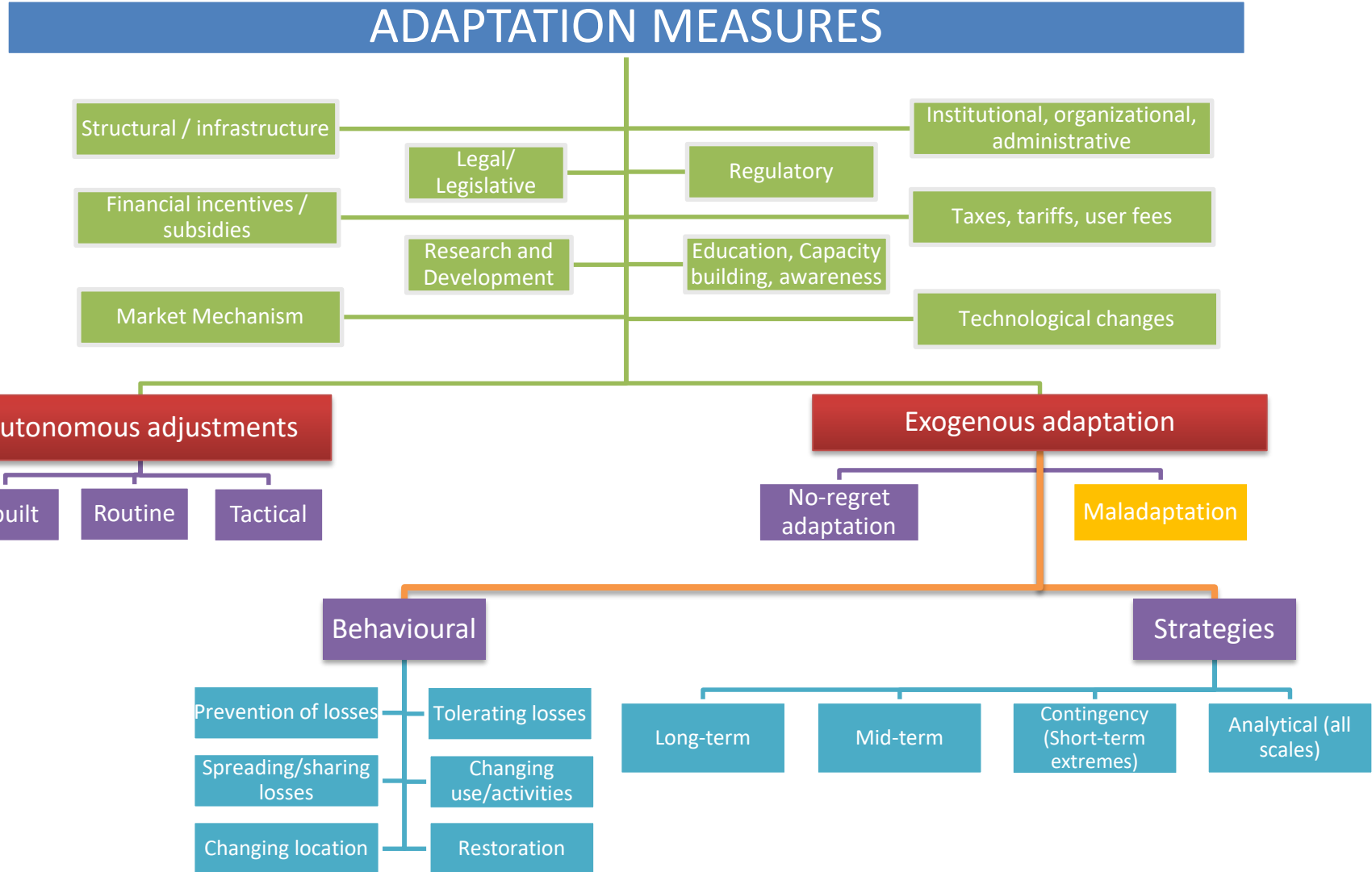
Source: IPCC AR5

Scope and Scale of Adaptation to CC



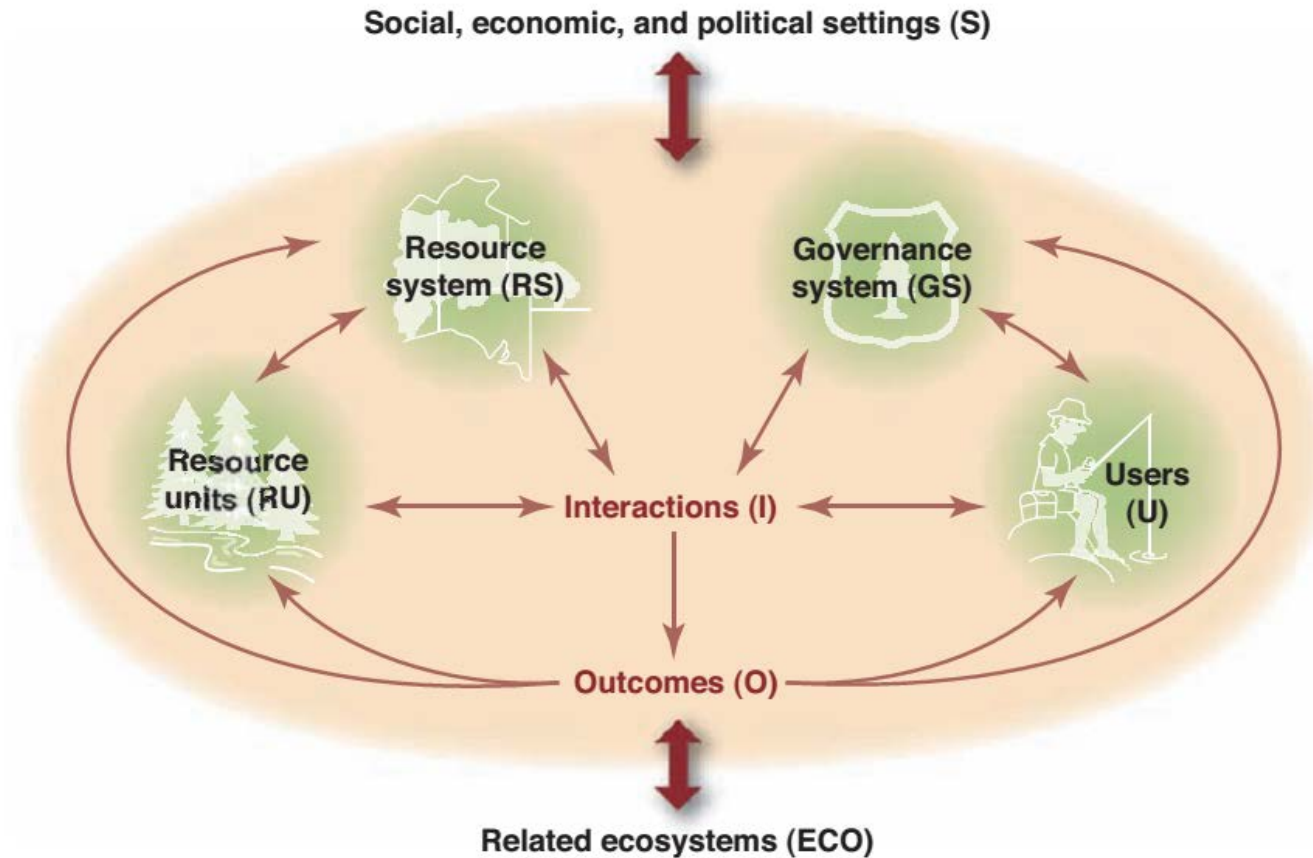
Source: Moser and Ekstrom. 2010. A framework to diagnose barriers to climate change adaptation. www.pnas.org

Adaptation Measures



Source: based on IPCC Technical Guidelines for Assessing Climate Change Impacts and Adaptation, 1994

Adaptation in the Broader Context of Socio-Ecological System (SES)



Source: Ostrom et al, 2009. Science 325:419

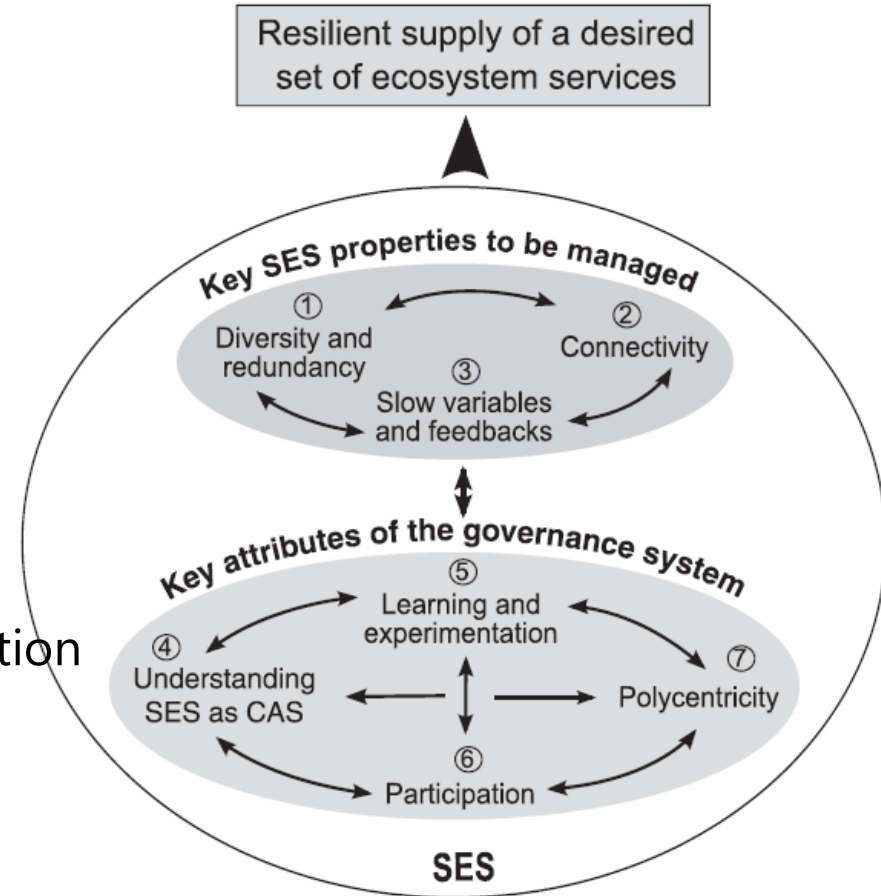
Enhancing Resilience of Socio-ecological System

SES properties to be managed

1. Maintain diversity and redundancy
2. Manage connectivity
3. Manage slow variables and feedbacks

Governance system

4. Foster an understanding of SES as complex adaptive systems (CAS)
5. Encourage learning and experimentation
6. Broaden participation
7. Promote polycentric governance systems



* Resilience of ecosystem services (ES) is the capacity of a socio-ecological system (SES) to sustain a desired set of ES in the face of disturbance and ongoing changes in SES

Source: Biggs et al. 2012. Toward Principles for Enhancing the Resilience of Ecosystem Services, *Annu. Rev. Environ. Resour.* 2012. 37:421–48

'Adaptation' in the Paris Agreement

Adaptation in the Paris agreement

- At 21st COP, the Paris Climate Agreement was adopted by consensus on 12 December 2015. 174 Parties have ratified the agreement (out of 197 Parties to the Convention)
- Establishes Global Goal on Adaptation (Article 7)

“enhancing adaptive capacity, strengthening resilience and reducing vulnerability to climate change, with a view to contributing to sustainable development and ensuring an adequate adaptation response in the context of the temperature goal (2 °C & 1.5 °C) referred to in Article 2”.

- All Parties are to undertake and communicate ambitious efforts to the global response to climate change, including for adaptation, through **nationally determined contributions (NDCs)**

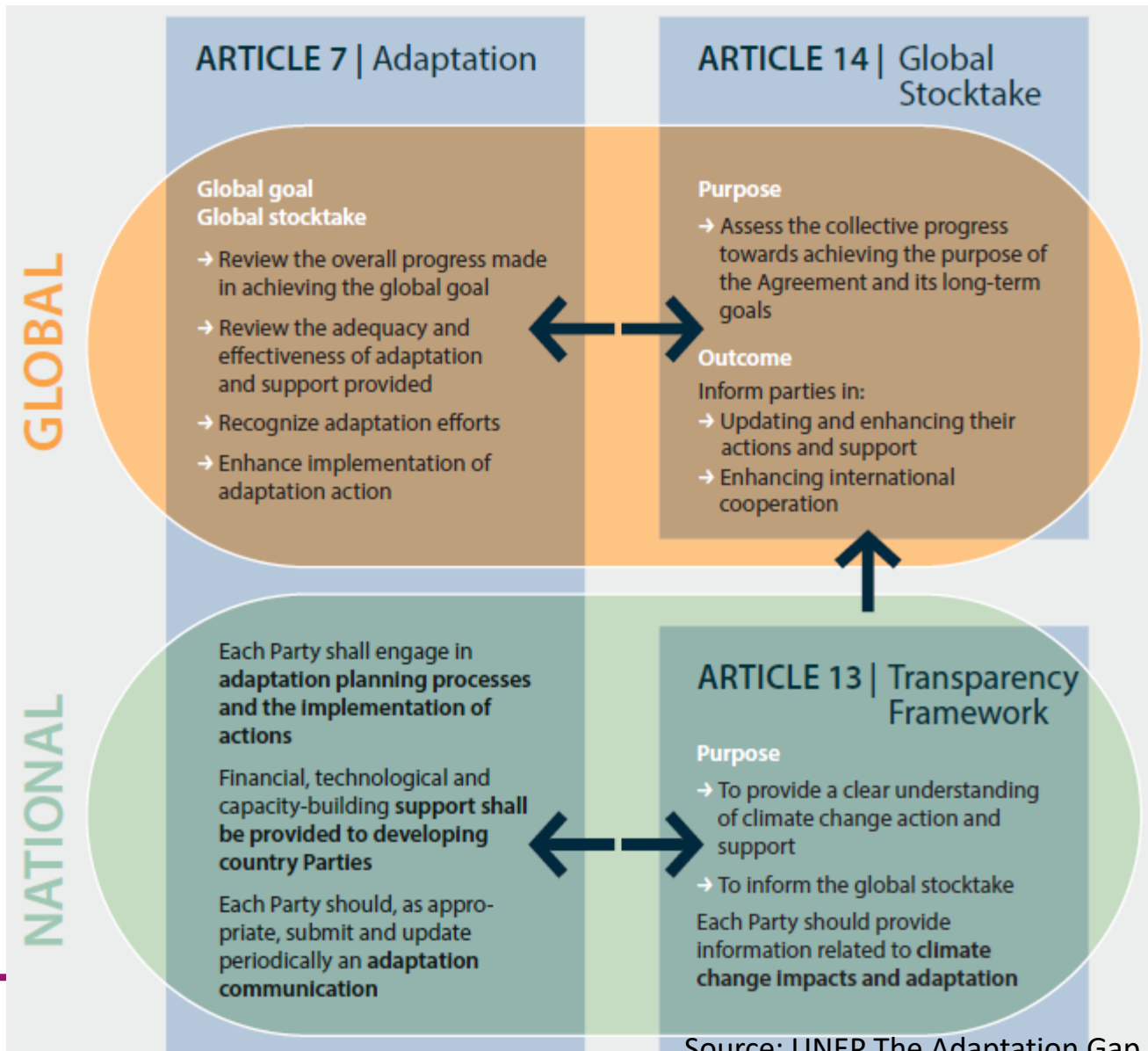
NDCs' Adaptation Priorities of Himalayan Counties

(Afghanistan, Bangladesh, Bhutan, China, India, Myanmar, Nepal, Pakistan)

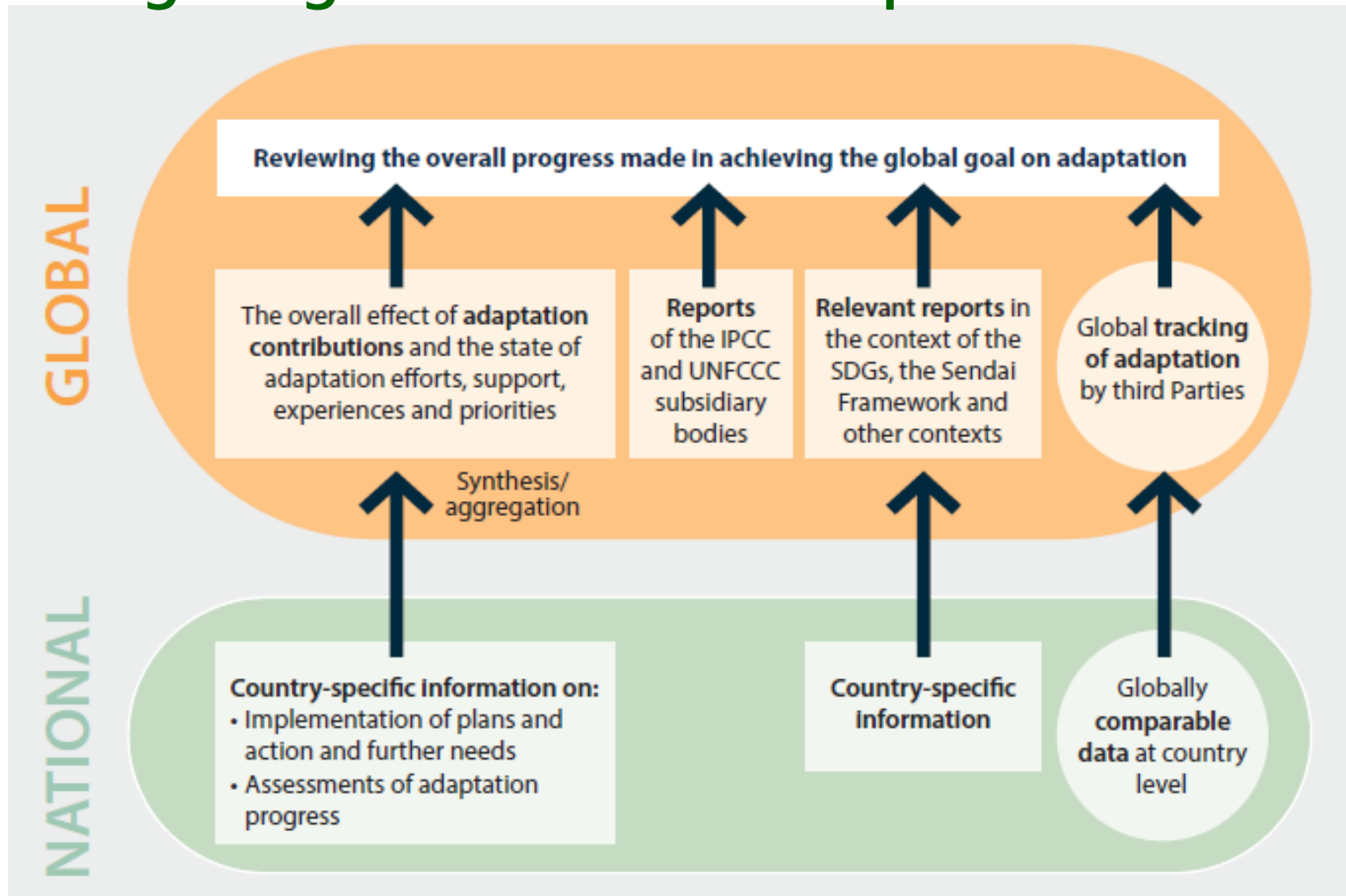
- Capacity (research, information, adaptation technologies, monitoring, vulnerability assessment, planning)
- Improved early warning systems, disaster preparedness and protection measures
- Forest, biodiversity, ecosystem conservation
- Water resources and climate resilient infrastructure
- Climate resilient/smart agriculture
- Climate resilient Health

Source: UNFCCC

Paris Agreement: Key Adaptation Provisions and their Interlinkages



Paris Agreement: Reviewing Progress of Global Adaptation Goals



Source: UNEP The Adaptation Gap Report 2017

Adaptation Planning in the Mountainous Region

Key Adaptation Issues in the Mountainous Region of Asia (from IPCC AR5 WGII)

- Shrinking mountain glaciers, melting of permafrost, and enhanced risk of glacier lake outburst floods (GLOF)
- Flash floods, slope-failures
- Vulnerability of mountain communities, farming systems, ecosystems and biodiversity;

Common Adaptation Challenges in the Mountainous Region of Asia

- The region hosts five climatically vulnerable Least Developed Countries (Afghanistan, Bangladesh, Bhutan, Nepal, Myanmar) in Asia
 - Poverty and subsistence livelihood
 - High dependency on climate sensitive sectors (water resources, agriculture)
 - High exposure to higher climatic risk and often without safety nets.
 - High vulnerability and low adaptive capacity (human, technical, financial)

Mountain Specificities:

What Makes Mountainous Areas Different From Other Regions

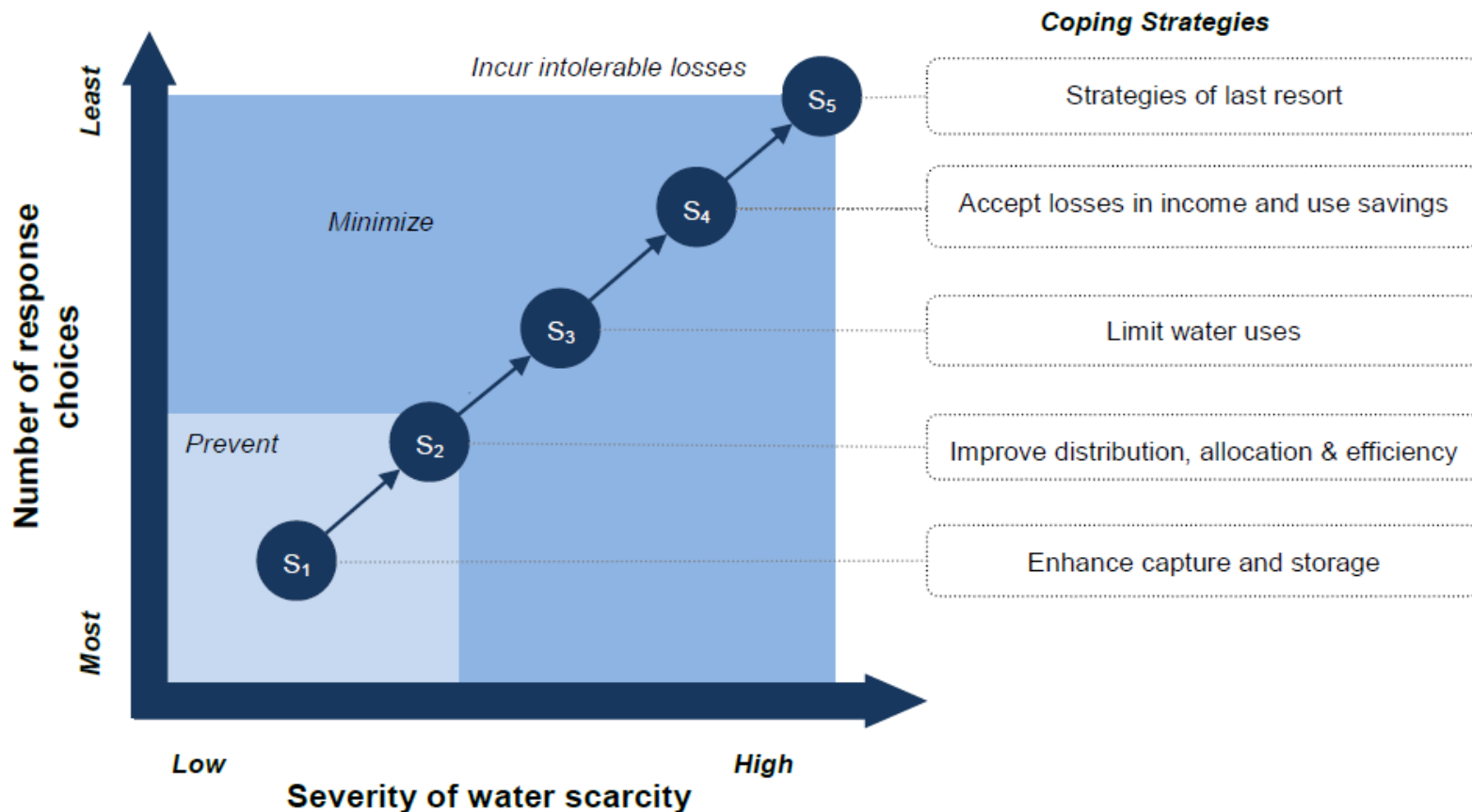
Inaccessibility / remoteness	Overall terrain condition (slope, altitude, distance), seasonal hazards (landslides, snow, storms), limited mobility (isolation, communication)
Fragility	High bio-physical sensitivity to external/human interventions
Marginality	Area, people and their sustenance system with limited options and capacities
Diversity/ Heterogeneity	Immense variability among and within eco-zones (climate, terrain, lifestyles, biodiversity etc)
Niche / Comparative advantage	Scope for numerous specialized activities and products due to specific environmental and resource related features
Human adaptation mechanisms	Evolution of own adaptation mechanism influenced by constraints and opportunities

Consideration of these mountain specificities are important for adaptation planning in the Himalayan region

Source: ICIMOD, 1992

Limits of Adaptation

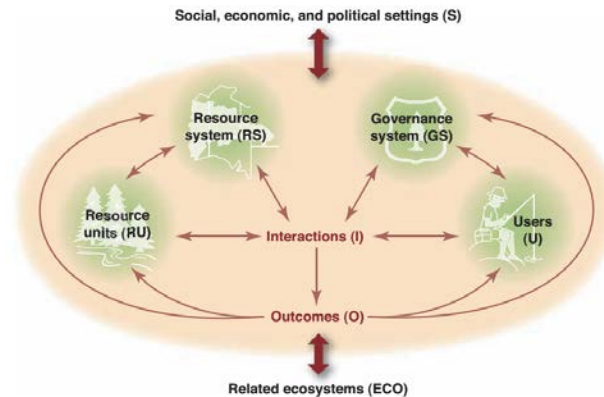
Adaptation has its limits, and likely intensification of the impacts of CC necessitate alternative planning strategies beyond short term coping measures and autonomous adjustments



Source: IGES. 2015. Climate change, changing rainfall and increasing water scarcity: An integrated approach for planning adaptation and building resilience of smallholder subsistence livelihoods in Nepal

Adaptation Planning for Resilience Building

- Enhancing resilience of a socio-ecological system as a holistic planning strategy is essential to deal with systemic dynamics and complexity.



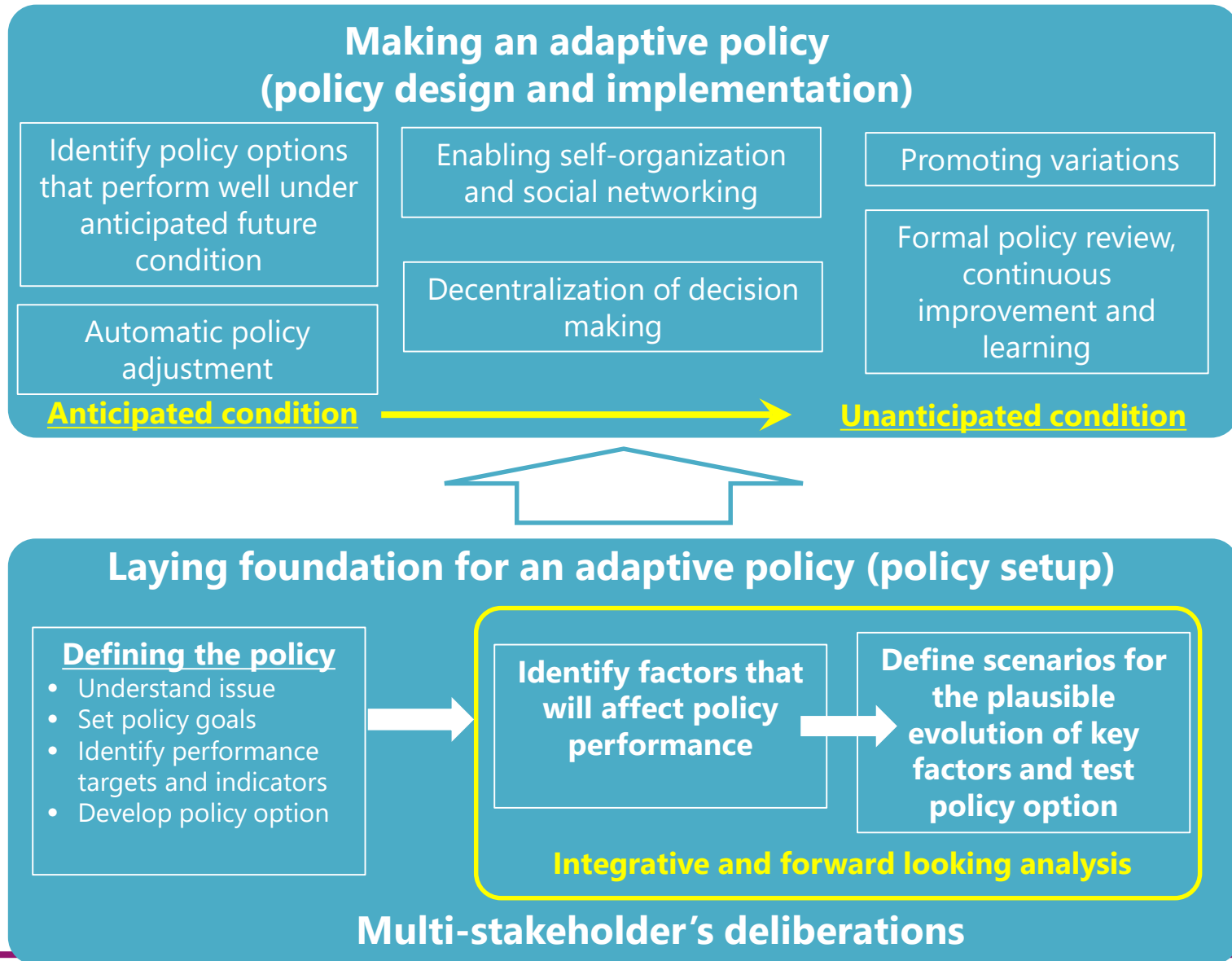
- Enhancing of resilience encompasses both the capacity to adapt and capacity to cross thresholds (i.e, transformative adaptation);
- While such a holistic planning has its own barriers for implementation (time, resources, scale, regulation etc.), it is prudent to identify conditions that would leverage initiation of transformative actions.

Focus on Adaptation Effectiveness

- Adaptation decisions will continue to be made with imperfect knowledge because of future climatic uncertainty
- Most of the adaptation activities focus on input and process involved and often fail to make direct connection to the intended final results/outcomes/contribution.
- Evaluation/contribute to results/outcomes and effectiveness of adaptation actions to enhance adaptive capacity, reducing vulnerability, and improving resilience is necessary in future adaptation planning.

Source: UNEP Adaptation Gap Report 2017

Planning: an example of adaptive policy making



Group discussion: Adaptation Gap and Planning in Bhutan

- What are the main adaptation gaps?
- Measures to overcome adaptation gaps
- Planning for enhancing resilience and preparing for a transformative adaptation
- How to enhance the effectiveness of adaptation actions in Bhutan?

Question 1: What are the main adaptation gaps in Bhutan

(Knowledge, Technology, and Finance)

“The adaptation gap can be defined generically as the difference between actually implemented adaptation and a societally set goal, determined largely by preferences related to tolerated climate change impacts, and reflecting resource limitations and competing priorities”

Question 2: Ways to over overcome those gaps

(Initiated, planned, and yet to be addressed)

Question 3: Planning for enhancing resilience and preparing for a transformative adaptation

(limits of adaptation, system components that need to be transformed, governance system, including planning, which has to be strengthened)

Question 4: How to enhance the effectiveness of adaptation actions in Bhutan?

(contributions of actions in reducing vulnerability, enhancing resilience, and increasing adaptive capacity, monitoring and assessment of the progress on adaptation, reporting)

Kadinchey la!!

ご清聴ありがとうございました！！

Thank you very much for your kind attention!!



For further inquiries and reference materials used in this presentations:

shivakoti@iges.or.jp