

APN Scoping Workshop  
Enhancing Actions of Developing Countries on Adaptation  
in the Asia-Pacific Region

# Two Approaches in CC Adaptation

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# 1. Premises for Adaptation Planning

- **Occurring impacts**

Effects of climate change has been experienced in the world. Proceeding of CC to a certain extent will be inevitable.

- **Adaptation deficit**

Many developing countries are not safe even for today's climate risks, such as floods, droughts, landslides etc.

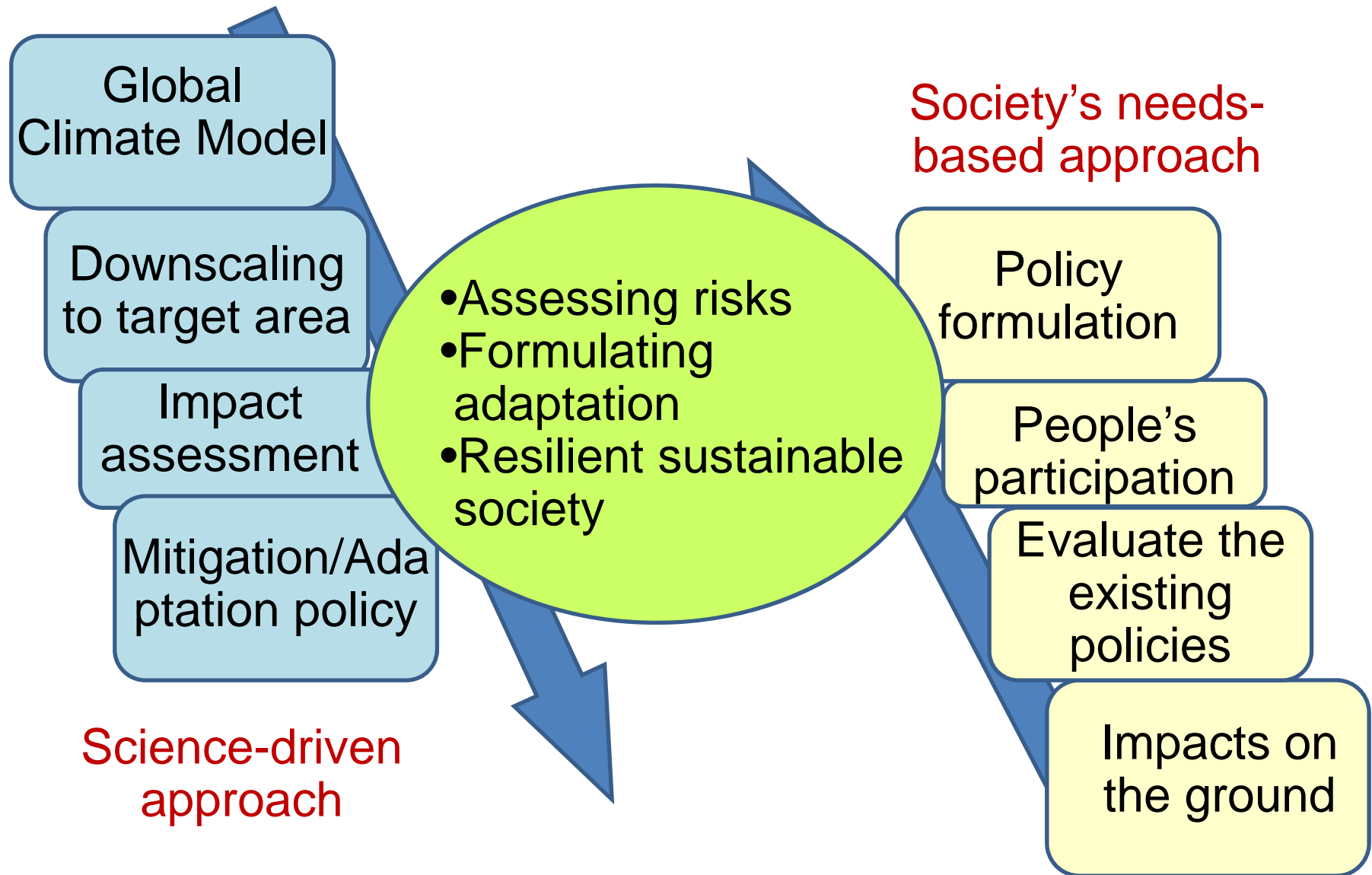
- **Adaptation in local scale**

Requested is assessment of impacts/vulnerability and adaptation planning in national, sub-national and local scales.

- **Decision-making under uncertainty**

Uncertainty is inevitably involved in the CC projection. How to deal with the uncertainty is a major issue in decision-making for adaptation.

## 2. Approaches in Two Directions



# Science for Adaptation

GCMs(Climate Models)



Downscaling

- 1) Downscaling
- 2) Statistical downscaling
- 3) Data assimilation



Impact assessment

- 1) Models for physical impacts
- 2) Estimate economic impacts
- 3) Incorporate socioeconomic changes to the assessment



Adaptation planning

- 1) Strategy and sectoral options
- 2) Effects of adaption
- 3) Capacity building



Communication and awareness

<Gaps>

Method development  
Data observation, collection, and mining/ Calibration of RCMs  
Data distribution/ interface with downstream

Impact models  
Current/ future impacts  
Compound impacts

Present response/ long-term adaptation  
Recognition of politicians and decision-makers  
Range of capacity building

People's acceptance

# Merits and Limitations

## Science-driven approach:

- projections needed for proactive adaptation
- but too complicated for local governments and communities.

## Society need-based approach:

- effective for responses to “today’s problems” based on the needs on the ground
- but long-term CC risk may diffuse in the sea of problems

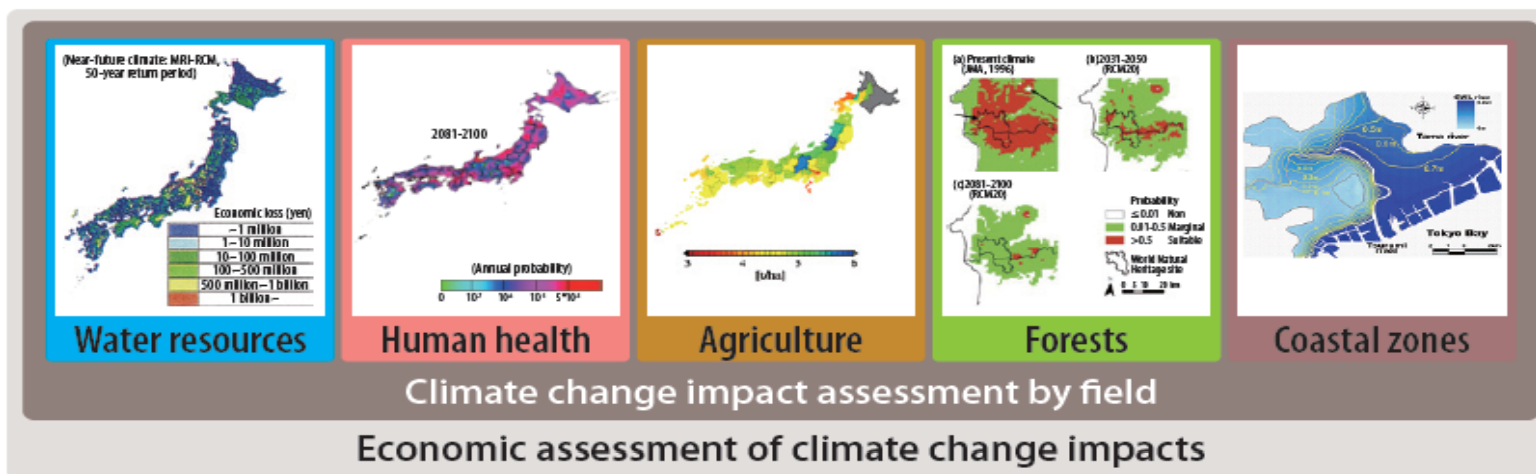
## <Gaps>

How to incorporate the scientific results to the today’s decision-making?

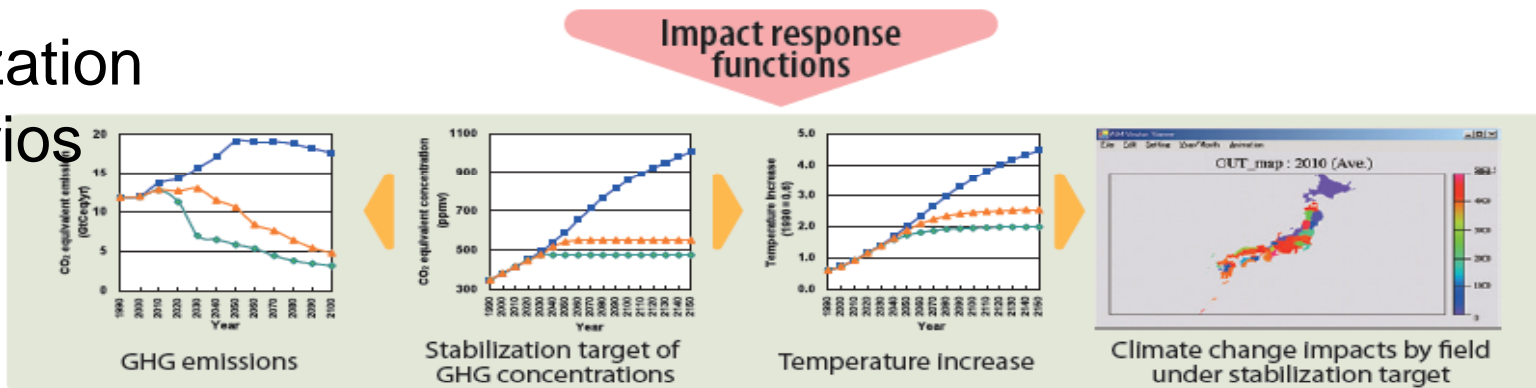
What capacity is needed for this?

# Comprehensive Assessment in S-4 and S-8

## Target Areas

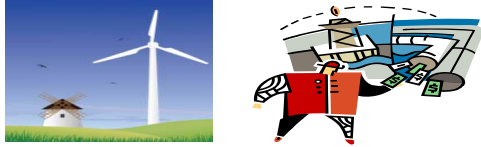


## Stabilization Scenarios

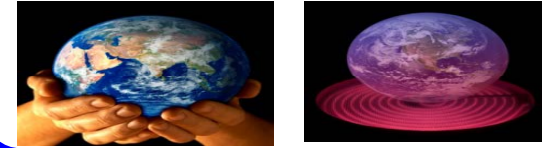


- Distribution of damages
- Damage costs for different emission pathways
- Foundation for national CC policy

### Socioeconomic scenarios



### Climate scenarios



**【Theme 1】 Research on highly reliable quantitative assessment of climate change impacts throughout Japan**



Climate scenario downscaling  
Economic assessment  
Integrated assessment model

Feedback of actual conditions from local governments

Feedback of actual conditions from developing countries

**【Theme 2】 Research on impact assessment and comprehensive adaptation policies at local government level**



Local government consortium

**【Theme 3】 Research on indexes for assessment of vulnerability and adaptation effects in the Asia-Pacific region**



Various impact and adaptation studies in the Asia-Pacific region

Provision of scientific findings to policy decision-making organs in Japan and other countries

Simplified assessment method

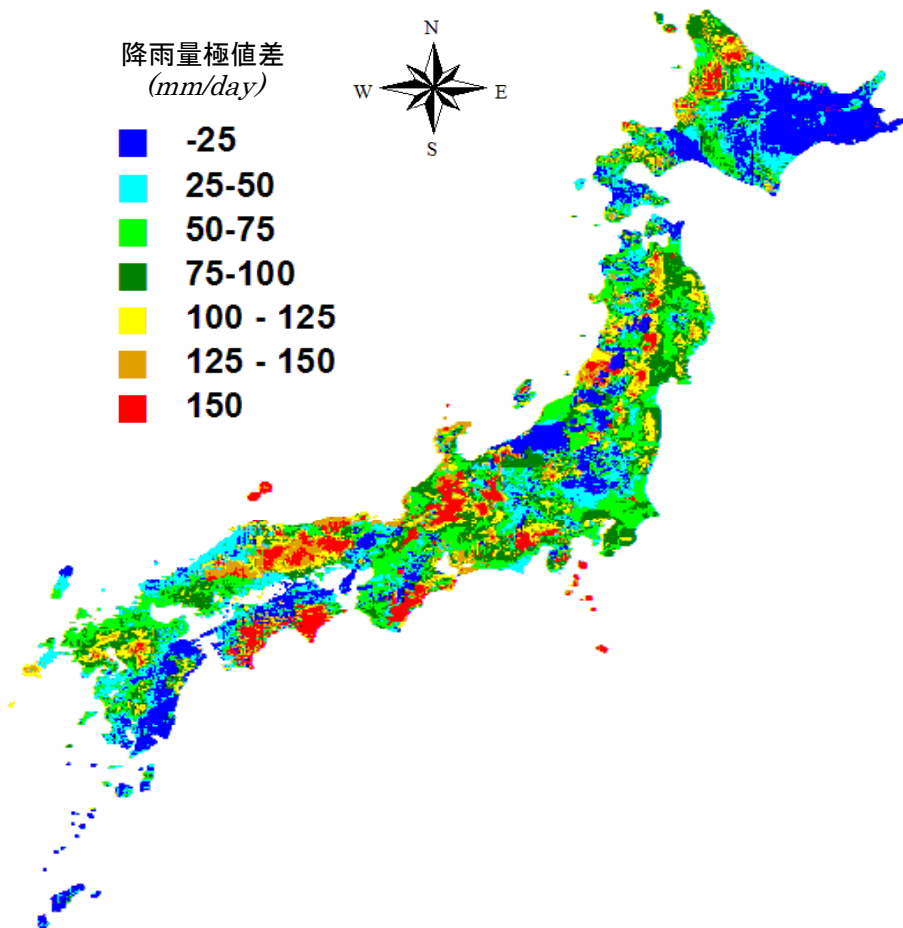
Regional projection method



# Distribution of Disaster Risks

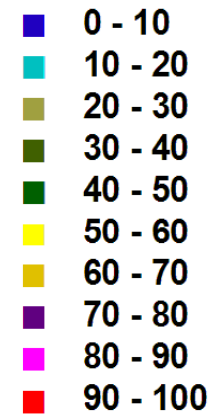
## Changes in Precipitation In 2030

- 1/50 present becomes 1/30

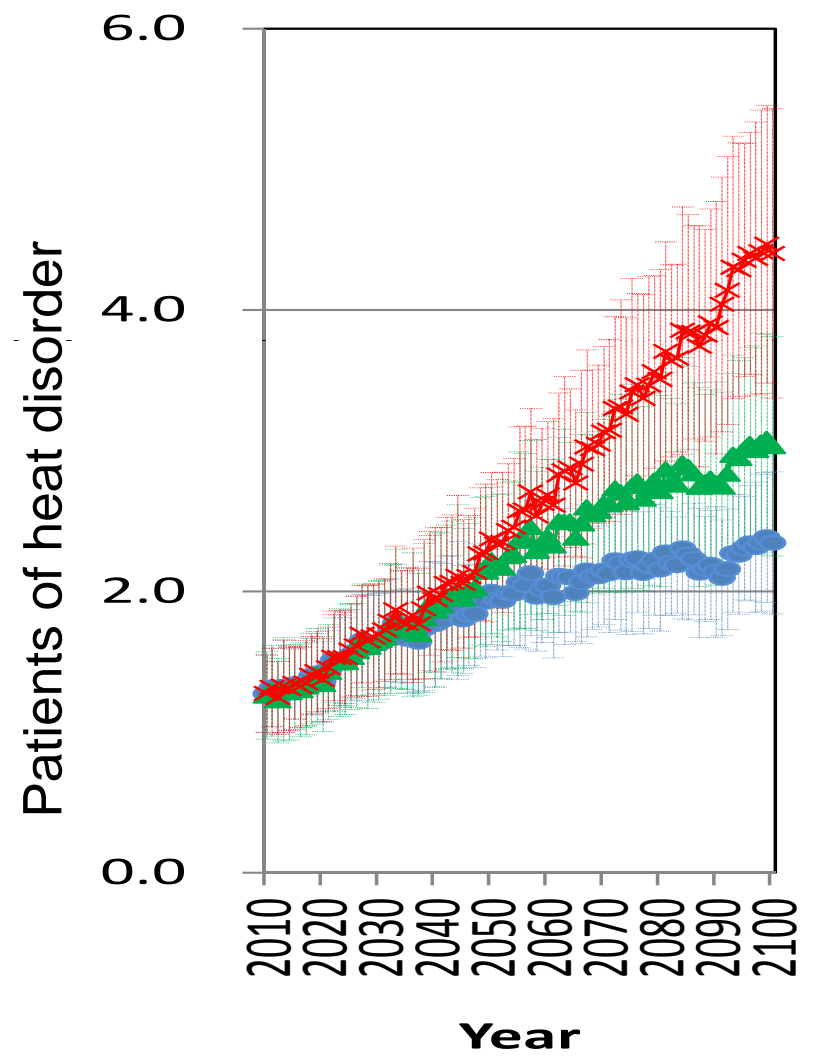
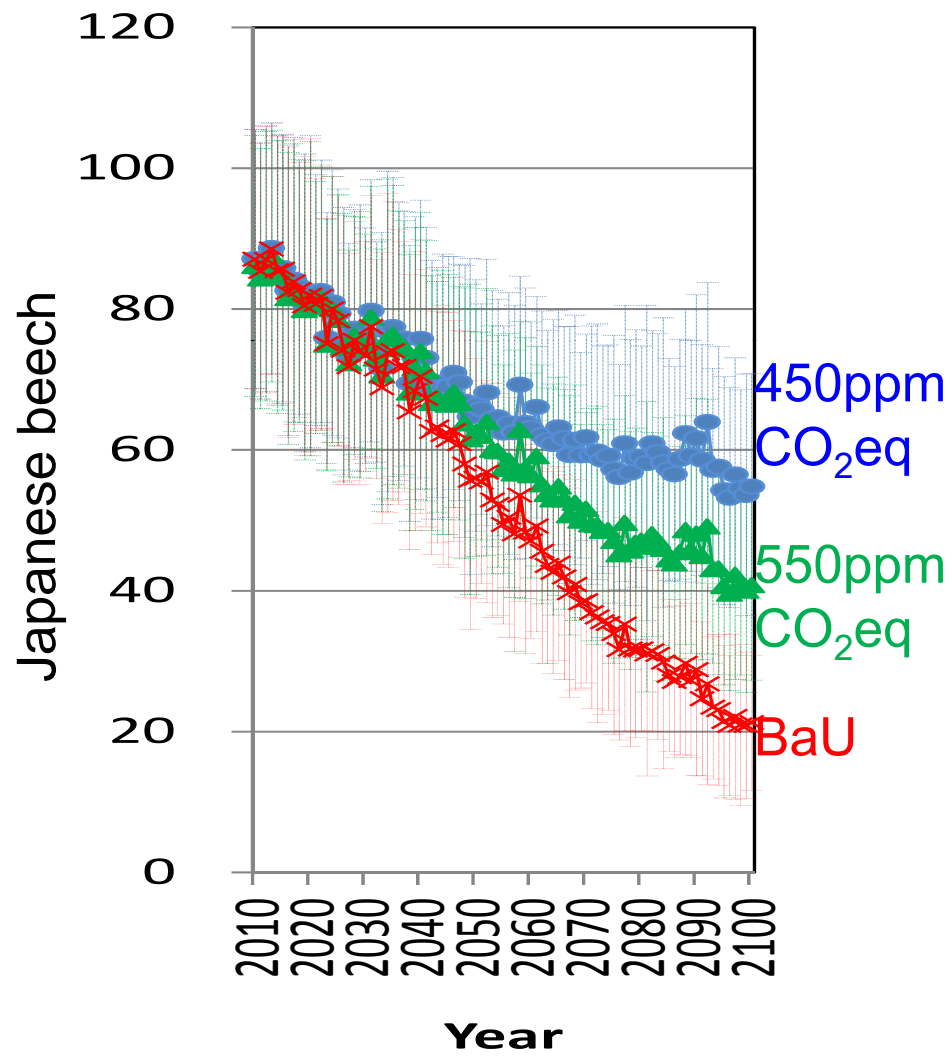


## Increased land slide probability in 2050

斜面崩壊発生確率  
(%)



# Range of Impacts due to Climate Models -Japanese Beech and Heat Disorder



### 3. How to combine the risk information with responses

#### - Wise adaptation approach

- How to plan adaptation under uncertainties in climate projection, effects of mitigation, social changes etc?
- Introduce effective, efficient, flexible adaptation.
- Short-term and long-term planning
  - 1) Short-term adaptation
    - respond to occurring climatic extremes e.g. DRM
    - monitoring/early warning, evacuation, rehabilitation
    - strengthen the existing policies and institutions
    - “real time adaptation”
  - 2) Long-term adaptation
    - flexible adjustment of adaptation planning
    - no/low regret policy
    - incorporate the latest scientific information and GPs
    - “adaptive adaptation”

# Summary

1. Four premises for adaptation planning; 1) occurring CC impacts, 2) adaptation deficit, 3) adaptation planning in local scale, and decision-making under uncertainty.
2. Two approaches for adaptation; 1) science-driven approach and 2) society's needs-based approach.
3. Wise adaptation; 1) short-term (real time adaptation) and 2) long-term (adaptive adaptation)

Thank you very much.