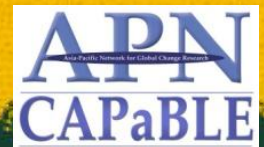


Integrating Science and Local Knowledge for Climate Change Impacts and Vulnerability Assessments in the Philippines

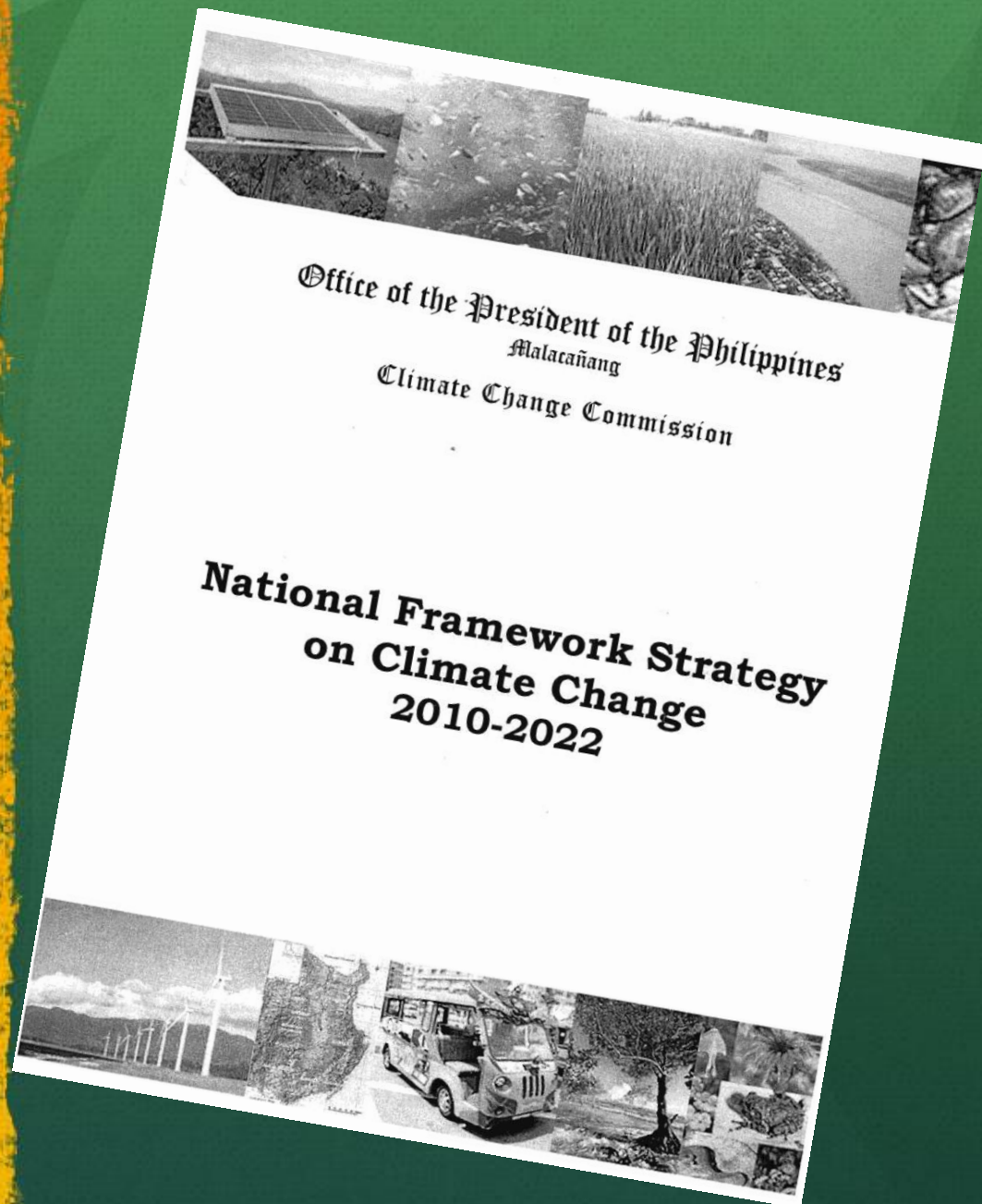
Juan M. Pulhin and Maricel A. Tapia
College of Forestry and Natural Resources
University of the Philippines Los Baños



Philippine's National Framework Strategy on Climate Change

One of Objectives for the Adaptation Pillar:

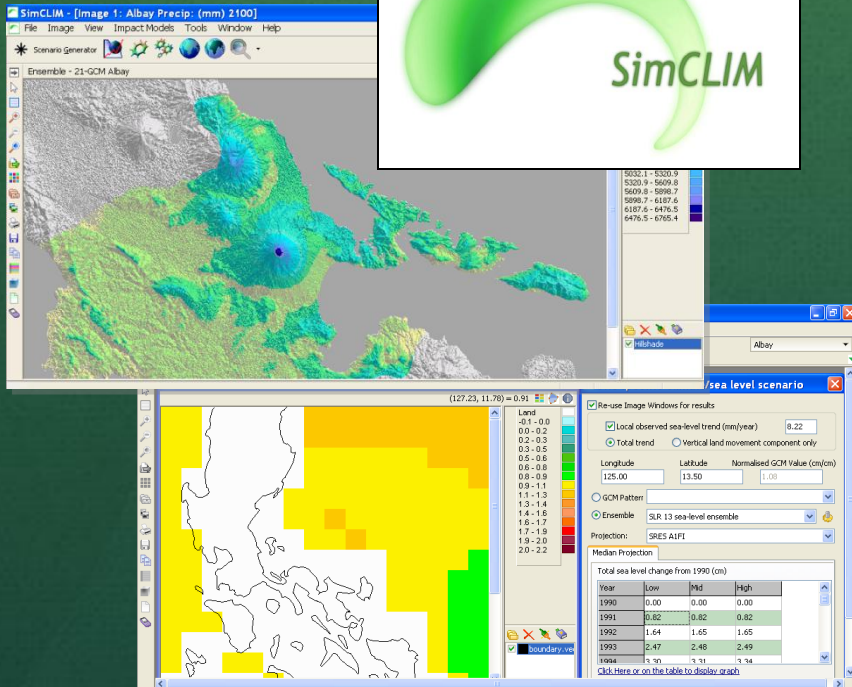
“Enhance vulnerability and adaptation assessment to serve as the country's scientific basis for formulating appropriate climate change adaptation strategies”



Integration of Science and Local Knowledge

Computer Modeling System (SimCLIM)

Participatory Methods



V&A Assessment Study Sites:

Focused on forest and coastal communities in Albay:

Forest/Uplands: Brgys. San Antonio and Bogtong in Oas (under Community-Based Forest Management)



Coastal Zone: Brgys. Poblacion 1, Cawayan and Cagraray in Bacacay (Cagraray Island has 45 km. coastal area)

Forest Communities: Impacts of Climate Variability and Extremes

Agriculture



Forests



Water

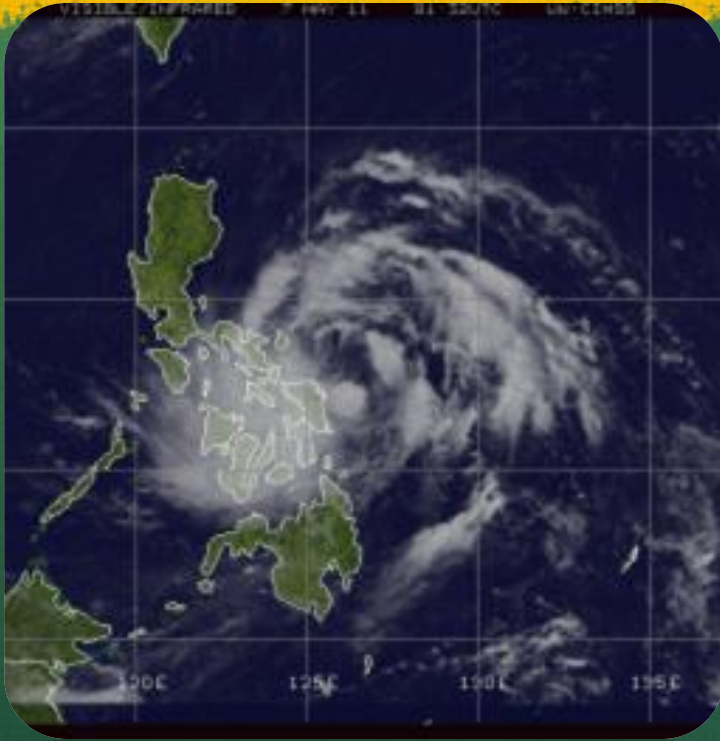
Forest Communities: Impacts of Climate Variability and Extremes



**Health,
Properties,
Gender, Equity**



Coastal Communities: Hazards Coastal Communities Are Exposed To



Typhoons

Image Credit: PAGASA-
DOST



Storm Surges

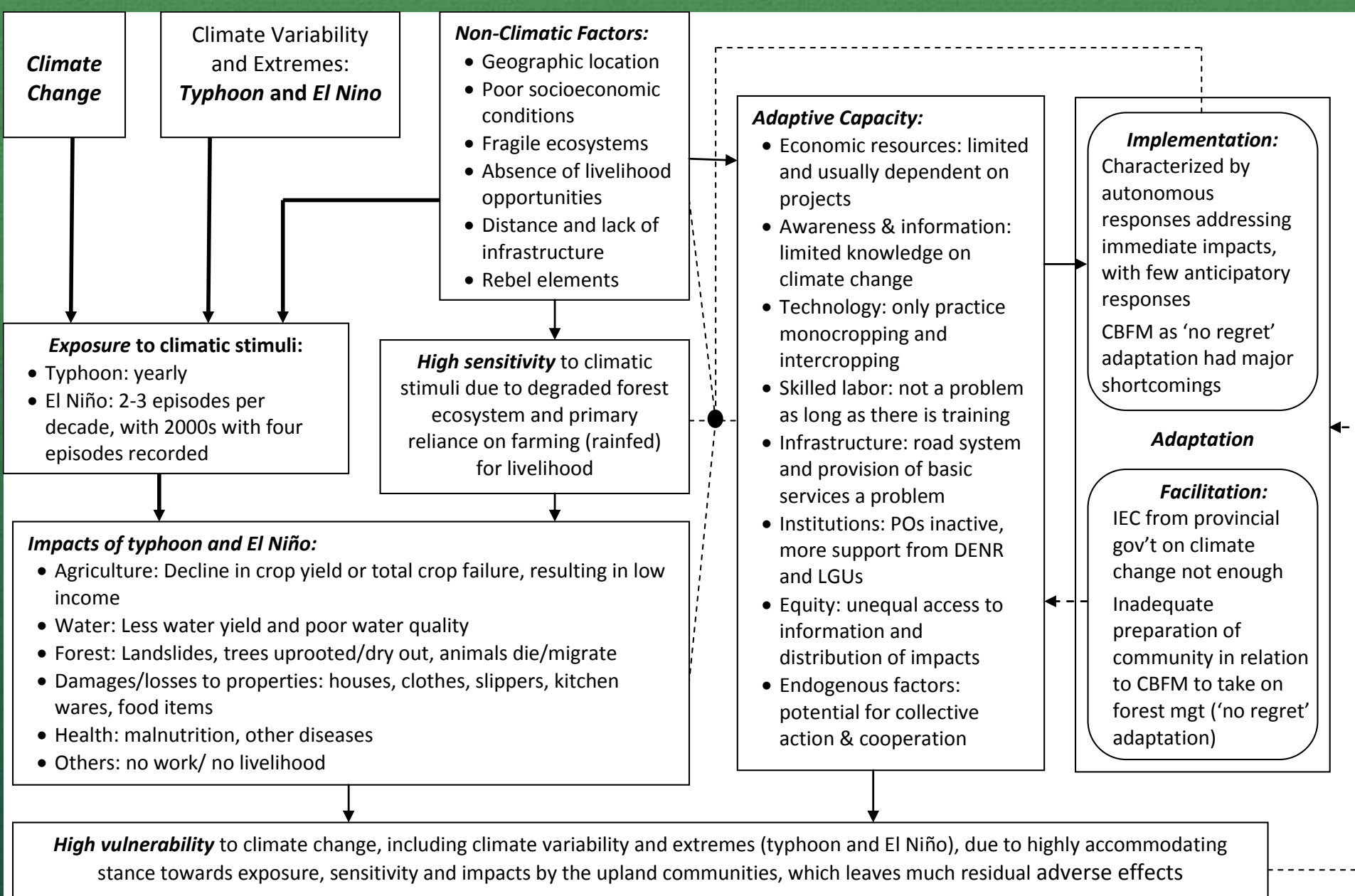
Image Credit:
www.catalogue.sciencephoto.com

Adaptation Strategies

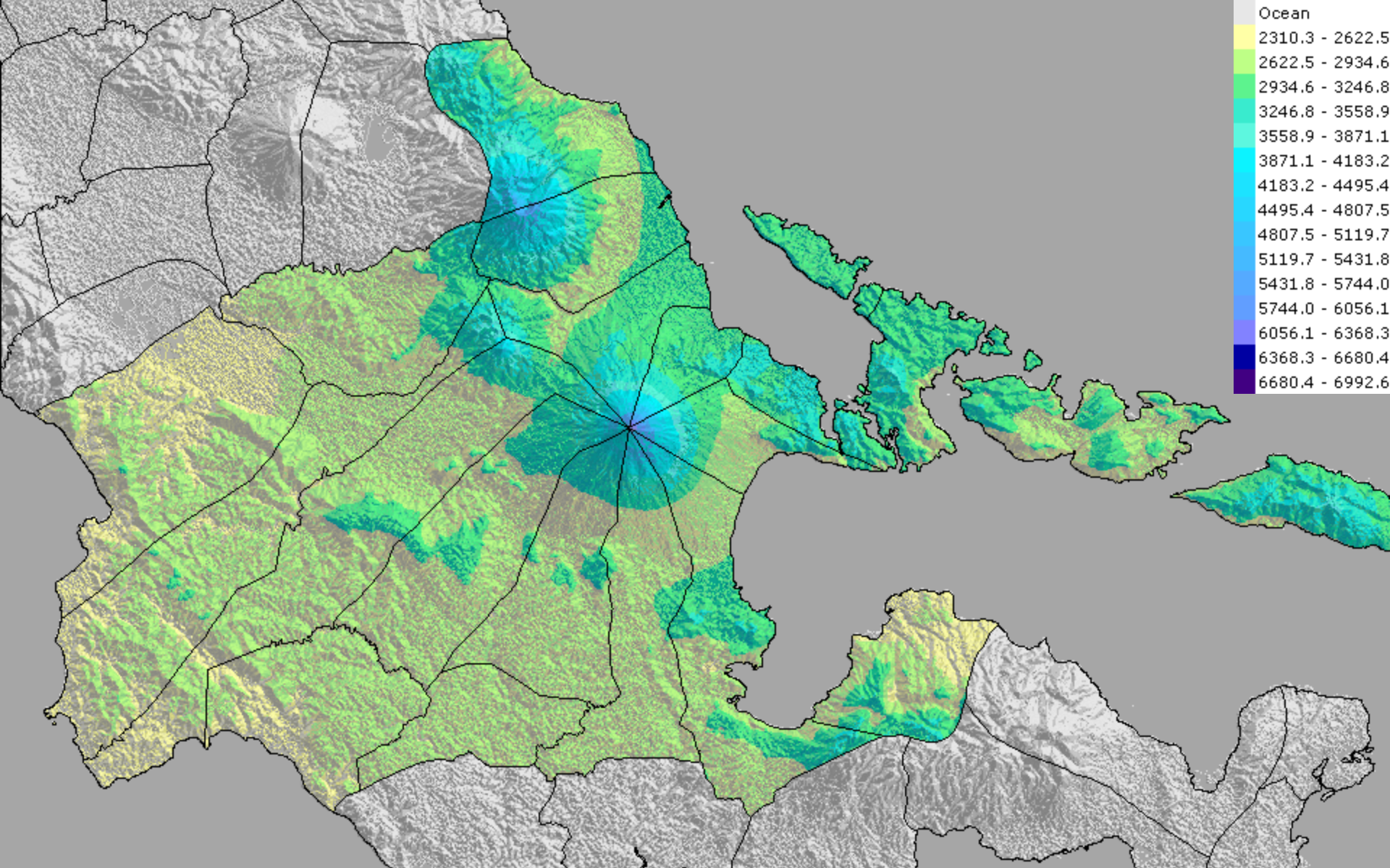
Mostly spontaneous and meant to bear the losses of the impacts, especially for upland communities.

Sea walls in the case of two coastal communities with no mangrove forest.

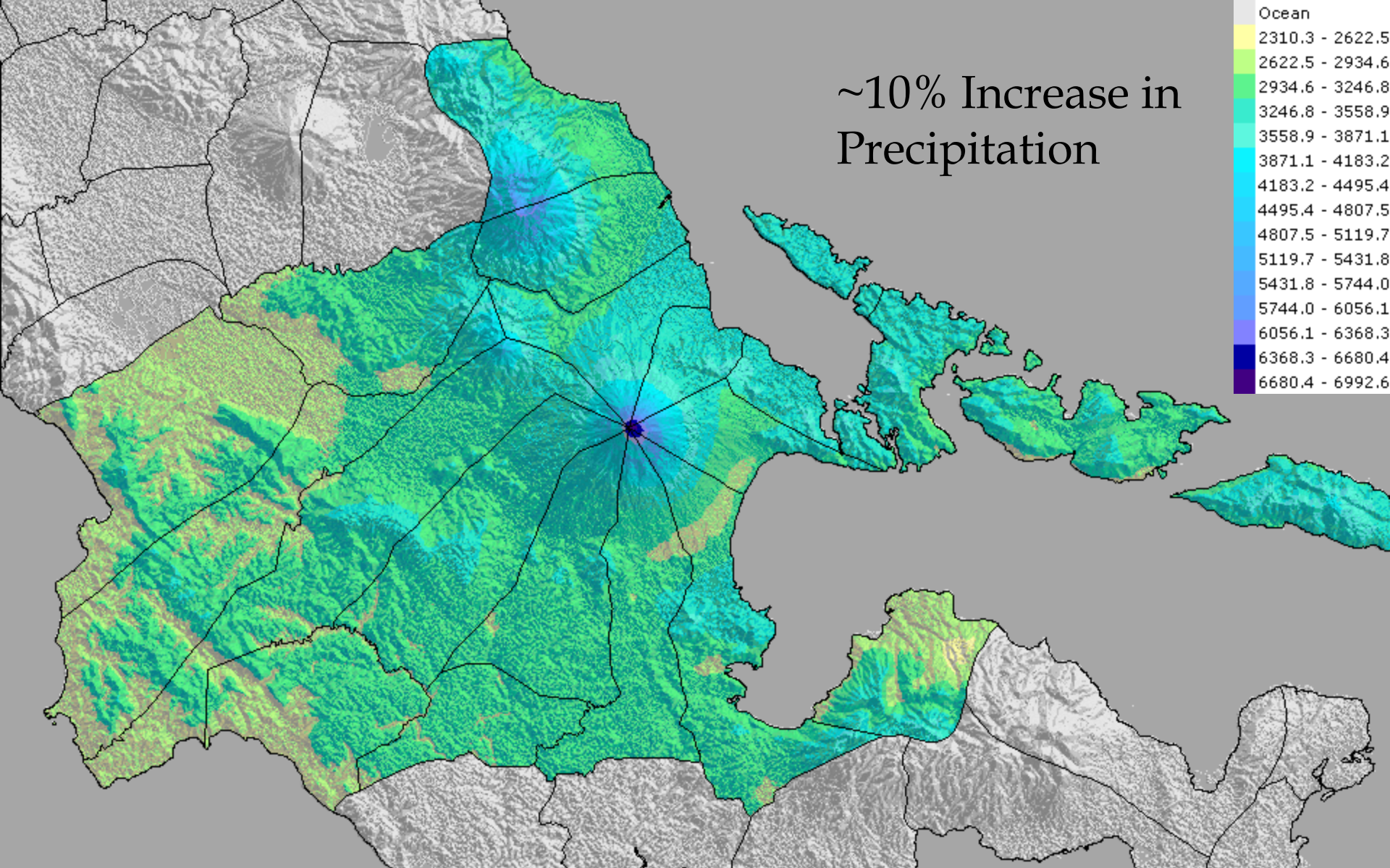




Interrelationships of various factors affecting the vulnerability of upland communities to climate change.

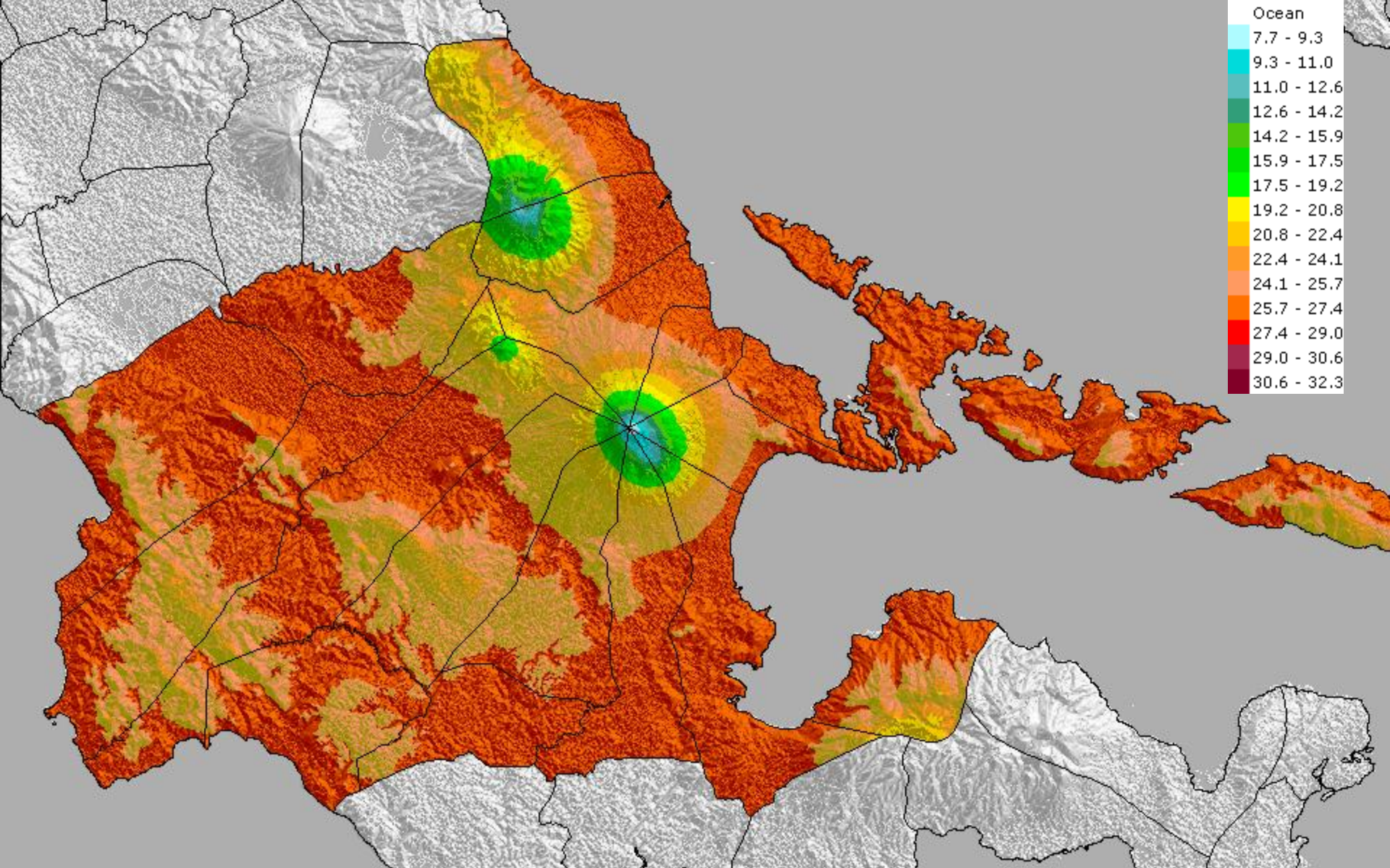


1990 Baseline Precipitation

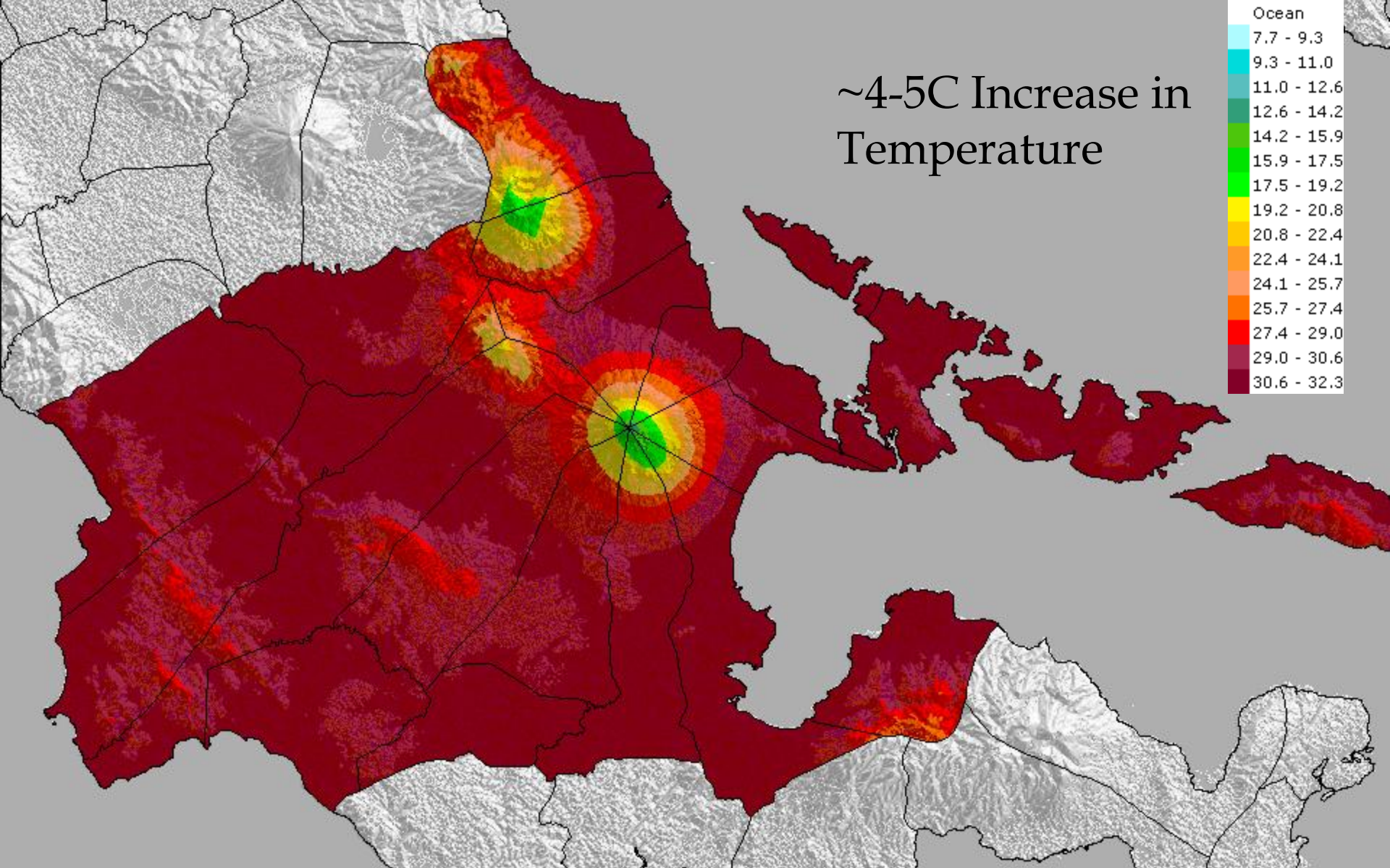


Area: Albay
Model for Precip: (mm)
Selected Month: 1 2 3 4 5 6 7 8 9 10 11 12
Baseline climate

2100 Precipitation, 21-GCM Ensemble, SRES A1FI, High



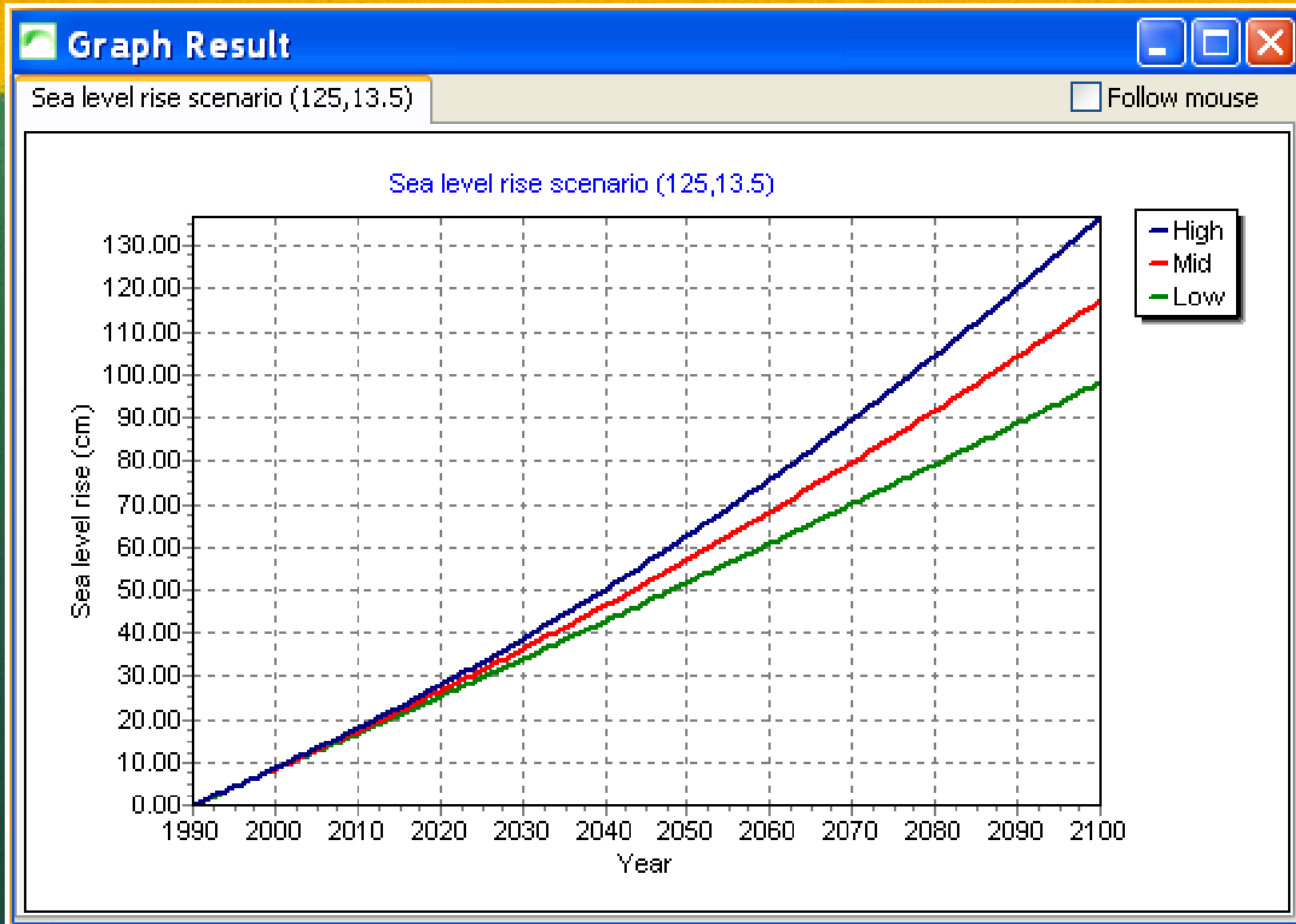
1990 Baseline Mean Temperature



Area: Albay
Model for TMean: (°C)
Selected Month: 1 2 3 4 5 6 7 8 9 10 11 12
Baseline climate

2100 Mean Temperature, 21-GCM Ensemble, SRES A1FI, High

SimCLIM Results: Sea-level Rise



Importance of integrating science and local knowledge towards a more robust assessment...



- **It is difficult for communities to imagine future impacts of climate change and sea-level rise**
- **Their proposed responses are driven by variability and extremes rather than long-term gradual changes**
- **Use of computer models captured the 'forward looking' aspect of climate change**

Science-Policy Linkage

Collaboration with the Provincial Government of Albay through CIRCA

Participation of the local communities and other concerned agencies in the assessment process

Partnership with the Philippine's Climate Change Commission





Thank you very much!!!