

Dynamic Climate Adaptation - A research approach in Taiwan

Prof. Dr. Gin-Rong Liu
Executive secretary, CCAT Project
Vice president, National Central University, **Taiwan**

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Outline

- Background
- Mission and Core
- National initiation
- Regional approach
- DPSIR framework
- Research Strengths
- Conceptualization
 - Collaboration
 - Discussion

Taiwan



A subtropical island country

Total 36,000 square kilometers

Hillside & Mountain: 26,500 square kilometers

Population: 23 million

Average Temperature

Summer \approx 30°C ; winter \approx 17°C

Economic Development

Labor-Intensive →

Technology/Capital-Intensive

Industries

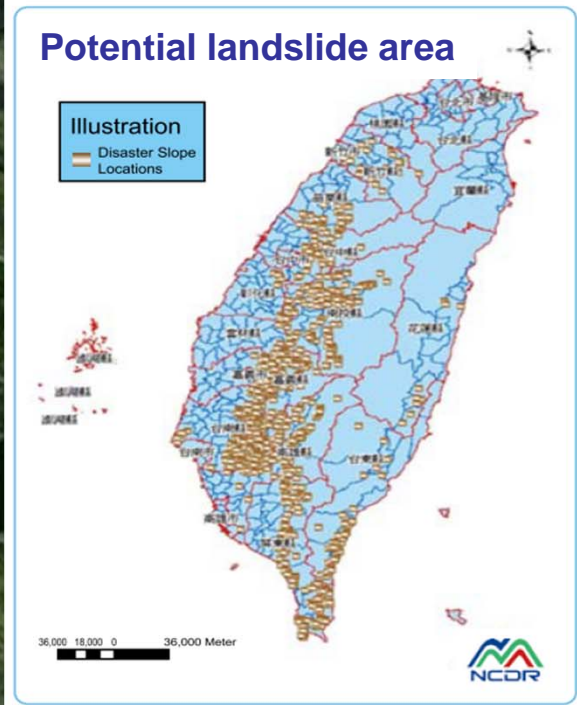
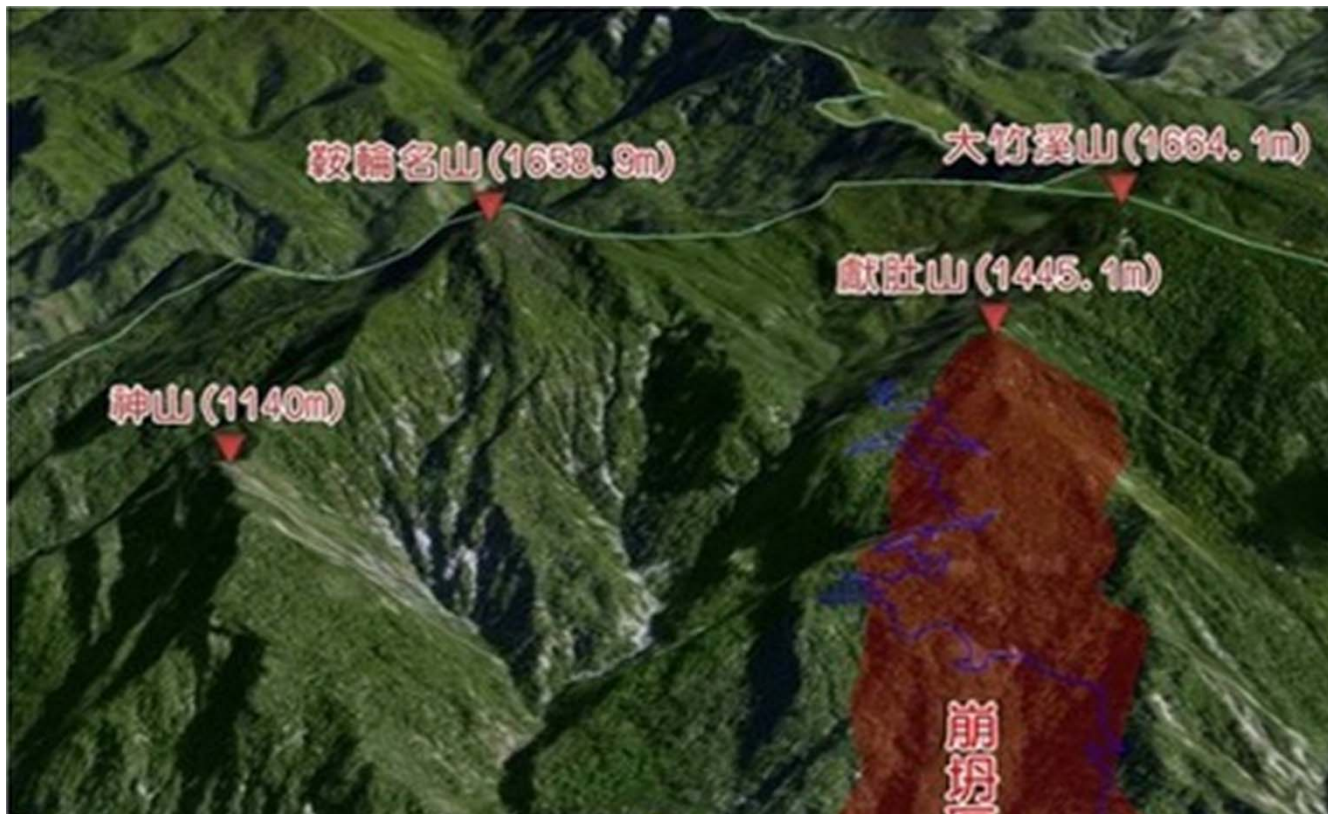
Per capita GDP : USD 2,344 IN 1980

→ USD 16,792 in 2007

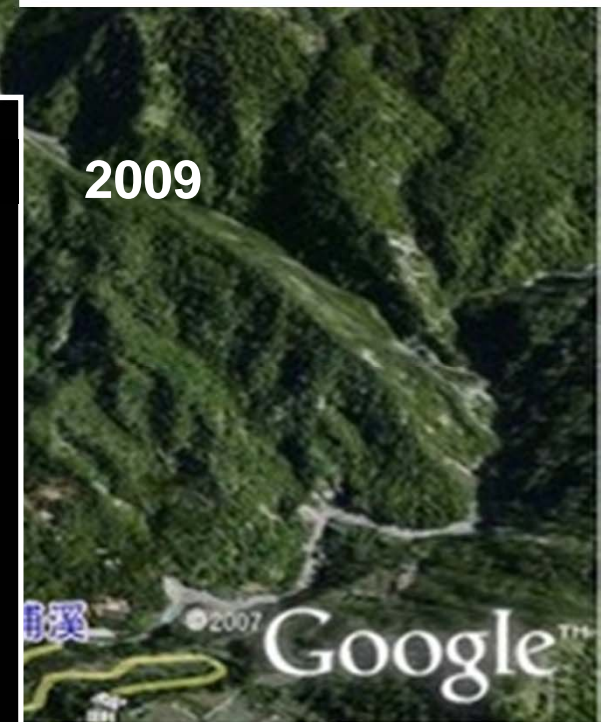
(EPA, 2009b)

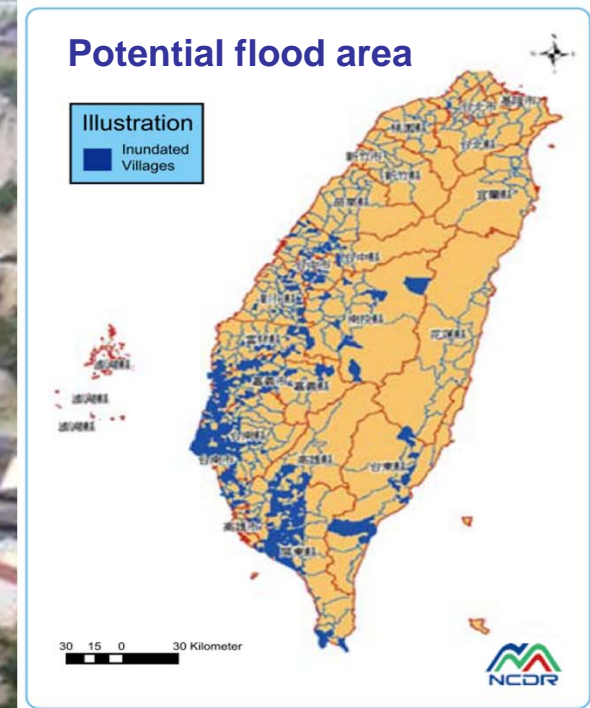
Background

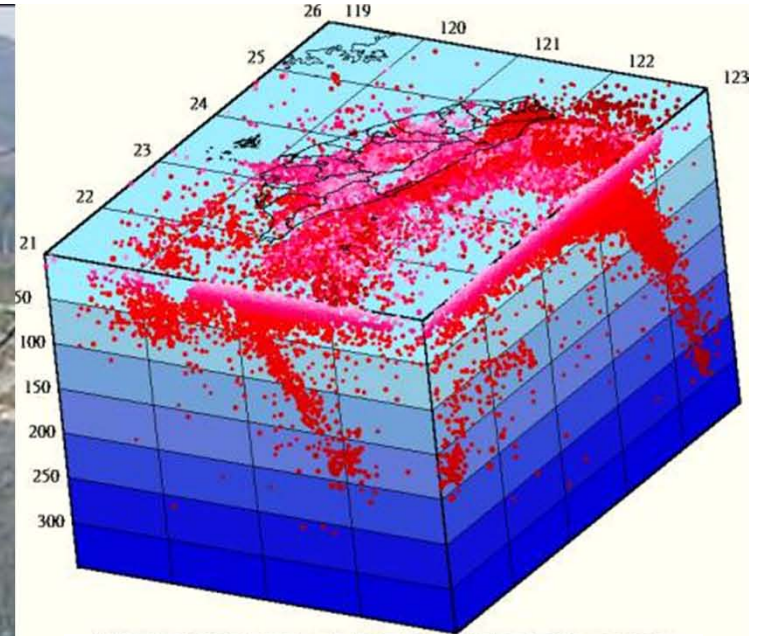
- **Climate-sensitive island:** about 73% of Taiwan's land and population is **exposed** to more than three natural hazards (EPA, 2009a).
- **Adaptation need:** Taiwan is **densely populated** and at high risk for natural hazards to which climate change has a **direct effect**.
- **Dynamic process:** adaptation is a **complex dynamic** process (Wang et al., 2011); the relationship between **climate and society** has always been dynamic (Hulme, 2009).



Shiao Lin village, Taiwan, drastic changes after typhoon Morakot (2009).



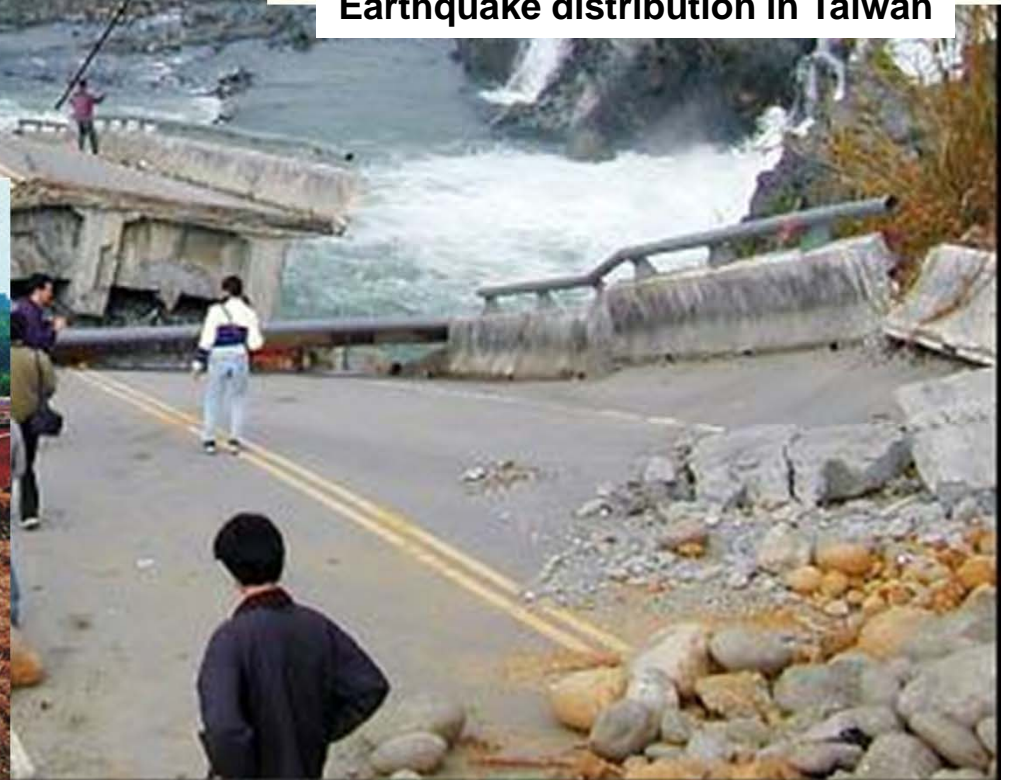




Earthquake distribution in Taiwan



Taichung, 921 Jiji earthquake in 1999.



Mission & Core

- **Mission:**

- To construct a sustainable environment through dynamic climate adaptation for Taiwan area.
- Understand the interaction and mechanism between the human activity and nature environment.
- Establish the assessment strategy for the adaptation technique.
- Mitigate the impact from the climate change.

- **Core:**

- Integration of science, engineering, social science, risk management, and policy research

National initiation

- **CCAT project:** the **National Science Council** (NSC) of Taiwan initiates an integrated research project on promoting climate change adaptation technology (CCAT) in 2011 (Chiang et al., 2010a).
- **Cross-disciplinary setup:** scientific **uncertainty** on climate change requires a cross-disciplinary approach to clarify and identify the **interplay** of society and environment.