North East Thailand Adaptation to the Climate Change Impacts: Direct Experiences and Key Messages from the Most Hardest-hit Communities

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The 1st Meeting of Climate Change Adaptation Demonstration Projects in the Lower Mekong Basin sharing lessons and experience Planning and Development: Challenges and Opportunities

21 July 2011

Rex Hotel, Ho Chi Minh City, Viet Nam
• NE Thailand encountered serious climate extreme impacts
• We selected ‘the Young River Sub-Basin’ to be a case study for more understanding about CC adaptation (2011)
Demonstration site target

Upper Nam Yang River Basin
Ban Kud Ta Kai, Kalasin Province

Lower Nam Yang River Basin
Wang Loung, Roi Eet Province
Tools / Methodology for Community Vulnerability-Risk-Adaptation Assessment from Climate Change Impact

1. Field Participatory Observation
2. Focus Group Discussion
3. In-dept interview
4. Household Questionnaires
5. Tai Baan Research
Participatory Social and Land-used Mapping
Focus group on  How people understanding on Climate Change - Impact
Village Social Map

Village land-use Map
Participatory Identify the existing of Climate Hazards zones
Seasonal Livelihoods Calendar
Vulnerabilities

- Highland rainfed small-scale farmland holders (Upper Nam Yang)
- Lowland as floodplain small-scale farmland holders (Lower Nam Yang)
- Land clearing with minimal vegetation landscape
- Ecological service (Terrestrial – Wetlands functional loss)
- No innovation for alternative water sources
- Poor irrigation introducing (need high cost for investment but low benefit)
- Poor soil quality (need intensive chemical fertilizer use)
- Prone to frequent insect and pest attacks (need more pesticide)
- Dependent on mono-cropping
- Lack of workforces
Impacts

- Seasonal rainfall shift alters cultivation regime (cause of much uncertainty on when to plant and harvesting)
- Long flood duration in the lower area (near by paddy field / wetlands)
- High costs for farm investment (fertilizer, pesticide and tractor ploughing)
- Minimal crop yield
- Increase debts
- Riparian vegetation loss (Crop expansion / inappropriate Irrigation system introduced)
- Biodiversity / Species /Habitat loss (Natural food)
- Increase transformation from rice paddocks to sugarcane and cassava fields (less water use but food security becomes the case)
- Lack of drinking waters and for household uses (need to buy)
- More diarrhea diseases incidence
- Increase migration to big cities and industrial areas (only elder and children remained)
Those farmer who still done the paddy field and agriculture crop like “Business as Usual”

- Intensive agriculture: apply chemical fertilizer, pesticide
- Not yet adopt the appropriate pond–irrigation small scale management in the field (water supply-stocking)
- Not yet apply the integrated farming
- Not yet apply the local variety seed for the flood and drought tolerant
- Farmer crop product still depend on the outside Market only.
Coping Strategy: Some Implications from Rural Family Success Story
Tai Baan Research

- Participatory tools for local villager involve to collect the agriculture farming system information
- Bring the local people more aware in the issue of Climate Change Impact
- Together Identify the keys entry point for the Climate Change coping strategy at the farming level (Flood and drought situation)
- Sharing finding information back to the community
- Adaptive learning process
Coping Strategy: Some Implications from Rural Family Success Story
Tai Baan Research Finding

- Understand the ecosystem pattern in the farmland (water flow, soil capacity: learning by doing)
- Construct farmland pond
- Use local seeds variety (more tolerant to climate extreme and pest attack)
- Some turn to integrated farming practice (share risk)
- Use household and community made organic fertilizer (need more animals)
- Restore and rebuild farmland & community forest remnants
- Stop burning dry rice straw in the paddock (but turn into organic soil conditioner)
- Increase the Biodiversity and food security by
Central-Provincial-Local Government Efforts

- Much focus on ‘mitigation’ activities with less emphasis on ‘adaptation’
- Very few adaptation R&D activities led by Central-Provincial-Academia Institutions
- Central and Provincial Govts. have no explicit mainstreaming adaptation plan down to the community
- Water Resource Development Policy and Program limited financial support largely to medium-mega scale projects
- Some Local Govt. initiates its own adaption activities for communities but receives less attention and financial support by the Central and Provincial Govts.
- Many Provincial and Local Govts. do not have any idea about ‘climate change adaptation strategy and planning practice – BUT some farmers do!!’
- The Central Govt. could do by paying the impacted farmers with ‘disaster crop compensation’ (with minimal money cannot off-set the loss)
Challenges and Opportunities

• Review and explore adaptation strategy integrating into the existing National and Provincial Governments Water Resource Development Plan (Top-Down Sectoral Plan)

• Explore opportunities for integrating adaptation activities into Annual and 3-Year Provincial and Local Government Development Plans

• Up-scaling the community adaptation success actions available for the vulnerable groups

• Capacity building: CC Adaptation strategy and actions
  – The government officers
  – Small-scale farm holders
  – Establish the farmer’s adaptation learning center
Challenges and Opportunities (cont.)

- Low-cost investment options supported by Provincial and Local Govts.
  - Solar, wind power to pump up waters to farmland
  - Local made weir, pond
  - Local crop seed bank/wholesaler & retailer
  - Local made fertilizer and pesticide
  - Mixed use of surface and underground water sources

- Conduct more R&D on adaptation policy-planning-practice (by MRC, SEI, SIDA, Mekong Academia etc)
  - Make generic guidance of adaptation policy and planning strategy for use by all government levels.
  - Support participatory action research on adaptation learning and practices between farmer groups and Govt. personnel
  - Innovate GIS and climate early warning system available for use by the Local Govt.
Objectives

• To develop a data-base and climatic information system in support of local CCA decision-making process

• GPS - GIS - SWAT - CROPWAT - TEREMETRY
Telemetry System

Internet

GPRS

Solar Panel

Charger Circuit

Microcontroller

Data Logger

Temp Sensor

PH

Water Level Sensor

Rainfall Sensor

DC Supply

+ 5V

+ 12V

เครื่องส่งข้อมูลระยะไกล (โทรมาตร)
Special Thanks:

- Mekong River Commission
- Thailand National Mekong Committee
- Department of Water Resources
- Khon Kaen University
- Rajamongkala University of Technology Khon Kaen Campus
- Water Resource Regional Office 4
- 5-T MRC River Basin Committee
- The Chi River Basin Committee
- Sai Na Wang Sub-District Administrative Organization Kalasin Province
- Wang Luang Sub-District Municipality Roi-Et Province
Thank you for YOUR attention