Climate Change Adaptation for Food Security in Thailand

Natapol Thongplew

Faculty of Science

Ubon Ratchathani University

natapol.t@ubu.ac.th

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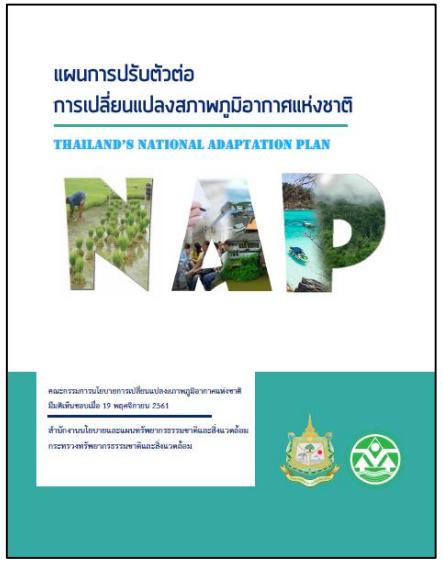
1. Thailand and climate change adaptation and Agriculture

- Thailand is projected to be severely affected by climate change - the GermanWatch Global Climate Risk Index 2021 ranked Thailand's long-term climate risk index as 9th in the world.
- Climate change threatens all key sectors of Thailand's economy: agriculture, tourism, and trade.
- Agriculture is important sector to the country. The agriculture sector contributes about 8% of GDP; however, employs around 30% of the workforce.
  - Thailand's world kitchen policy
- Agriculture is also the second largest source of GHG emissions in Thailand - rice cultivation is the main source of national methane emissions.
- At a national level, Thailand has policies to address climate change
  - The focus gears towards mitigation, while adaptation is recognized in a non-strategic manner.

2. Adaptation policy for agriculture and food security in Thailand



Overall, the Thai climate change policies pay more attention to mitigation.

Based on the results retrieved from reviewing and analyzing the National Adaptation Plan (NAP) in connection with Long-Term Strategies (LTS) (comparing with the policy of 9 other countries), it shows that:

- Agricultural and food security policies are interconnected with other sectoral policies, such as agriculture (mitigation), water management, natural resource management, and human settlement and security.
- Agricultural policies are somewhat basic with no clear targets covering many topics, including:

Early warning system for agriculture	Insurance for climate risks
Risk maps for agriculture at the local level	Transforming agricultural practices
Plant/animal breeding	Livestock production systems
Fisheries management	Networks on climate change agricultural adaptation

- Food security policies are basic with unclear steps and targets as well. Topics mentioned in the plan include:

low cost precision farming	Improving irrigation systems to prevent flooding and drought
Developing water sources for non-irrigation areas	Soil conservation and restoration
Agro–economics zone	National food reserve system and efficient food distribution mechanism
R&D for food waste technologies of agricultural products	Networks on climate change agricultural adaptation

3. What's missing from the Thai national policy?

- Less comprehensive policies on climate change adaptation to address food security
  - Plans only address basic adaptation issues.
  - Adaptation policies are less tangible… Targets? How-to?
  - Policies implementation and actions in local areas are not specific… Localizing policy implementation?
- Few topics are left out:
  - 1) Cooperation with industries for developing agricultural technologies
  - 2) Promoting low carbon consumption
- Main concern: Changing farming practices of farmers and consumption practices of consumers are extremely difficult.
  - Farmers and consumers are sleeping giants (Hard to change but have high potentials).
  - Science communication and financial mechanisms are highly needed?

3. Case study on climate change adaptation and food security of Ubon Ratchathani

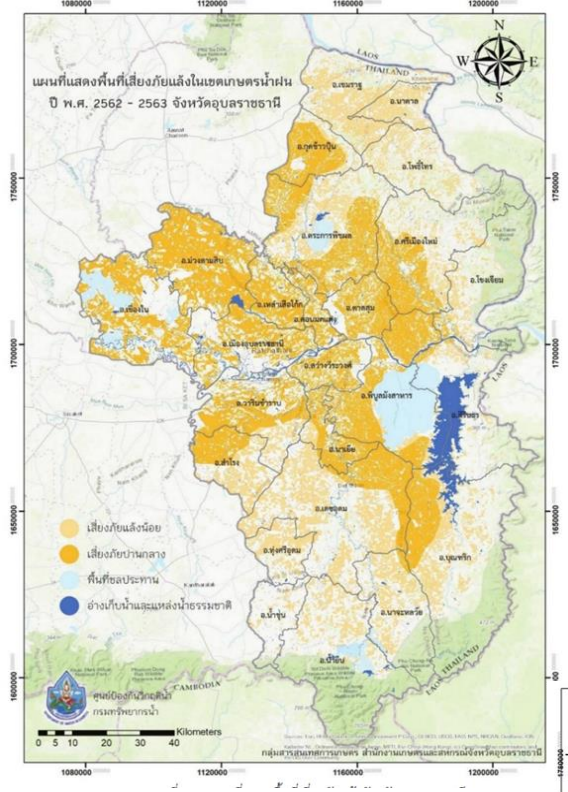
- Located is roughly 630 kilometers from Bangkok, Ubon Ratchathani is the country's third-largest province by area (16,720 km^2) and the home of almost 2 millions people (642,000 households).
- It shares an extensive border with Lao and Cambodia.
- The province is a food producing province. Around 60% of the land is used by 305,000 households for agricultural purposes.
- Agricultural activities include crop production (74%), livestock production (13%), and fishery production (2%).
- Rice, rubber, cassava, and palm oil are main crops.

Based on the synthesized results from more than 50 interviews with stakeholders in the food system of Ubon Ratchathani (e.g., governmental agencies, NGOs, farmers, distributors, retailers, restaurants, and consumers), it reveals that:

General aspect:

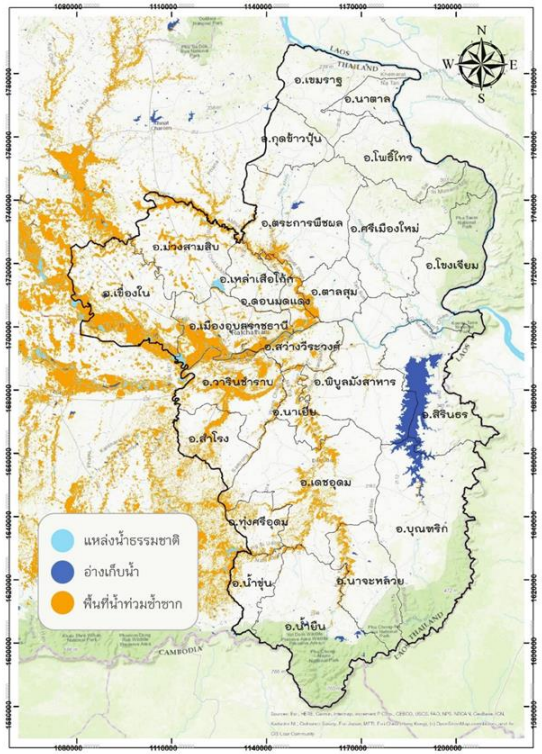
- All stakeholders have witnessed and experienced the climate change impacts (Increasing temperatures, increasing severity and frequency of storms, flooding, and drought).
    - Overall, farmers are the most affected ones.
- Looking at the food security at the provincial level, climate change affected the level of food security to a certain degree. However, it does not cause serious concerns to the stakeholders.
    - Utilization – chemical residues
    - Stability – natural disasters

- All stakeholders applied certain adaption strategies on their own to cope with climate change impacts. However, reasons to take actions may not be purely connected to climate change, but because of economic reasons.
- Different stakeholders have different levels of adaptive capacity.
  - Entrepreneurs are more capable to adapt due to their resources and business know-how.
  - Farmers are less capable due to the lack of resources and know-how.
  - Organic farmers are more aware of adaptation and are trying to figure out ways to adapt.
  - Self-organizing groups of organic farmers could do to better adapt as they actively seek for help and opportunities and help one another through consultation, information sharing, and creating negotiation power.
- Many consumers are still not aware and lacking of climate change knowledge, resulting in less knowledgeable and less motivation to act.



Drought risk

Flooding risk



- Few governmental policies still have some loopholes obstructing the adaptation (e.g., financial assistance to farmers affecting by disaster).
- Capacity building needs are essential to increase the response to climate change.
  - Farmers need capacity building - resource provision, easy-to-understand occupation-based weather information, market organization, know-how, and incentives to change their farming practices (by governmental agencies with the help of entrepreneurs in the food system).
  - Consumers need knowledge and know-how regarding climate change impacts and sustainable actions (how to do in daily life).
    - Financial incentives (or punishments) can be provided to stimulate climate-friendly actions.

Policy aspect:

- Stakeholders agreed that current policies and measures are inefficient and insufficient to address climate change adaptation and food security.
- No direct policies on food security, but some agricultural policies touch upon climate change and food security
- Many previous policies and projects to address climate change adaptation (through agricultural improvement policies) have failed to address adaptation:
  - Policies are formulated and implemented with strict guidelines from the central government.
  - Policies and projects are formulated and implemented in a fragmented manner – focusing on just one section of the food system and most projects are set to implement for 1 year.
- Many stakeholders realized that there is a need to arrange and organize policies, measures, and projects around the local contexts of Ubon Ratchathani.

5. What's missing from the Thai agricultural policy and implementation at a provincial level?

- Integration of top-down and bottom-up policy formulation and implementation.
- More integrated policies to consider the entire food system (considering from farm to table).
- Context-based policies and measures to address adaption in agricultural sector and food security.
  - Deep engagement of local administration organizations
- Translation scientific data to usable information for communicating to different stakeholders, especially farmers and consumers are needed.
- Effective projects and initiatives to engage farmers in climate-friendly farming practices (new financial mechanisms?).

6. Conclusion: Transforming climate change adaptation for food security in Thailand

- Adaptation of agriculture is in a great need to maintain the livelihood of farmers and to enhance food security.
- Clearer and more robust agricultural policies need to be formulated with climate change adaption in mind.
  - Setting clear targets
  - Identifying how-to for achieving the targets
- Agricultural policies needs to be formulated and implemented in system and chain perspectives by the agreement and cooperation of different agencies and stakeholders.
  - Food system perspective
  - Cooperation with different stakeholders, including industries and local governments and administrations
- Focusing on co-benefit approaches (e.g., Nature-based Solutions; NbS) to integrate climate change adaptation with mitigation policies.
- Informing and engaging farmers and consumers in adaptation are vital.
  - User-centric communication
  - Financial mechanisms and technical assistance should be prioritized
- Policy reforms to allow the national policy to facilitate the implementation at (different) local contexts.
  - Integration of top-down approach with bottom-up inputs
  - Giving more authority and resources to the provincial and local administrations
  - Long-term projects and initiative rather than annual projects

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