SUSTAINING AND ENHANCING THE MOMENTUM FOR INNOVATION AND LEARNING AROUND THE SYSTEM OF RICE INTENSIFICATION (SRI) IN THE LOWER MEKONG BASIN

Policy Note - Thailand

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Sustaining and Enhancing the Momentum for Innovation and Learning around the System of Rice Intensification (SRI) in the Lower Mekong Basin (SRI-LMB)

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For Further details:
http://sri-lmb.ait.ac.th/
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https://www.ait.ac.th/

Project Partners:
Food and Agriculture Organization of the United Nations
SRI-RICE
The University of Queensland Australia
OXFAM
FACTS AND FIGURES

- Thailand has a total geographical area of 513,115 km$^2$ of which 277,082 km$^2$, i.e., 27.7 million hectares (mha) is used for agriculture.

- Only about 24% of all the agricultural area is irrigated.

- Thailand’s economy grew at an average annual rate of 7.5% from 1960 to 1996, and 5% during 1999 to 2005. After slowing down to 3.4% during 2005-2015 and further reducing to 2.4% during 2014-2016, it picked up to 3.9% in 2017.

- In 2015, the services, trade and industry, and agriculture sectors contributed 52%, 38% and 10% to the country’s GDP, respectively. The contribution of agriculture to GDP has decreased from 10% to 8.5% in 2017.

- Over half of the country’s 68 million population and 30% of the labor force is involved with agriculture.

- There are 4.7 million farming households, with an average landholding of 3.6 ha per household; 90% of these are considered smallholders, owning less than 4.8 ha.

- Rice is an important food and export crop. Nearly 80% of rice is grown under rainfed conditions. With an average paddy yield of 2.8 tons/ha, 19.5 million metric tons (MMT) milled rice were produced in 2017-18.

- Annual per capita consumption of rice is 80 and 155 kg in the urban and rural areas, respectively. Thailand is self-sufficient in its rice requirement. With an export of 10 MMT in 2017-18, it is one of the top rice-trading countries.
FOOD AND NUTRITION SECURITY

- Food security and food safety are high among government concerns.
- Compared to a poverty rate of 67% in 1986, the poverty rate in 2014 was 11%.
- Thailand is classified 37th in the Global Hunger Index (GHI) with the extent of hunger prevalence being considered as ‘moderate’.
- In 2012-13, 7% of the general population and 7% of children younger than 5 years were undernourished.

CONSTRAINTS TO SMALLHOLDER AND AGRICULTURE GROWTH AND DEVELOPMENT

The agricultural development plan for restructuring the farming sector, with due emphasis on the late King Rama IX’s philosophy of self-sufficiency, is aimed at enhancing sector competitiveness to improve the farmers’ quality of life, strengthen the nation’s food security, and catalyze export earnings. Some of the key challenges to this plan include:

- **Sector-wide problems:** An ageing farmer population, high levels of indebtedness of farm households, climate change, market fluctuations, and low farmer incomes are considered as important problems of Thai agriculture.

- **Low rice-grower incomes linked to reduced yields and high production costs:** Farming households earn less than self-employed non-farmer workers and blue collar workers. Inadequate incomes of rice farmers are closely linked to their low average rice yields. Cultivation of high-quality and high-value varieties with low yield potential, insufficient irrigation access, small and scattered landholdings that limit farmers from gaining economies of scale, insufficient research and development, a degrading natural resource base, and the slow process of transfer and uptake of new knowledge and technology by farmers, are some of the reasons ascribed for low yields.
Rising costs of cultivation, mainly owing to higher fertilizer and hired-labor expenditure, also drive down farm incomes. The linked problems of low income and yields with and natural resource degradation are more pronounced in the northern and north-eastern parts of Thailand, where the populations are comparatively more poor and vulnerable.

- **Low and reducing access to land**: A survey revealed that only 12% of all landholdings in the country have clear titles; 49% are covered by land use rights documents, 18% had no official documents, and the remaining 21% in forest reserve areas were considered illegal. While there is evidence of land-grabbing in the country; even the government process adopted for formalizing land use has resulted in exclusion, often of the smallholders with very little land, especially affecting ethnic minorities and women farmers. There are reportedly 800,000 landless individuals awaiting their allotment of lands. The process of land titling which prioritizes recording the names of men is disadvantageous for the women farmers.

**KEY ISSUES - AGRICULTURE DEVELOPMENT PLAN**

- **Development of production systems**: Improvements in productivity, produce quality, value addition, and value-chain management to ensure fair returns to farmers are a key priorities.

- **Sustainable growth**: Recovering degraded natural resources, their conservation and sustainable management for countering the negative impacts of climate change and strengthening agricultural sector are emphasized.

- **Infrastructure development**: Irrigation, storage, transport network, etc. and land reforms aimed at poor farmers are highlighted as important for supporting agriculture, farming communities, and agricultural trade.
• **Promoting farmers:** Promotion of farmer organizations and supporting the farming communities through various programmes such as providing them with crop insurance and other risk management tools, social welfare and capacity-building, and assistance by increasing access to production inputs, are considered important measures.

### IMPACTS OF CLIMATE CHANGE

• Unexpected droughts and floods, deterioration in the natural resource base, loss of biodiversity, and lower and unstable crop yields are linked to climate change.

• It has been estimated that the farmers can take from 1 to 4 years to recover from climate change-induced shocks in a single season.

• Strategies to counter the adverse impacts for implementation during the 2017-2021 period have been developed under the Climate Change Master Plan. It is important that Thai farmers follow ‘climate-smart’ practices such as the System of Rice Intensification (SRI).

### INNOVATIONS AND INITIATIVES

• **Smart Farmers:** The government is keen to develop and support Smart Farmers, farmers who are innovative, knowledgeable about agriculture and allied enterprises, and familiar with modern communication technology and platforms, to encourage their participation as catalytic agents within farming communities, to trigger sustainable agriculture development.

• **Sustainable Rice Platform (SRP):** The government is part of the Sustainable Rice Platform (SRP) activities, as part of a global coalition of public and private enterprises led by the United Nations Environment Programme (UNEP) to aid sustainable development of the rice sector.
System of Rice Intensification (SRI): The System of Rice Intensification (SRI) has been introduced and promoted in Thailand by various research agencies, civil society organizations and government departments. Acknowledging that SRI can aid sustainable rice production in Thailand, the Ministry of Agriculture and Cooperatives (MoAC) has been supportive of these activities. That SRI raises the yields of traditional local varieties so that they can be competitive economically with improved varieties. This helps to conserve rice biodiversity.

In addition, many academic and research institutions and UN organizations such as AIT, FAO, UNEP, etc. have been working with the government on various issues concerning sustainable agriculture development and natural resource management, poverty and inequality reduction, improving food safety and quality, climate-change adaptation and mitigation, promoting south-south and regional cooperation in the agriculture sector, empowering farmer organizations, promoting public-private partnerships, and harmonizing policies related to food security and bioenergy.

SRI-LMB Project: In 2013, as part of an EU-funded project, the ACISAI Center of the Asian Institute of Technology (AIT) initiated a research project centered around SRI practices for promoting sustainable rice production and improving farmer livelihoods. The Office of Non-Formal and Informal Education and Rice Seed Center, Surin; the Vocational Training and Development Center for Thai People along the Border Areas (VTDC), Uttaradit; the Ministry of Agriculture and Cooperatives (MoAC, Thailand), the Food and Agriculture Organization of the United Nations (FAO), and Oxfam America were key project partners.

Study Areas: The project was implemented in food-insecure areas of Surin, Uttaradit and Sisaket provinces.
• **FPARs**: The project encouraged Farmer Participatory Action Research (FPAR) activities for promoting location specific adaptation of SRI practices.

• **Positive Impacts**: 192 FPAR experiments involving 5,065 farmers, with a majority of them being women, were conducted between 2014-2016. Positive impacts that accrued to project participants are listed below:

  • 19% higher crop productivity
  • > 3 times higher profitability
  • 80% higher labor productivity in rice production
  • 19% higher water productivity (kg of rice per m³ of water),
  • 26% less GHG emission from rice fields where farmers applied less fertilizers
  • 79% less seed were used by FPAR farmers
  • 52% less energy was used by FPAR farmers
  • Less leaching loss of fertilizer
  • More abundance and activity of soil biota
  • Crops were more resilient to drought and flood
  • Less disease and pests were observed in SRI fields.

**KEY POLICY OPTIONS AND RECOMMENDATIONS**

• **Promote efforts for scaling up SRI**: Experience of Thai farmers with SRI shows that they appreciate the improved productivity and produce quality. These gains are obtained with reduced costs of production while increasing the efficiency (productivity) of the inputs used. There is a need to scale up these efforts to reach out to a greater number of farmers.
• **Support participatory policy and program development in agriculture:** Agriculture should continue to be a national priority. More recognition is needed for the smallholders, especially women farmers, for the vital role that they play in the country’s economy. They should be actively involved in farming-related policy and program development and implementation.

• **Strengthen systems to ensure better market access, prices and returns for smallholders:** Identifying critical leverage points in the agri-produce supply chains which can be advantageous for smallholders and training them to access such systems is essential. Niche areas such as organic rice production should be considered for market development by working with other stakeholders in the value chain, and linked to interested farmers. Educating farmers and installing regulations are both needed for alleviating the debt burdens of farmers. Assisting them in diversifying their agriculture can aid in risk reduction and can enhance the potential of farming to be more profitable.

• **Prioritize providing land security to landless, forest land cultivators, ethnic minority, and women farmers:** These population groups are the most marginalized community members. Gender-sensitive policies based on rigorous research findings are needed to ensure that they are provided with land security. Modifying the process of land title registration to also include the names of the women in the household would be a positive step.
References:


Project reports and presentations concerning Thailand. Available at: http://www.sri-lmb.ait.asia/country/Thailand.php


SRI-Rice website: http://sri.cals.cornell.edu


For more on SRI-LMB in Thailand visit: http://sri-lmb.ait.ac.th/country/Thailand.php