# ABSTRACTS

## SESSION 3: FOOD SYSTEM PROFILE AND POLICY

**3.1 Specialization, scale, and spillovers in southeast asia's transforming food systems**

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Literature on agricultural development often invokes an implicit bimodal model that contrasts smallholder farming with industrial agriculture. Smallholder farms are often assumed to be uniformly 'traditional', and poorly integrated into markets, while large farms are often assumed to be 'modern' and technologically sophisticated. This bimodal model is poorly representative of contemporary realities in Southeast Asia. Drawing on examples from Myanmar, we contend that a large portion of agricultural output originates from a continuum of intermediate farms that are neither 'traditional smallholder', nor 'modern industrial'. These can be characterised as falling into two broad and partially overlapping groups: (1) Smallholder farms producing grains and other staples that are already deeply integrated into multiple factor markets. Such farms are fragmenting over time but have proven persistent and are increasingly maintained through non-farm livelihood diversification. (2) Small- and medium-scale farms specializing in increasingly sophisticated cultivation for sale of higher value crops, including fish, poultry, and fruits. Specialized small- and medium-scale farms have emerged as part of diversification and investment strategies pursued by smallholders, wealthier rural households, and middle-class non-farm households, in response to opportunities presented by growing demand from domestic and some export markets. Specialised farms tend to be highly spatially clustered, creating concentrated localised demand for labour, goods, and services, leading to the proliferation of SMEs upstream and downstream of the farm. They may also make significant contributions to food and nutrition security by increasing the availability and accessibility of diverse foods in domestic markets.

### 3.2 Differences in impact on sustainability-based supply chain certification on nucleus and plasma tea plantations (Case Study in Tea Plantations in Central Java - Indonesia)

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Tea (Camellia sinensis) is one of the important commodities that shows a fairly positive development trend at the end consumer level for both domestic and global markets. Tea in Indonesia has been developed since 1826 and has become part of the national economy for both nucleus plantations (owned by the government and private) and plasma plantations (owned by the people). Tea products in Indonesia have become part of the global supply chain so that global certification treatment is also implemented from the plantation level, industry to the finished product. The Covid-19 situation forced the tea business to slightly change their orientation due to a decline in tea demand or other reasons that reduced the volume of production produced.

This study aims to compare the impact of environmental certification on tea plantations (nucleus and plasma) so that a policy suggestion can be obtained as the final result. Several aspects that want to be known in this research are: (1) identifying aspects of supply chain sustainability in the plantation industry; (2) understanding the parties involved and benefiting in the supply chain sustainability scheme; (3) provide proposals for improvement of supply chain sustainability schemes that are fair to actors. This research was conducted in 3 districts of central tea plantations in Central Java Province, namely: Banjarnegara, Pekalongan and Batang. The number of respondents involved were: 75 tea farmers, 14 tea company employees, 2 global certifiers, 2 district-level policy makers, and 3 tea traders. Too many small tea farmers, and even plantation owners, accept very low prices for their crops despite the huge global demand for them. The tea trade has narrow margins, so many farmers and producer groups cannot afford to invest in sustainability. On the other hand, high tea production has attracted multinational companies to enter the Indonesian tea business. With large capital, multinational companies hold more power to influence the entire supply chain in the tea sector. This global supply chain of tea commodities plays an important role in the development of the tea industry and trade. For this reason, it is necessary to examine whether the role of global environmental certification is important in maintaining the stability of the tea business, both in terms of its impact on core and plasma tea plantations. In addition, it will also be tested whether understanding the benefits of certification for each supply chain actor is important as a basis for willingness to apply this certification standard.

**3.3 Food Systems Profile - Along a rural-urban transect in North Vietnam**

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Using data collected from a cross-sectional study in Moc Chau, Dong Anh and Cau Giay districts in Vietnam, this report aims to elucidate specific components of local Vietnamese food systems along a rural to urban transect focusing specifically on (i) diets, (ii) nutrition status (anthropometry), (iii) consumer behavior, (iv) food environment, and (v) food flows. The results are summarized as below:

Diets: Diet Diversity Score of urban and peri-urban women, men and children under five were significantly higher than rural women, men and children under five. The percentage of urban and peri-urban women and men reaching Minimum Dietary Diversity was significantly higher than that of rural women and men, while the percentage of children in urban areas reaching Minimum Dietary Diversity was significantly higher than that of peri-urban and rural children. For children under five, overall, the average food intake for all food groups was significantly higher in the peri-urban and urban sites, except for vegetables. The average intake of vegetables and starchy staples was significantly higher in the rural site, while consumption of dairy, as well as meat, poultry and fish, was significantly lower in the rural site than in the peri-urban and urban sites. For both men and women, the starchy staples group represented the largest portion in diet in all three study sites, following a decreasing gradient from rural to urban, via peri-urban site.

Food flows: Study participants in 3 sites acquired food items from various sources: own production, purchase, gift, and other sources. In general, rural people grew more of their own food, especially starchy staples, while the purchase category was the most popular food source in the urban district. Interestingly, households in the peri-urban site purchased more than 60% of their food. They self-produced some typical Vietnamese food groups, such as starchy staples.

Environmental footprint: The average dietary greenhouse gas emission per day in the rural site was lower than the values in the peri-urban and urban sites. Beef, pork, and starchy staples were the largest contributors to the carbon footprint of the adult diet, especially in the peri-urban and urban sites. For children under 5, the most two contributors of greenhouse gas emission were dairy and starchy staples.

Nutritional Status: For children under five years of age, the urban-rural gradient was a significant predictor of stunting. Similarly, our result shows a significantly higher proportion of underweight among rural children compared to those in urban or peri-urban areas. Wasting was 3.5 times more prevalent in children in the rural site than that in urban areas. In contrast, the proportions of overweight and obesity in children in urban and peri-urban areas were higher than that in the rural area. The proportion of underweight in adults was about two times higher in rural or peri-urban areas than in urban areas. In contrast, the prevalence of adult overweight was higher in the urban site than in peri-urban or rural sites.

Consumer behavior: The five food groups that were most commonly consumed by the households in the past 7 days across the three sites were starchy staples; meat, poultry and fish; condiments and seasonings; vitamin A – rich dark green leafy vegetables; and other vegetables. Households in rural areas consistently had a lower consumption across different food groups than those in urban and peri-urban areas. Roughly 20% fewer rural households consumed pulses and dairy products than households in urban and peri-urban areas. To a lesser degree (10 to 15% of difference), this was also the case for the consumption of eggs, oils and fats. Food safety and healthiness were the most important factors for consumers' food choice, and they were equally important for all households

regardless of locations. Consumers in urban areas often went to a wider variety of retail outlets to make their food purchases, while rural consumers relied more on traditional markets, hence not much outlet diversity. Yet, our results showed that across all the areas, traditional food outlets like street markets were the most common points of food purchase. Nutrition knowledge was limited in all areas, yet participants in rural areas had a significantly lower score than the urban and peri-urban areas. Urban consumers usually preferred branded/packaged products, and shopped more in modern outlets, used food labels more than their peri-urban and rural counterparts. Paradoxically, out of those food label users, only a small percentage of them understood the information on the labels. Consumers in rural areas were more concerned about food safety than those in urban and peri-urban areas. Regardless of region, most consumers were concerned about food safety sold at traditional markets (formal and informal), while these markets remained the typical food outlets for all consumers. The number of urban and peri-urban household members eating away from home was roughly five times higher than rural household members. There was no significant difference between urban and peri-urban households. Our picture of food environment more closely resembled a typical emerging economy with specific features such as non-market food sources (e.g., own production and food transfers) in peri-urban and rural areas, and the dominance of the informal retail sector across all three areas. The urban site enjoyed the highest availability and variety of food destinations.

In sum, these results are important for building food systems that can be integrated into policies and programs to improve nutritional outcomes through improved diets, food environment and consumer behaviors.

### 3.4 Vietnam's Food System: The Characteristics, Challenges and Opportunities
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Vietnam is now an increasingly important producer of food and food security for domestic and global markets. Agricultural intensification and innovation have increased yields, production areas and output of key domestic and export food crops over the last twenty years. There have also been remarkable reductions in poverty rates, and the prevalence of malnutrition, micronutrient deficiencies and stunting nationally since 1990. But there were numerous risks, shocks and stresses that increasingly impact the food system, and represent a direct threat to future food security, economic growth, resource condition and livelihoods, particularly of vulnerable groups. Whilst the food system has demonstrated extraordinary resilience during the COVID-19 pandemic the interconnected impacts of climate change (e.g. saltwater intrusion and increasing temperatures) and more frequent extreme and severe weather events and natural disasters including flooding, droughts, typhoons and landslides were identified as critical issues, particularly in high risk areas. However other important risks were identified such as transboundary diseases and pandemics, resource degradation (land, inland waterways, and marine environments), market volatility and political unrest. About food nutrition security, three main themes emerged in relation to access to safe and nutrition foods, and sustainable diets and consumption patterns.

The structure of food value chains in Vietnam which are dominated by hundreds of thousands, if not millions of smallholder farmers and input supply, trading, processing, wholesaling, and retailing businesses. Farmers and business are arranged in highly fragmented, complex value chains, often with weak linkages to markets or other actors in the chain. The increasingly intensive small-scale production systems also put mounting pressure on the environment and natural resources. The major challenge here is how can farmers and MSMEs be supported and enabled to implement necessary investments, innovations and technology adoption in these areas required to be both sustainable and competitive over the long term. An identification a range of cross-cutting initiatives and opportunities that are necessary for Vietnam's food system transformation toward sustainability.

**3.5 Thailand Food Systems: A systematic approach toward integrated policy process**

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For Thailand, food sector is one of the most important sectors and giving significant impacts both to national economy and the society. Furthermore, food sector involves variety and complexity of drivers and numbers of stakeholder group. Food systems research is a systematic approach to explore, understand and analyze food sector, its components and the interactions. This paper proposes 'Thailand Food Systems Framework', comprising 1) socio-economic drivers such as market drivers, public policy and political drivers, science and technology drivers, population drivers, etc., 2) environmental drivers such as climate, water, soil, etc., 3) food activities, such as agricultural production, processing and packaging, retailing and wholesaling, and consuming and disposing, and 4) three dimensions of the food systems outcomes. By the comprehensive reviews of the national policies and plans together with experts and stakeholders consultation, goals for development of Thailand's food systems are identified and proposed, based on the food systems framework. The framework and goals lay foundation for policy analysis, formulation as well as monitoring and evaluation of the national food systems.

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