

Agriculture and Rural Transformation in Asia

Past Experiences and Future Opportunities

An international conference jointly organized by ReSAKSS-Asia, IFPRI, TDRI,
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Conference Proceedings¹



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EXECUTIVE SUMMARY

The conference had three broad objectives: (a) Exchange experiences and promote cross-country learning in agricultural and rural transformation; (b) Bring together researchers and analysts with policy makers to disseminate policy research results and encourage dialogue; and (c) Strengthen the ReSAKSS-Asia network, identify emerging policy-relevant research topics, and outline future networking opportunities.

The opening session and keynote address provided key policy and historical contexts, setting the tone and overall direction of the conference dialogue. Nearly all speakers took note of the types of transformation that are currently impacting the region and those that will shape its future, which was made clear by the keynote presentation that highlighted:

- The increasing importance of rural-nonfarm income as a share of rural households' total income and few households who are specializing exclusively in agriculture today in Asia.
- The increasing usage of mechanization among smallholders to achieve improved labor productivity and combat increasing rural wages.
- The diversification of production toward more valuable crops such as fruits, vegetables, and in some cases oilseeds and livestock consistent with dietary transformation.
- Increasing innovation and specialization that takes advantage of countries' comparative advantage in production.
- Decreasing farm sizes for the majority of farmers that are likely to stay small because of land scarcity in most Asian countries.

The panel with policymakers emphasized the role of government in supporting agriculture as well as in supporting private sector development through an enabling environment where business can flourish given the increasingly important role of the nonfarm sector in the rural economy. Research presentations in the plenary session focused on different countries' experiences with agriculture and rural transformation, providing a snapshot of how different sectors of the economy have shifted in relative importance, how labor has or hasn't moved between sectors, and the consequent impacts on agriculture productivity and income growth. The micro evidence of agricultural and rural transformation was also presented using household panel survey data, focusing on changing livelihoods and the enablers of successful agricultural households. There were also two sessions on migration and labor markets that provided insights into the motivations and characteristics of those migrating, what their prospective livelihoods look like at their destination, and what their departure means for those left behind.

A session on modern farm practices introduced emerging technologies and management techniques. Some of these technologies, such as precision agriculture, are currently being utilized by modern, large-scale farms and it may not be for some years until declining costs of technology make them a cost-effective investment for medium size farms. That said, there were other types of farm management practices presented that rely on improved nutrient management and cropping strategies that are beneficial and efficient for smallholders. A similar session that focuses on mechanization and the role of machine services examined how agricultural mechanization has evolved in countries with different agroecological, institutional, and political settings, and what common lessons can be learned for those countries at the early stage of mechanization. They also reviewed how the private sector plays the central role in agricultural mechanization development and how hiring services are crucial for reaching

smallholders. They also showcased how governments rarely promoted mechanization directly but rather facilitated private sector-led mechanization through reform, liberalization and market coordination.

The panel of experienced private sector representatives highlighted areas where public-private dialog can be used to improve policy. They discussed the need for harmonized regulatory standards to facilitate trade that benefits both consumers and business. Also emphasized was how consumer demands for safety and quality, and increasingly traceability requires greater support from national governments and policy, particularly to improve the standards of laboratories that implement testing. Better agreements about communication strategies in the event of a food safety issue to protecting consumers and companies are also needed. Two additional research sessions looked at diversifying agricultural production into high-value commodities as a means of transforming agriculture reinforcing many of the messages outlined in the private sector panel. They showcased how a strong industrial foundation including infrastructure and roads helped lower costs and risks for small business owners and how policies such as loans, tax breaks, and special zoning supported startups. Additional research studies showed how a lack of direct government intervention and favorable policies facilitated an open operating environment for private agribusiness giving them a space to compete and innovate.

The final session of the conference was an open discussion among all participants focusing on future research topics, and their key take home messages from the conference. The participants agreed that the conference brought to light the following areas that need to be addressed in the future:

- Transformation is inevitable and is likely good for many, but there are also losers. We should consider at what costs transformation has come and what happens to those that are unable to integrate well in a transforming economy, including the policies needed to support them.
- The usage of mechanization is increasing throughout the region. A clearer understanding of how machine services and rental markets work is needed and how best to support them. Small farm sizes are likely to persist so this area of research would be relevant for nearly all countries in the region.
- Aquaculture development is taking place in many countries across Asia with some having more success than others. Some lessons were shared but this sector is likely to continue to expand and additional research would be warranted.
- Many countries have at different times put in place a variety of subsidies. Some are still in place while many have also been scaled back or eliminated. What has been countries experiences with pulling back subsidies and their successes and failures?
- The conference highlighted a number of value chains that have been successful but it may be useful to take a closer look at the comparative advantage of certain sectors across countries, areas of future growth, and sectors where the market is saturated.
- Both internal and international migration seem to be important drivers of transformation by changing rural labor markets. The conference provided some examples but it is not entirely clear of the impacts that migration is having on those that are left behind.

The following were the main messages of the conference:

- Agriculture is declining in importance relative to the industrial and service sectors among most Asian economies. It is also declining as a share of incomes in rural households that increasingly diversify into rural nonfarm income sources.
- Transformation in agriculture is also a process of moving from low to high value crops and the shift from crop to non-crop sectors such as aquaculture and livestock. High value crops are going to increasingly become important when more Asian people enter the middle class.

Governments must partner with the private sector to support improvements in safety, quality and traceability of these products to help small farmers to participate in these value chains.

- Migration is changing rural labor markets and driving up rural wage rates. Mechanization is increasingly used to substitute for human labor in many agricultural practices. The private sector is playing the central role in mechanization through the development of service hiring markets. Governments can facilitate private sector-led mechanization through reform, liberalization and market coordination.
- The knowledge sharing mechanism of different policy practices and experiences is important, and ReSAKSS-Asia should continue to play this role to promote efficient and effective policies for continued transformation in agriculture and rural economy ensuring that all households, including smallholders and the landless, benefit.

Day 1 (December 12)

OPENING SESSION

The moderator introduced the schedule and main objectives of the conference as follows:

- Exchange experiences and promote cross-country learning in agricultural and rural transformation
- Bring together researchers and analysts with policy makers to disseminate policy research results and encourage dialogue
- Strengthen the ReSAKSS-Asia network, identify emerging policy-relevant research topics, and outline future networking opportunities

Opening remarks were provided by Ms. Jariya Suthichaiya, the Deputy Permanent Secretary of the Thai Ministry of Agriculture and Cooperatives followed by Mr. Jeffrey Spence the Deputy Mission Director of USAID's Regional Development Mission to Asia. They, like PK Joshi, Director of IFPRI-Asia, all took note of the types of transformation that are currently impacting the region and those that will shape its future including: population growth, shifting demographics, migration, technology and changing dietary habits including greater dairy and meat consumption. They also cited a changing climate that requires agricultural systems to adapt to more frequent and severe shocks putting many farm livelihoods at risk. They emphasized that poor consumers, who spend as much as 50 to 70 percent of income on food, have limited ability to cope with rapidly rising prices.

Mr. Spence remarked on the accomplishments of the region highlighting how China and India have been driving the greatest poverty reduction in human history by creating the world's largest middle classes and how in a single generation, Vietnam has moved from being one of the world's poorest nations to being a middle-income country.

Dr. Nipon Poapongsakorn of the Thailand Development Research Institute (TDRI) discussed how Thailand has embraced technology to improve rice yields and coupled this with strong policies and public investments in rural infrastructure to make the Thai agricultural transformation largely possible. Investments in irrigation and drainage were critically important for crop productivity and helped stabilize yields of rice.

Still, all speakers noted that there were numerous challenges. In many parts of Asia malnutrition remains a critical issue while at the same time obesity rates in more than half of Asian countries are increasing rapidly called the double burden of malnutrition. In many Asian countries, it was noted that meeting food needs is therefore not just about quantity—quality is also important. As Asia continues to develop more consumers are expected to join the middle class changing the composition and structure of value chains to meet new dietary habits. Supplying this growing population with adequate, nutritious and affordable food is a challenge and an increasingly complex task given the declining availability of agricultural land.

Addressing the challenges posed by rapidly transforming agricultural systems cannot be carried out without the right policies. This means policymakers creating a regulatory framework that encourages the development of new food production technologies, creates an environment where nutrition is valued, and stimulates investment in the agri-food system by the private sector. Improved policy can also make food value chains more inclusive to smallholder farmers, who produce most of Asia's food, giving them greater access to markets and higher income.

All the opening speakers recognized that sharing knowledge about different policy mechanisms can be an important tool to promote more efficient and effective pathways of continued transformation in the agricultural sector and rural economy ensuring that all households, including smallholders and the landless, benefit. Past experiences of more developed countries in the region can be useful lessons for some other countries that are in the process to develop and implement such policies. This conference was organized to facilitate this exchange of experiences and knowledge.

KEYNOTE ADDRESS

FAO Senior Economist Dr. David Dawe provided the keynote address for the conference entitled “*Rural Incomes in the Context of Structural and Agricultural Transformation*”. In his talk Dr. Dawe underscored several of the types of transformation highlighted by the opening speakers. In particular, he pointed to:

- The increasing importance of rural-nonfarm income as a share of rural households’ total income and few households who are specializing exclusively in agriculture today in Asia.
- The increasing usage of mechanization among smallholders to achieve improved labor productivity and combat increasing rural wages.
- The diversification of production toward more valuable crops such as fruits, vegetables, and in some cases oilseeds and livestock consistent with dietary transformation.
- Increasing innovation and specialization that takes advantage of countries’ comparative advantage in production.
- Decreasing farm sizes for the majority of farmers that are likely to stay small because of land scarcity in most Asian countries.

PANEL SESSION 1: POLICYMAKER PANEL DISCUSSION ON CHALLENGES IN AGRICULTURAL AND RURAL TRANSFORMATION AND THE ROLE OF THE GOVERNMENT

The distinguished group of policy makers provided a nice introduction to some of the challenges governments in the region have faced and discussed some of their countries successes stories and policy lessons for others in the region. Ms. Younas provided an overview of some of the programs that Bangladesh has implemented to boost productivity and improve food security. Mr. Chantanond Wannakaihon discussed how Thailand is pursuing an agriculture system that embraces technology and innovation throughout the value chain. Thailand has had a lot of success as an exporter and has found that food safety and meeting standards through value chain improvement remain an area in need of support especially one that integrates some of the more disadvantaged farmers that aren’t currently able to participate. Mr. Dang Van Cuong also spoke about how Vietnam is also trying to move to higher value products through value addition. His remarks addressed how Vietnam has been able to increase productivity in recent years and has done so for a large number of crops, especially those that are exported. There has also been significant growth in exports but the challenge remains on increasing the margins for these crops which is at present quite small limiting farmers’ profits. Through diversification and greater agro-processing the movement to higher value-added products will continue to improve farmer margins.

Mr. Wannakaihon also briefly mentioned some of the institutional arrangements that Thailand is implementing to better connect with farmers and provide them support. This has taken the form of

organizing cooperatives, improving extension models, and initiating learning centers. Mr. Dang Van Cuong described how policy making in Vietnam is being simplified and how streamlining government is improving efficiency but also better serving farmers. He noted how in 2008 Vietnam had 24 national programs with multiple projects under each, so many so, that even government staff struggled to manage them. At present Vietnam implements two national programs which has reduced overlap and better integrated staff and streamlined financial support.

Mr. Vinoth Vansy described how Lao PDR is one of a few landlocked countries in Southeast Asia bordered by countries with strong economic as well as agricultural performance like China, Thailand, Vietnam and Cambodia. Integrating the country with regional and world economies is always a high priority for Lao's agricultural development strategy. He also described how Lao PDR is close to food self-sufficiency because of a low population and relatively abundant land and as such is turning its attention to exports. In this sense, the country has been active in working with ASEAN and the country is pursuing WTO membership to help foster cross border trade.

Mr. Tin Htut Oo compared and contrasted Myanmar with Thailand and Vietnam commenting on where they fell along the process of rural transformation. He remarked on how we should be thinking about rural transformation. Many spoke about the role of government in supporting agriculture, and rightly so given the important need for research and infrastructure, two areas both Thailand and Vietnam have done well. However, David Dawe's talk made clear that the non-farm sector is increasingly important to rural households. As such, he suggested that we need to think about both sectors when we think about the role of government support. In the case of supporting the rural non-farm sector, we must be aware of the role private sector and government's role in this instance has been to create an environment where business can flourish. Thailand, perhaps more so than the others, has done this, which is why we in the region look to them as an example.

COUNTRY EXPERIENCES WITH AGRICULTURAL AND RURAL TRANSFORMATION: A NATIONAL PERSPECTIVE

Five presentations were made reflecting on how countries throughout the region have transformed at the national level. These presentations provided a big-picture assessment of how different sectors of the economy were shifting in relative importance and how labor has or hasn't moved between sectors. They also provided information on topics such as migration, agriculture productivity and income growth. Highlights from the presentations are given below.

Agricultural Transformation in Vietnam

Dr. Nguyen Duc Loc, Director, Center of Agricultural Policy in South Vietnam

- Vietnam is moving along a similar path as other countries that have undergone structural transformation. Agricultural value added as a share of total GDP is decreasing but at the same time, agricultural employment is decreasing as a share of the total. During the early 1990's the country was primarily agriculture-based whereas now Vietnam is in the transition phase before moving to a more urbanized economy.
- Much of Vietnam's recent growth in agricultural exports has been through expansion of the forestry products and fruits and vegetables and rice has decreased in share as has rubber and aquaculture.
- Income sources are diversifying. Almost 65 percent of rural households have 5 or more sources of income and wage employment is increasing while the share of self-employed farmers is decreasing.

- Average annual agricultural productivity growth has started to plateau. While Vietnam ranks very high in terms of export volumes of rice, rubber, cashews, coffee and other products, the prices they receive are generally low compared with competitors and exports are primarily unprocessed (raw) goods.

Transformation of Thai Agriculture in the last three decades

Nipon Poapongsakorn, Distinguished Fellow and Kamphol Pantakua, Researcher, TDRI

- The presentation describes the structural transformation of Thai agriculture, including the emergence of the modern food value chain in the last three decades. The transformation was induced by industrialization, export market opportunities, import pressure for safe food, increasing per capita income, government policies and institutional change
- The evaluation of long-term agricultural development focuses on the sources of competitiveness of Thai agriculture, using the trade theory of economies of scale and clusters.
- Unlike other Asian countries, Thai governments have always adopted the laissez faire policy and invested heavily in rural infrastructure since the late 1950s including rural road network, dams, rural electrification, rural schools and agricultural credit bank, ports and logistics, etc.
- Both internal and external challenges facing Thai agriculture were presented, with some policy implications focusing on boosting agricultural productivity for smallholders, accelerate agricultural growth, and reducing income inequality.

Structural Transformation and Growth in Indonesia

Gracia Hadiwidjaja, Center on Food Security and the Environment and Economic Research Institute for ASEAN and East Asia.

- After the Asian Financial Crisis of 1997/98 the Indonesian economy grew at around 5.8 percent. Agricultural growth was 3.7% but growth in services was 7.4%. Indonesia has recovered but agricultural growth has not been very strong.
- Since the crisis, agricultural employment share has reduced while the employment share in industry and services has increased. Those sectors with the highest productivity such as mining and finance are small and were not able to absorb much labor while construction and government have been the main absorbers.
- Agricultural productivity since the crisis has increased and that growth rate has been higher than the industrial or service sectors. By doing a growth decomposition analysis, we are able to see that the bulk of that productivity growth is occurring because of the movement of labor out of the agricultural sector into others.

India 1960-2010: Structural Change, the Rural Non-Farm Sector, and the Prospects for Agriculture

Alwin D'Souza, Arizona State University

- In countries undergoing structural transformation, we see a reduction in the share of agricultural GDP and the share of those engaged in agricultural employment. In India, we are not seeing this convergence toward zero, but rather there is a divergence with output per worker in the non-agriculture sector increasing dramatically while output per worker in the agricultural sector remains relatively flat.
- The largest growth in non-agricultural employment is in the rural non-farm sector rather than in urban areas
- Structural transformation has been very slow and a turning point may be far away with the rural and agricultural labor forces still growing, rural-urban migration very slow, and only small increases in agricultural productivity in recent years.
- While the urban-agricultural productivity differential has been rising, rural urban income differences grew little because of non-farm growth

Structural Transformation in Rural Bangladesh: Is it Market-Led?

Minhaj Mahmud, Senior Fellow, Bangladesh Institute of Development Studies and Binayak Sen, Senior Research Fellow, IFPRI

- In the 1980s and 1990s, most of the changes in the rural economy were brought about by within-rural sector changes such as the green revolution and microcredit.
- In the 2000s and 2010s, the role of outside-rural drivers became increasingly prominent. The latter include (a) urbanization and industrial development (offering domestic migration opportunities and salaried work), and (b) the economic role of foreign remittances.
- Changes in the composition of rural income during 1991-2010 were due to changes in the labor market including: a) growing importance of salaried work, b) persistence in traditional non-farm self-employment, c) rising “contract labor” in place of casual labor for farm work.
- Rural structural transformation in Bangladesh has included: (a) changes in the rural output composition that favor non-agricultural sectors (b) productivity enhancing growth through the adoption of new agricultural technologies and the use of mechanized service market; (c) changes in the rural labor (and tenancy) markets.
- The state has been largely supportive of these “silent transformations”. It created a liberalized trading environment for imports of agricultural technologies, invested in rural roads, provided basic education and preventive health, and instituted law and order required for conducting private business.

PLENARY SESSION 2: COUNTRY EXPERIENCES WITH AGRICULTURAL AND RURAL TRANSFORMATION: AN ASSESSMENT FROM THE BOTTOM UP

In this session, three speakers provided a more in-depth look at how transformation is occurring at the household level by relying on panel survey data. They looked more closely on how livelihoods are changing and what are the drivers of successful agricultural households.

Infusing Growth: Rural Agricultural Investments and its Impact on Agrarian Development in Northeast Thailand

Priyanka Parvathi, Post-doctoral researcher, Leibniz University Hannover, TVSEP

- This study examines whether investing in smallholder agriculture structurally changes employment patterns of rural farm households in Northeast Thailand.
- Younger farmers with larger farm sizes having livestock tend to invest more in agriculture.
- Negative demographic shocks and lack of access to irrigation are more likely to significantly reduce agricultural investments.
- Investments in the previous year results in yield increases in the next year. Subsequently yield increases structurally transforms rural smallholder agriculture by leading to reduced labor share in agriculture and an increased labor share in non-farm employment in the following year.
- Policies are needed to encourage rural smallholders to continue to invest in agriculture. These could include increasing areas under irrigation, making mechanisms to cope with shocks like micro insurance services more affordable and designing policies that facilitates easier access to rural agricultural loans for investing in machinery and equipment.

Agricultural Investment and Structural Change: Evidence from Rural Vietnam

Thanh Nguyen, Assistant Professor Leibniz University Hannover, TVSEP

- This study investigates the impact of agricultural investments on structural change at the household level and the effect of changes on poverty and income inequality.
- There is a clear sign of structural change at the household level in terms of the shares of household labor in farming activities and farm income.
- There is a higher level of agricultural investment by larger farmers with livestock,

- Livestock production can have a positive impact on the reduction of poverty and income inequality.
- Promoting agricultural investment through livestock rearing & farm land accumulation can be a way of reducing poverty and enhancing extension services for livestock diseases can help reduce income shocks from livestock loss.

Agricultural Transformation in Eastern India: Lessons Learnt and Future Opportunities

Ranjit Kumar, National Academy of Agricultural Research Management, India

- In Bihar, Jharkand, and Odisha states in India, growth has been strong in the last decade but it is largely being driven by growth of the service sector. We can see the share of agriculture decreasing relative to other sectors in the last decade, even in areas that are extremely poor and where industry has not taken off.
- Agriculture is growing in all three states, just not at the rate of the service sector, and that growth is being driven by diversification into other crops such as pulses, oilseeds, and livestock. The cereal-based cropping pattern may not be able to bring needed transformation.
- More non-farm opportunities are needed through public investment in road, electricity, storage & warehousing, value addition, etc. These can create the conditions for primary value addition (storage, grading, pulping, etc.) in agriculture.
- Developing more efficient linkages with high-income, urban consumer markets will be crucial to stimulate high value commodity growth.

PARALLEL SESSION 1A: MODERN FARM MANAGEMENT TECHNOLOGIES AND THEIR ADOPTION

Many Asian farms have adopted the green revolution technologies of improved seeds and fertilizers and are now looking to transition toward modern farms found throughout many other parts of the developed world. This session introduced participants to emerging technologies and management practices being utilized throughout the region. Some of these technologies, such as precision agriculture, are currently being utilized by modern, large-scale farms and it may not be for some years until declining costs of technology make them a cost-effective investment for medium size farms. That said, there are other types of farm management practices that were reviewed that are beneficial and efficient for smallholders that rely on improved nutrient management and cropping strategies to make better use of solar radiation that hold promise for smallholders throughout the region.

Modern farm management technologies and their adoption

Isara Vongkusolkiet, Chairman of Mitr Phol Group

- The focus of this parallel session is technology but much of our company's success has been about management and creating conditions that are beneficial for farming households to participate as our out-growers. This has included support in the form of loans with low interest rates that vary depending on the type of service or equipment purchased. The company also promotes preserving some area of farms for household consumption or cash crops including aquaculture.
- The company supplies some equipment to out-grower farms that they can repay over a course of a couple of years including irrigation supplies such as drip or spray lines, wells, solar cell pumps, etc.
- The company is now implementing precision agriculture where a single individual is responsible for the management of about 10,000ha. This includes yield maps, working to consolidate farms to increase inefficiency with tractor usage for plot maintenance such as weeding, fertilization, and harvesting.

Precision agriculture in smallholder systems. From innovation to evidence

Alejandro Nin-Pratt, Senior Research Fellow, IFPRI

- Precision Agriculture (PA) is an approach to farm management that uses information technology (IT) to control for intra-field variability in crops and environment, ensuring that crops and soil receive the exact amount of inputs needed to increase profitability, sustainability and protection of the environment. This includes location determination (via GPS), computerized GIS, computer-guided controllers for variable rate application of crop inputs, and sensing technologies for automated data collection and mapping.
- These types of technologies are generally most appealing where capital is abundant relative to management labor. This is generally not the case in rural, poor developing regions with abundant labor. Additionally, because these technologies improve the efficiency of input use in mechanized agriculture, they are likely to be adopted first in those places where input use is already relatively efficient. Finally, there is a higher probability of adoption where the scale of a single field is large relative to the temporal variation in crop yield. If the opposite is true, then the optimal risk aversion strategy is uniform management.
- Advances in IT in the longer run could favor the adoption of PA by medium and small-scale farmers by reducing the bias of the technology favoring large capital-intensive farmers:
 - Hand held soil and other sensors linked to cell phones
 - Robotics for planting, weeding, pest management and harvesting fruit, vegetables and other hard to mechanize crops
 - Pooling data for better management insights

Pursuing Sustainable Productivity with Millions of Smallholder Farmers

Zhenling Cui, China Agricultural University

- China has been able to nearly achieve self-sufficiency in rice production, but to do so, they have increased fertilizer consumption rapidly, even at a time when many other regions around the world are beginning to decrease usage. Much of the usage in China is inefficient and its usage impacts the natural environment including eutrophication of rivers, acidification of soils, and air pollution.
- It is possible to double maize yields without increasing N application rate by designing cropping system to adopt local ecological conditions, to make use of solar radiation and periods with favorable temperatures, and establishing an in-season root zone nutrient management strategy.
- The system uses various management technologies² that increase yields by 18-22 percent, reduces nitrogen applications by 9 to 16 percent, improves efficiency by 26 to 33 percent, reduces nitrogen losses by 23 to 35 percent, and reduces greenhouse gasses by 19-29 percent.

PARALLEL SESSION 1B: ECONOMIC LINKAGES AND MIGRATION

Does Migration Support Technology Diffusion in Developing Countries? Evidence from Thailand, Vietnam, Laos, and Cambodia

Michael Hübler, Junior-Professor, Leibniz Universität Hannover, TVSEP

- The paper examines whether rural-urban migration affects mobile phone diffusion in SE Asia using the TVSEP dataset.
- Emigration and immigration positively affect rural technology diffusion, as long as we do not simultaneously control for households' educational attainment and average age
- If we control for these two factors then migration reduces technology diffusion.

² Improved crop varieties, optimal sowing densities, improved sowing dates and amounts, nitrogen application rates, and deep plowing

Rural-Urban Migration and Integration of Labor Market in India

Amitabh Kundu, Visiting Fellow, Research and Information System for Developing Countries (RIS), New Delhi

- Earlier presentations including the keynote showed shifting patterns of growth away from agriculture as well as rates of migration to urban areas. India is no exception; the rate of rural to urban migration has not changed much since the early 1990s with the exception of the 2011 data which might be questionable and is being evaluated.
- That said, urbanization data can be tricky. The classification of towns change, urban populations grow and area expands, and there is obviously net rural to urban migration. A decomposition of urban population growth comparing the 1990s to the 2000s shows that the rate of urbanization has decreased. There is an exclusionary type of migration where rural, unskilled migrants are finding it harder to participate in the urban economy.
- There is a rural to rural migration taking place with migrants moving from low ag productivity areas to higher ag productivity areas. If an area is growing through capital intensive development, then this area tends to not attract migrants.
- Rural transformation, given the low rate of urbanization and sluggish sectoral shift towards industries and services, will be challenging. The possibility of absorbing migrant labor within and outside agriculture in agriculturally developed regions must therefore not be dismissed.

Migration, Employment and Food Security in Central Asia: the case of Uzbekistan

Bakhrom Mirkasimov, Senior Lecturer, Westminster International University, Tashkent

- There is more outmigration from Uzbekistan than internal migration. Around two million Uzbeks living outside the country in 2015, primarily working in Russia and some in Kazakhstan. The remittances from these migrants made up as much as 12% of GDP in 2013 but following the collapse of the Russian Ruble due to sanctions, this rate has dropped to 4.7% of GDP with many migrants returning home.
- Most migrants are male, come from the rural areas, have a secondary education, and the average age is 31.
- Most migrants that are returning from migration abroad stay in the capital Tashkent rather than returning to their village of origin.
- If you have a migrant relative at home, it negatively affects the probability of supplying your labor for the family members left behind which has implications for the nutrition security of those left behind.

Wednesday, December 13 (Day 2)

PARALLEL SESSION 2A: **MECHANIZATION AND THE ROLE OF EVOLVING MACHINE SERVICES**

This session provided insights into how agricultural mechanization has evolved in countries with different agroecological, institutional and political settings, and what common lessons can be learned for those countries at the early stage of mechanization. They reviewed how the private sector plays the central role in agricultural mechanization development and how hiring services are crucial for reaching smallholders. They showcased how governments rarely promoted mechanization directly but rather facilitated private sector-led mechanization through reform, liberalization and market coordination.

The rapid rise of agricultural mechanization in Myanmar

Ame Cho, Research Associate, Centre for Economic and Social Development

- In the Delta, machines replaced draught animals particularly for land preparation and the use of combine-harvesters is also picking up rapidly while in the Dry Zone, farmers combine the use of tractors and draught animals for land preparation for non-paddy crops
- Machinery is becoming more common and diversified by type. Ownership of feed cutters hasn't changed much since 2000; however, there has been a significant jump in ownership of water pumps and tractors since the economic reform in 2010. The largest jump, in terms of value, has been for 4WTs.
- Rental services are found to be essential for smallholder farmers' access to machinery. Service providers maximize their efficiency by traveling between the Delta and the Dry Zone which have different cropping seasons.
- The recent policy reform in the financial sector that allows all private banks to do business in agriculture, including financing agricultural equipment, playing an important role in reducing financial constraints for machinery investment. Formalization of land use rights by the government also has played a key role as it allows farmers to use land certification issued by the government as collateral.

Agricultural Mechanization: Policy Lessons from Bangladesh

M. A. Sattar Mandal, Emeritus Professor, Bangladesh Agricultural University

- Natural disasters that wiped out Bangladesh's draught animals in the 1980s prompted the government, with the help of donors, to lift import restrictions on farm equipment. The private sector, encouraged by tax exemptions, began importing affordable small-scale equipment. Although adoption of these small machines increased food production, there is low use of machines such as combine harvesters, seeders, rice transplanters, hand weeders, and reapers.
- Small-scale mechanization was suitable for Bangladesh's highly fragmented land.
- Bangladesh's success in mechanization is attributed to the vibrant private sector, academic engagement in policy processes, building of agricultural & rural development institutions, localized technology interventions and setting up physical infrastructure

Effect of Labor Movement on Agricultural Mechanization in Cambodia

Sim Sockcheng, Research Fellow, Cambodia Development Resource Institute

- Statistics show that there has been a vast movement of labor out of rural areas affecting rural labor markets and drastically reducing the number of agricultural workers.
- The numbers of agricultural machines such as tractors, power tillers, threshers and water pumps has increased year after year.
- The movement of labor in Cambodia induces farmers to purchase or invest in more agricultural machinery, which in turn leads to further mechanization of agriculture. There is also a positive

association between the number of migrant household members and the level of investment in agricultural machinery.

- Machinery hire services are likely to expand for those unable to purchase machinery while farmers would benefit from low-interest credit for farm machinery and the improvement of land laws to allow them to access loans.

Custom Hiring and its Impact on Paddy cultivation in Sri Lanka

Melvin Samarasinghe, Director, Agfour Engineering

- Mechanization started with irrigated rice farming and was further popularized by the formation of state-run tractor pools. Liberalization since the 1970s has increased the use of 2WT and 4WT for rice and other field crops.
- Although they were introduced 30 years later, 2WTs were more popular than 4WTs until the last decade. Since then, this trend has reversed due to the preference for 4WTs for large landholdings and improved infrastructure.
- Mechanization filled the gap created by the migration of agricultural labor to other sectors; high yielding and high-value crops with the use of technology were also a driver of mechanization. However, import policies and rugged terrain posed a challenge.
- Most machines are imported but locally manufactured machines and modified versions of imports are also available.

PARALLEL SESSION 2B: **RURAL LABOR MARKETS, MIGRATION, AND ECONOMIC OPPORTUNITIES FOR THE LANDLESS**

Migration, both internal and international, have been cited as key drivers of rural transformation. This session, like the one held the previous day, examined the drivers and characteristics of those migrating, what their prospective livelihoods look like at their destination, and what their departure means for those left behind.

Go or Stay: Inter-relation between International Migration and Agriculture Policies in Cambodia

Vathana Roth, Research Fellow, Cambodia Development Resource Institute

- Between 2000 and 2015, the number of Cambodians abroad increased from .5 million to 1.2 million and about 10% of Cambodians aged 15 or above plan to emigrate because the Cambodian labor market has not been able to sufficiently absorb new entrants. There are also higher wages in neighboring countries, particularly Thailand.
- Those that are leaving Cambodia are mostly low-skilled labor that comes from the agriculture.
- Remittances are not driving investment or diversification in agriculture. The bulk of remittances are used for basic consumption, not productive investment.
- Cambodia provides subsidies to some agricultural households. Those that received subsidies had a higher likelihood of being migrants and the money from the subsidy is being used finance migration episodes.

Migration, Microfinance and the Mechanized Service Market: Explaining the Puzzle of Landless Tenancy in Rural Bangladesh

Binayak Sen, Senior Research Fellow, IFPRI

- The increase in the share of cultivable area under tenancy and the unpredictable rise of landless tenants have been brought about by a confluence of several factors that underpinned rural structural transformations in Bangladesh.
- The spread of education, expansion of regular jobs, and urbanization have encouraged renting out of the agricultural lands by land-rich households.

- The growth of microfinance and the rapid development of markets for mechanized services have made tenant farming increasingly possible. This is true in case of landless tenants as well.
- There seems to be specialization among landless households: some landless groups are entering the land sector as tenants, while other landless groups are moving out, being increasingly involved in non-agricultural jobs.
- The agricultural route of upward mobility via landless tenancy must be recognized as equally potent route as the non-farm route for uplifting the landless households out of poverty

Myanmar Migration in a Time of Transformation

Mateusz Filipinski, Research Fellow, IFPRI

- Myanmar has large flows of migrants both domestically and those going abroad, primarily to Thailand. They encompass all income levels, all genders and include rural-to-urban and rural-to-rural migrants.
- Migration is creating labor shortages and pushing up rural wages but in some cases these higher wages are attracting other domestic migrants from neighboring regions (i.e. secondary migration). Farms are also mechanizing to compensate.
- Much of money that is remitted is fueling rural consumption and construction.

Land Reform and Child Nutrition: Evidence from Kyrgyzstan.

Olga Shemyakina, Associate Professor, Georgia Tech University

- The Kyrgyz government rapidly liquidated state and collective farms (75% of agricultural land) and distributed land to individuals (with 99-year transferrable use rights) in the early 1990s (peaking during 1994 – 1995) initiating private land ownership.
- How land is accessed (amount, security of tenure, ability to use as collateral or lease out, etc.) may affect inputs into child health by affecting income, the availability and diversity of food, and the time spent with children.
- Children of both genders exposed to privatization for longer periods of time accumulated significantly greater gains in height and weight, both critical measures of long-term health and nutrition
- Health benefits appear only after age 1, and are the largest for those 13-18 months old Possibly due to protective effects of breastfeeding for very young children and reduced vulnerability to health shocks for older children.
- Availability of land itself does not appear to explain health benefits; appear to come from other sources such as tenure security/ ability to use land as collateral/ rent it, etc.

PANEL SESSION 2: ATTRACTING PRIVATE SECTOR AND PROMOTING AGRICULTURE, AGRIBUSINESS AND EXPORTS

Panelists

- *Syed Mahmudul Huq, Bangladesh Shrimp and Fish Foundation*
- *Steven Bartholomeusz, Food Industry Asia*
- *Saumil Shah, CEO, Energaia*
- *Somsak Mauthorn, Senior Executive Vice President, Siam Kubota Corporation*

The panel of experienced private sector representatives highlighted a number of areas in which greater partnership between the public and private sector could be leveraged to promote agriculture, agribusiness and exports. The panelists highlighted that by 2050 much of Asia will have moved into middle-income status and the demand for food will increase dramatically. Much of that growth will be for high-value products and protein sources. This demand, coupled with the region's favorable climate, has the potential to make Asia the

food basket for much of the world. However, the private sector seeks out environments where the policy environment is the most conducive for them to operate freely. There is a real opportunity for the public and private sector to partner to create the conditions for agribusiness to grow in a way that is beneficial for both. Policies need to be reviewed frequently and done so in an open and transparent way.

The panelists highlighted four areas where public-private dialog can be used to improve policy.

1. Most frequently discussed was the need for **harmonized regulatory standards**. Technical barriers to trade are key issues in the region. There is increasing non-tariff measures, opaque rules, arbitrary standards that are not based on science, customs or import/export procedures that are either slow, costly or excessive. ASEAN is a useful forum for these discussions but progress has been mixed. By working together to facilitate greater regional harmonization, trade can more easily take place that benefits both consumers and business.
2. Companies are beholden to consumer demands for safety, quality and, increasingly, **traceability**. Customers are asking for more information about where items are produced and who it was produced by. Companies are developing mechanisms to improve the traceability of products but greater support is needed from national governments and policy.
3. There has been instances where human safety has been put at risk and where companies' reputations have been severely damaged because of poor **laboratory standards** and testing quality. In many instances companies are self-governing, implementing their own corporate standards throughout the value-chain but dialog is necessary to improve the standards of laboratories that implement testing.
4. Better agreement is needed about **food safety communication strategies**. In the event of a food safety issue, what information to communicate, when it is communicated, and how it is communicated is critical to protecting consumers and companies.

PARALLEL SESSION 3A: DOMESTIC MARKETS FOR SMALLHOLDER HIGH-VALUE AGRICULTURE

Diversifying agricultural production into high-value commodities is one means of transforming agriculture as highlighted during the keynote presentation. Government policy can support this diversification through a variety means. The case study on horticulture e-commerce showcased how a strong industrial foundation including infrastructure and roads helped lower costs and risks for small business owners and how policies such as loans, tax breaks, and special zoning supported startups. The two cases of aquaculture development in Bangladesh and Myanmar show how a lack of direct government intervention and an operating environment gave the private sector more room to compete and innovate.

Domestic markets for smallholder high-value agriculture: Case of Dairyhome

Pruitt Kerdchoochuen, Managing Director, Dairyhome, Thailand

- The number of dairy farms has decreased dramatically in the last 15 years in many cases because of a free trade agreement with other countries such as New Zealand and Australia which can produce at a cheaper price.
- On average, Thai production is quite good and on a per area basis is competitive with other crops such as rice or cassava but many of the small farms have low production levels with low margins.
- Dairyhome is working with farmers to lower their costs by relying on their own inputs for feed and shifting to organic production.
- Shifting to a lower input system and relying on grass feeds has increased the quality of the milk and lowered production costs. Margins have more than doubled and net income has increased by about 200 percent.

The Emerging 'Quiet Revolution' in Myanmar's Aquaculture Value Chain

Ben Belton, Assistant Professor, Michigan State University-Myanmar

- Myanmar is among the world's leading aquaculture producers. But less is known about its fish farm sector than any other major aquaculture-producing country in Asia. The literature has characterized aquaculture in Myanmar as strongly export oriented, and dominated by very large farms. Past literature had it that small-scale fish farms were almost non-existent due to land use regulations that were thought to have blocked the conversion of paddy land to ponds. The past literature had it that technologies of the big farms were 'traditional' and extensive.
- The great majority of farmed fish produced in Myanmar is sold to the growing domestic market; only a small share is exported.
- Although large fish farms dominate in terms of total pond area, a small/medium farm segment has emerged quickly. This has given rise to a "dualistic" fish farm sector, with many small/medium farmers and nurseries alongside large farms.
- The take-off of small/medium farms has been helped by the "informal relaxation" of restrictions prohibiting the conversion of paddy land to ponds in the main fish farming zones.
- The upstream segments (feed and seed) of the supply chain have grown fast as have the midstream segments (wholesale and logistics). Most of this growth is due to a "Quiet Revolution" driven by private investments of small and medium enterprises (SMEs).
- Some farms (small as well as large) are intensifying their technologies, resulting in adoption of a mix of traditional more modern farm technologies.

[Aquaculture Growth in Bangladesh: Enablers, Impacts, and the Path Ahead](#)

Shahid Rashid, Senior Research Fellow, IFPRI-New Delhi

- Fish is the second largest item in households' budgets in Bangladesh from which they derive over 60% of animal source protein.
- Aquaculture production has increased from 100 thousand tons in 1983/84 to over 2 million tons in 2015 and now accounts for more than 50% of country's total fish production
- The growth of the sector has been private sector driven with limited government supports (or interventions) to meet domestic market demand. Over 90% of non-shrimp aquaculture is consumed domestically.
- Fish value chains have transformed with greater intensification, specialization, and a reduction in transaction costs.
- Almost all income groups, geographic locations, and both genders have benefited from the sectors growth. Aquaculture growth accounted for 1.7% reduction in poverty headcount between 2000 and 2010 and is about 10% of the overall reduction in poverty in the country (17.4%) during the same period.
- There are strong prospects for future growth and opportunities to improve productivity but ultimately demand will saturate so alternative markets are needed.

[How to Promote Transformation and Upgrading of Agriculture by E-Commerce- ShuYang Case from China](#)

Hongdong Guo, Chair and Professor, Department of Agricultural Economics and Management of Zhejiang University, China

- The government of China has created an environment for e-commerce to develop through investments in infrastructure and through policy support.
- The county of ShuYang is famous for flowers and trees and since 2013 commerce has begun to move online as regular internet usage has spread.
- Production of trees and flowers has become clustered with the area growing from just 2km² in 1990 to over 350km² in 2015. The inputs used for production are now easily accessible and businesses have become larger scale with specialized roles for planting, packaging, and retail.
- Products have also moved from low-value to high value-added. Rather than producing nursery stock, green houses are growing for horticulture products and ornamentals.

- Success factors include:
 - A strong industrial foundation that has helped lower costs and risks and the emergence of e-commerce platforms (Alibaba, etc.) helps connect farms to buyers.
 - The government has supported road and infrastructure development and network facilities to improve commerce activities. They also have an e-commerce service center, provide training and policy support through loans, tax breaks, and special zoning.

PARALLEL SESSION 3B: EXPANDING REGIONAL AND GLOBAL MARKETS

High Value Vegetables for High-End Market, GAP

Chusak Chuenprayot, CEO, K.C. FRESH, Thailand

- Standards are important in processing and transport especially when trying to access supermarkets in the EU, Japan and increasingly China. Global GAP standards govern farm production but also include items such as protecting the environment. Global Manufacturing Practice (GMP) standards regulate processing while many governments have now implemented standards for traceability.
- Logistics are very important in delivering perishable goods. If you don't have a reliable logistics system or provider you will fail to control quality. From the time the products leave the field until the time it is put in the supermarket, transport must be temperature controlled.
- The company has been working with numerous groups of farmers to source our products but they are aging, and young farmers are increasingly disinterested in the work.

Assessing Myanmar's Agri-food Trade Comparative Advantages

Kevin Chen, Senior Research Fellow and Head of East Asia and Central Asia Office, IFPRI-Beijing

- This session examine Myanmar agricultural export pattern including export destination, export value, and export trends of the selected commodities and compared the revealed comparative advantages (RCAs) of Myanmar and its major trade competitors in agricultural export as well as the selected commodities
- Myanmar is a net importer in agricultural products and its agricultural export value exhibits a downward trend.
- Dried pulses are the largest export sector by value followed by rubber, rice and seafood but these exports are concentrated in a small number of neighboring countries. Black grams & pigeon peas and nuts, are concentrated in India, while watermelon, natural rubber, and dried fruits are concentrated in China.
- Compared with major agricultural exporting countries, Myanmar is "competitive" in global markets.
- Myanmar enjoys high level of RCAs in black gram & pigeon peas, sesame seeds, natural rubber, crustaceans, rice, frozen fish, and dried fruits, while has a low level of RCAs in maize, nuts, and banana; and has a declining RCA in fish fillet and watermelon.
- Compared with its competing countries, Myanmar's RCAs fluctuate the most.

Broiler Industry Development in Thailand

Phunjasit Chokesomritpol, Viroj NaRanong and Nipon Poapongsakorn, TDRI

- Broilers made up 9.45% of total agricultural products export value in 2015. Thailand is the 5th largest exporter of frozen chicken (4% market share) and the largest exporter of processed chicken (30% market share).

- CP Company was one of the first to establish modern slaughter houses in Thailand for export to Japan in 1970s. Production was primarily through contract farming arrangements with firms extending knowledge and technologies (medicines, feeds) to small farmers.
- SE Asia does not have a comparative advantage in livestock due to the lack of protein feeds because of aggressive protection of soybean and maize resulting in high prices.
- Thai agri-businesses adapted by exporting boneless chicken which is more labor intensive but takes advantage of cheap labor.
- As wages rose in Thailand in the 1990s, other countries such as China and Vietnam became more competitive so Thai agri-businesses shifted export from frozen boneless chickens to processed or precooked “ready-to-eat” chicken.
- Following the Avian Flu outbreak, new farms must be enclosed using the EVAP system and many larger firms have created integrated “in-house” production systems no longer relying on out-growers.
- Export products meet the food safety and animal welfare requirements from the EU market and have adapted to the Japanese markets preference for antibiotic-free chicken. A “farm to table” traceability scheme has also been established.

PARALLEL SESSION 3C: REGIONAL PULSE TRADE

Should Myanmar Enter into a Long-term Pulse Export Agreement?

Avinash Kishore, IFPRI-New Delhi

- Myanmar has natural advantages in production of pulses that India needs to import in large quantities and India has offered a large forward purchase contract to Myanmar to secure its supplies at stable prices.
- It could be in Myanmar’s interest to enter a contractual agreement at the Indian minimum support price assuming Myanmar’s farmers remain competitive. A forward sales agreement can also facilitate improved production decisions and protect Myanmar’s farmers from growing competition with farmers in India and other countries of the world.
- The large contract size preferred by India can work as a stimulant for Myanmar’s agriculture if the country creates institutions to ensure that export prices benefit smallholders.
- Myanmar will not only be able to meet India’s growing pulse demands, but can also trigger large scale investments in increasing agricultural production, productivity and improving smallholder incomes.

Agricultural Exports, Price Volatility and Monopsonistic Markets: An Analysis of the Myanmar - India Pulses Trade

Duncan Boughton (MSU-Myanmar) and Cho Cho San (MOALI/DOP)

- For both pigeon peas and black gram, Myanmar-India trade accounts for a large share of total trade for each country. India purchased 92 percent of Myanmar’s pigeon pea exports in 2016-17; for black gram the share was 80 percent. Myanmar accounts for 49 percent of India’s total pigeon pea imports; for black gram the share was 70 percent. Thus, Myanmar is heavily dependent on India as a buyer of these products; and India is only slightly less heavily dependent on Myanmar as a supplier of these products.
- Myanmar-India pulse markets are vulnerable to high price volatility. India’s demand and Myanmar’s supply are both inelastic in the short run and pulse production in both India and Myanmar is unstable.

- Myanmar-India pulse markets are reasonably integrated in terms of price signals and there is no evidence of international price manipulation.
- The government to government trade “deal” to overcome volatility is technically difficult to implement and there is little appetite from Myanmar’s traders and government.
- Medium to long-term solutions for both countries lie in more elastic demand and supply through diversification of markets.

Kidney Beans Value Chain and Export Capacity in the Kyrgyz Republic

Kanat Tilekeyev, Senior Research Fellow, University of Central Asia

- The study examines analyzes the kidney bean value chain in the Kyrgyz Republic, most of which is exported to Turkey, Bulgaria, and Russia.
- There is small cluster-based regional production in Talas province based on historical ties, ease of access to export markets, and favorable agronomic conditions. The cluster is not likely to be replicated elsewhere in the country.
- There is a large opportunity to improve margins and increase productivity through mechanization and investments in improved varieties coupled with fertilizer use.

FACILITATED GROUP DISCUSSION: **CONFERENCE SYNTHESIS, WAY FORWARD**

Final session of the conference was an open discussion among all participants. The purpose of this group discussion was two-fold. First, given the busy schedule of the conference, this session provided participants a chance to reflect on the discussions and summarize some of the key take home messages from the two-day program. Second, it was a chance for the group to suggest key topics where additional cross-country research is needed, the focus of which could be the driving theme for the next ReSAKSS-Asia event. Some of the key take home messages and future topics are summarized below.

Key take home messages as summarized by participants.

- Agriculture is declining in importance relative to the industrial and service sectors among most Asian economies. It is also declining as a share of incomes in rural households that increasingly diversify into rural nonfarm income sources.
- Transformation in agriculture is also a process of moving from low to high value crops and the shift from crop to non-crop sectors such as aquaculture and livestock. High value crops are going to increasingly become important when more Asian people enter the middle class. Governments must partner with the private sector to support improvements in safety, quality and traceability of these products to help small farmers to participate in these value chains.
- Migration is changing rural labor markets and driving up rural wage rates. Mechanization is increasingly used to substitute for human labor in many agricultural practices. The private sector is playing the central role in mechanization through the development of service hiring markets. Governments can facilitate private sector-led mechanization through reform, liberalization and market coordination.
- The knowledge sharing mechanism of different policy practices and experiences is important, and ReSAKSS-Asia should continue to play this role to promote efficient and effective policies for continued transformation in agriculture and rural economy ensuring that all households, including smallholders and the landless, benefit.

Future research topics and direction.

- Transformation is inevitable and is likely good for many, but there are also losers. We should consider at what costs transformation has come and what happens to those that are unable to integrate well in a transforming economy, including the policies needed to support them.
- The usage of mechanization is increasing throughout the region. A clearer understanding of how machine services and rental markets work is needed and how best to support them. Small farm sizes are likely to persist so this area of research would be relevant for nearly all countries in the region.
- Aquaculture development is taking place in many countries across Asia with some having more success than others. Some lessons were shared but this sector is likely to continue to expand and additional research would be warranted.
- Many countries have at different times put in place a variety of subsidies. Some are still in place while many have also been scaled back or eliminated. What has been countries experiences with pulling back subsidies and their successes and failures?
- The conference highlighted a number of value chains that have been successful but it may be useful to take a closer look at the comparative advantage of certain sectors across countries, areas of future growth, and sectors where the market is saturated.
- Both internal and international migration seem to be important drivers of transformation by changing rural labor markets. The conference provided some examples but it is not entirely clear of the impacts that migration is having on those that are left behind.



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Appendix I: Conference Agenda

TUESDAY, DECEMBER 12 (DAY 1)

Moderator: Suresh Babu, Senior Research Fellow, IFPRI

8:00 – 8:45 **REGISTRATION**

8:45 – 9:00 **GOAL AND OBJECTIVES OF DAY ONE:** Moderator

9:00 – 10:30 **OPENING SESSION** (Chair: Suresh Babu)

Welcome remarks

- *Jariya Suthichaiya, Deputy Permanent Secretary, Minister of Agriculture and Cooperatives, Thailand*
- *Jeffrey Spence, USAID Deputy Mission Director, Regional Development Mission to Asia*
- *Nipon Poapongsakorn, Distinguished Fellow / former TDRI President*
- *Hermann Waibel, TVSEP Coordinator*
- *PK Joshi, Director, IFPRI Asia*

Keynote address

[“Rural Incomes in the Context of Structural and Agricultural Transformation”](#)

Speaker

David Dawe, FAO Senior Economist, Bangkok, Thailand

Q&A and Discussion

10:30 – 11:00 **COFFEE/TEA BREAK AND NETWORKING**

11:00 – 12:00 **PANEL SESSION 1:** Policymaker Panel Discussion on Challenges in Agricultural and Rural Transformation and the Role of the Government (Chair: *Ammar Siamwalla, Distinguished Fellow/ former TDRI President*)

Panelists

- *Dang Van Cuong, Director, Communication and International Cooperation, Ministry of Agriculture and Rural Development, Vietnam*
- *Masuma Younus, Deputy Research Director. Agriculture Policy Support Unit, Ministry of Agriculture, Bangladesh*
- *Vinoth Vansy, Director, Economic Integration Division, Ministry of Agriculture and Forestry, Lao PDR*
- *Chantanond Wannakaihon, Deputy Secretary General, Office of Agricultural Economics, Thailand*
- *Tin Htut Oo, Chairman, Agriculture Group, Yoma Strategic Holdings*

Facilitator

Duncan Boughton, Professor, Michigan State University–Myanmar

12:00 – 13:30 **PLENARY SESSION 1:** Country Experiences with Agricultural and Rural Transformation: A National Perspective (15 minutes each presenter; Chair: *PK Joshi, Director, IFPRI Asia*)



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[Agricultural Transformation in Vietnam](#)

Dr. Nguyen Duc Loc, Director, Center of Agricultural Policy in South Vietnam

[Transformation of Thai Agriculture in the last three decades](#)

Nipon Poapongsakorn, Distinguished Fellow and Kamphol Pantakua, Researcher, TDRI

[Structural Transformation and Growth in Indonesia](#)

Gracia Hadiwidjaja, Center on Food Security and the Environment and Economic Research Institute for ASEAN and East Asia.

[India 1960-2010: Structural Change, the Rural Non-Farm Sector, and the Prospects for Agriculture](#)

Alwin D'Souza, Arizona State University

[Structural Transformation in Rural Bangladesh: Is it Market-Led?](#)

Minhaj Mahmud, Senior Fellow, Bangladesh Institute of Development Studies and Binayak Sen, Senior Research Fellow, IFPRI

[Q&A and Discussion](#)

13:30 – 14:30 **LUNCH**

14:30 – 15:30 **PLENARY SESSION 2:** Country Experiences with Agricultural and Rural Transformation: An Assessment from the Bottom up (15 minutes each presenter; Chair: *Ulrike Grote, Professor, Leibniz University Hannover*)

[Infusing Growth: Rural Agricultural Investments and its Impact on Agrarian Development in Northeast Thailand](#)

Priyanka Parvathi, Post-doctoral researcher, Leibniz University Hannover, TVSEP

[Agricultural Investment and Structural Change: Evidence from Rural Vietnam](#)

Thanh Nguyen, Assistant Professor Leibniz University Hannover, TVSEP

[Agricultural Transformation in Eastern India: Lessons Learnt and Future Opportunities](#)

Ranjit Kumar, National Academy of Agricultural Research Management, India

[Q&A and Discussion](#)

15:30 – 16:00 **COFFEE/TEA BREAK AND NETWORKING**

16:00 – 17:15 **PARALLEL SESSION 1A:** Modern Farm Management Technologies and Their Adoption (15 minutes each presenter; Chair: *Kevin Chen, Head of East Asia and Central Asia Office, IFPRI-Beijing*)

[Modern farm management technologies and their adoption](#)

Isara Vongkusolkiet, Chairman of Mitr Phol Group

[Precision agriculture in smallholder systems. From innovation to evidence](#)

Alejandro Nin-Pratt, Senior Research Fellow, IFPRI

[Pursuing Sustainable Productivity with Millions of Smallholder Farmers](#)

Zhenling Cui, China Agricultural University

[Q&A and Discussion](#)

16:00 – 17:15 **PARALLEL SESSION 1B:** Economic linkages and Migration (15 minutes each presenter; Chair: *Hermann Waibel, Leibniz Universität Hannover*)



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[Does Migration Support Technology Diffusion in Developing Countries? Evidence from Thailand, Vietnam, Laos, and Cambodia](#)

Michael Hübler, Junior-Professor, Leibniz Universität Hannover, TVSEP

[Rural-Urban Migration and Integration of Labor Market in India](#)

Amitabh Kundu, Visiting Fellow, Research and Information System for Developing Countries (RIS), New Delhi

[Migration, Employment and Food Security in Central Asia: the case of Uzbekistan](#)

Bakhrom Mirkasimov, Senior Lecturer, Westminster International University, Tashkent

17:15 – 17:30 **CLOSING REMARKS** (*Suresh Babu*)

18:00 – 20:00 **GROUP PHOTO, RECEPTION, AND DINNER**



WEDNESDAY, DECEMBER 13 (DAY 2)

Moderator: Hermann Waibel, Leibniz Universität Hannover

8:30 – 9:00 **REGISTRATION**

9:00 – 9:15 **SUMMARY OF DAY 1 AND GOAL/OBJECTIVES OF DAY 2:** Moderator

9:15 – 10:30 **PARALLEL SESSION 2A:** Mechanization and the Role of Evolving Machine Services (Chair: Mr. Somsak Mauthorn, Senior Executive Vice President of Siam Kubota Corporation)

[The rapid rise of agricultural mechanization in Myanmar](#)

Ame Cho, Research Associate, Centre for Economic and Social Development

[Agricultural Mechanization: Policy Lessons from Bangladesh](#)

M. A. Sattar Mandal, Emeritus Professor, Bangladesh Agricultural University

[Effect of Labor Movement on Agricultural Mechanization in Cambodia](#)

Sim Sockcheng, Research Fellow, Cambodia Development Resource Institute

[Custom Hiring and its Impact on Paddy cultivation in Sri Lanka](#)

Melvin Samarasinghe, Director, Agfour Engineering

Q&A and Discussion

9:15 – 10:30 **PARALLEL SESSION 2B:** Rural Labor Markets, Migration, and Economic Opportunities for the Landless (Chair: Emily Weeks, USAID)

[Go or Stay: Inter-relation between Migration and Agriculture Policies in Cambodia](#)

Vathana Roth, Research Fellow, Cambodia Development Resource Institute

[Migration, Microfinance and the Mechanized Service Market: Explaining the Puzzle of Landless Tenancy in Rural Bangladesh](#)

Binayak Sen, Senior Research Fellow, IFPRI

[Myanmar Migration in a Time of Transformation](#)

Mateusz Filipski, Research Fellow, IFPRI

[Land Reform and Child Nutrition: Evidence from Kyrgyzstan.](#)

Olga Shemyakina, Associate Professor, Georgia Tech University

Q&A and Discussion

10:30 – 11:00 **COFFEE/TEA BREAK**

11:00 – 12:30 **PANEL SESSION 2:** Attracting Private Sector and Promoting Agriculture, Agribusiness and Exports (Chair: Abdul Wajid Rana, Country Program Director, IFPRI-Pakistan)

Panelists

- Syed Mahmudul Huq, Bangladesh Shrimp and Fish Foundation
- Steven Bartholomeusz, Food Industry Asia
- Saumil Shah, CEO, Energaia
- Somsak Mauthorn, Senior Executive Vice President, Siam Kubota Corporation

Facilitator

Shahidur Rashid, Senior Research Fellow, IFPRI-New Delhi



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- 12:30 – 13:30 **LUNCH**
- 13:30 – 14:30 **PARALLEL SESSION 3A: Domestic Markets for Smallholder High-Value Agriculture** (Chair: Nazim Ali, USAID- Pakistan)
- [Domestic markets for smallholder high-value agriculture: Case of Dairyhome](#)
Pruitt Kerdchoochuen, Managing Director, Dairyhome, Thailand
- [The Emerging 'Quiet Revolution' in Myanmar's Aquaculture Value Chain](#)
Ben Belton, Assistant Professor, Michigan State University-Myanmar
- [Aquaculture Growth in Bangladesh: Enablers, Impacts, and the Path Ahead](#)
Shahid Rashid, Senior Research Fellow, IFPRI-New Delhi
- [How to Promote Transformation and Upgrading of Agriculture by E-Commerce- ShuYang Case from China](#)
Hongdong Guo, Chair and Professor, Department of Agricultural Economics and Management of Zhejiang University, China
- Q&A and Discussion
- 13:30 – 14:30 **PARALLEL SESSION 3B: Expanding Regional and Global Markets** (Chair: Isriya Nitithanprapas, Kasetsart University)
- [High Value Vegetables for High-End Market, GAP](#)
Chusak Chuenprayot, CEO, K.C. FRESH, Thailand
- [Assessing Myanmar's Agri-food Trade Comparative Advantages](#)
Kevin Chen, Senior Research Fellow and Head of East Asia and Central Asia Office, IFPRI-Beijing
- [Broiler Industry Development in Thailand](#)
Phunjasit Chokesomritpol, Viroj NaRanong and Nipon Poapongsakorn, TDRI
- Q&A and Discussion
- 13:30 – 14:30 **PARALLEL SESSION 3C: Regional Pulse Trade** (Chair: Ye Aung, Rice Technologist, Myanmar)
- [Should Myanmar Enter into a Long-term Pulse Export Agreement?](#)
Avinash Kishore, IFPRI-New Delhi
- [Agricultural Exports, Price Volatility and Monopsonistic Markets: An Analysis of the Myanmar - India Pulses Trade](#)
Duncan Boughton (MSU-Myanmar) and Cho Cho San (MOALI/DOP)
- [Kidney Beans Value Chain and Export Capacity in the Kyrgyz Republic](#)
Kanat Tilekeyev, Senior Research Fellow, University of Central Asia
- Q&A and Discussion
- 14:30 – 15:00 **COFFEE/TEA BREAK AND NETWORKING**
- 15:00 – 15:15 [Introduction to TVSEP panel data base](#)
Rattiya S. Lippe, TVSEP research manager



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- 15:00 – 17:00 **FACILITATED GROUP DISCUSSION:** Conference Synthesis, Way Forward (Facilitator, *Xinshen Diao, Deputy Division Director, IFPRI*)
- 17:00 – 17:15 **CLOSING REMARKS**
Hermann Waibel, TVSEP
Nipon Poapongsakorn, TDRI

THURSDAY, DECEMBER 14 (DAY 3)

Field Trip to Charoen Pokphand (CP) Company Factory

- 5:30 Breakfast: Hotel breakfast buffet will open early for field trip participants
- 6:00 Meet in the Dusit Thani Hotel lobby (international participants, breakfast buffet will open early)
- 6:15 Depart for Nakhon Ratchasima Province
- 10:00 Arrival at Charoen Pokphand (CP) Company Factory
- 12:00 Lunch at CP Company
- 14:00 Leave for Bangkok
- 18:00 Arrive at Bangkok



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