

# POLICY BRIEF

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## Ensuring Urban Food Security in ASEAN

Food Security Expert Group Meeting, Singapore  
4–5 August 2010



This synthesis provides the main findings of the Food Security Expert Group Meeting which was convened by the RSIS Centre for Non-Traditional Security (NTS) Studies in Singapore on 4–5 August 2010. The Meeting brought together experts from multilateral and bilateral agencies, international and regional organisations, universities, agribusiness firms and relevant Singapore government agencies. The Meeting aimed to examine the context of urban food security relative to global food security and rural food security; explore the development of an ASEAN (Association of Southeast Asian Nations) Food Security Management Information System; assist in developing a research agenda on urban food security; and identify possible roles for Singapore in the global food system.

## Urban Food Security

There is emerging consensus that the concept of food security, which has had a predominantly rural bias, needs re-conceptualisation to accommodate the need to feed a growing urban population. According to UN-HABITAT, the UN agency for human settlements, the 21st century will be the century of urbanisation. The majority of the global human population is now residing in cities, with the accompanying effects and consequences, particularly on food consumption patterns. The food crisis in 2007–2008 and the resulting food riots that occurred in cities all over the world exposed the vulnerability and fragility of the current global food system and highlighted the increasing problem of urban food security. Urban households were among the hardest hit by the crisis as they saw their purchasing power decline drastically. Though aggregate world food availability was relatively good during that period, access to that food by the urban poor was severely compromised.

The urban environment, particularly in developing countries, presents several challenges vis-à-vis food security that differentiate it from the countryside and which potentially render its residents more vulnerable to the global food supply system and to price fluctuations resulting from supply discontinuities. First and foremost, urban residents have to purchase almost all of their food as well as other goods and services. Also, because of increased incomes, there is a higher demand for more expensive sources of nutrients such as meat, fruit and vegetables. Due to the shift from staples such as sorghum to millet, and maize and root crops to rice and wheat in urban areas, the urban poor may be more vulnerable than their rural counterparts to variations in the international market since rice and wheat, along with maize, tend to be internationally traded items. Many urban residents are also more vulnerable to global economic events since many of them depend on overseas remittances, exports, employment, Foreign Direct Investment, etc. Because urban areas are centres of economic opportunity, there is a greater percentage of women working outside the home which may mean they have less time and more difficulty caring for their children.

Because of greater exposure to advertising and easier access to supermarkets, urban dwellers often consume more processed and fast-food. The urban poor live in crowded living conditions with poor quality housing, poor to non-existent garbage disposal systems, unsafe drinking water, and non-functional or non-existent sewage systems. Lastly, jobs of the urban poor are casual, insecure, uncertain, low-paying and vulnerable to outside forces.

The existence of such factors thus reinforces the multidimensional nature of food security. Food security whether in a rural or urban setting results from a complex interplay of forces and is more than just a question of supply and demand. It is widely accepted that there are four main dimensions to food security: availability, physical access, economic access and utilisation. While each dimension is necessary for overall household food security, they may have different weightings in a rural setting as compared with an urban setting and even across countries with different income and net food trade statuses.

Two types of trends impact on urban food security. Mid- to long-term trends include demographic changes, diversification of diets, poor investments in agriculture, unfriendly policies toward farmers, climate change, fragility of agro-ecosystems, and the declining number of farmers. Immediate trends include disruptions in food supply, spiralling input costs and competition from the energy sector. While recognising the fact that long-term trends have a direct impact on more agriculture-based economies, they have short-term effects on food importing countries like Singapore.

## The Role of Urban and Peri-Urban Agriculture

There is a growing body of evidence that demonstrates the role of urban and peri-urban agriculture (UPA) in helping to reduce urban poverty and food insecurity and enhance urban environmental management. This is due to the following: UPA is integrated into the urban economic and ecological system, i.e., it is embedded in, and interacting with, the urban ecosystem; it

contributes to local economic development, poverty alleviation and social inclusion of the urban poor, particularly women and migrant communities, as well as to the greening of the city and the productive reuse of urban wastes; it can help promote peaceful communities through agro-tourism and leisure activities; it is energy saving thanks to lower transport and storage costs; it responds to market demands; and it is a good anchor for strengthening urban-rural linkages by combining ecological, social and economic contributions. However, UPA comes with new global challenges, among them climate change, the rapid speed of urbanisation, an increasing social divide between the rich and poor, and increasing urban poverty.

UPA in *developed* countries has seen significant growth in recent years thanks to high value-added agriculture, the promotion of the 'garden city' concept, the expansion of community gardens and roof top planting and the use of UPA to promote environmental sustainability. On the other hand, UPA in *developing* countries is less pronounced but has great potential for growth. The success of UPA in cities such as Hanoi, Shanghai, Beijing, Mexico City, Dakar or Accra has shown how urban farming can contribute to poverty reduction, food security, improvements in nutrition, increased income, environmental protection and increased awareness of the importance of agriculture through on-site education. Political will and the appropriate support mechanisms are key success drivers.

## The 'Rurbanisation' Concept

Given the evident environmental impact that urbanisation, industrialisation and development have had on the global eco-system and the current, not to mention future, negative impacts of climate change, there is a need to re-examine the development agenda and the relationship between the urban and the rural. One should view the rural and the urban as a single space — not two spaces, as is now the case. 'Rurbanisation' adopts such a view. According to its author, it is a re-conceptualisation of the current western developmental model and the destructive lifestyle of over-production and consumption.

Rurbanisation is neither rural nor urban in approach; it is both. A rurban settlement is relatively self-contained, developed within an area of one kilometre in diameter and surrounded by farms with various crop plantations farther away. Every settlement is to be relatively energy autonomous by using renewable technologies. Water, sewerage and waste recycling are essential components of the rurban economy. Information and communications technology (ICT) and road linkages allow for development of sustainable eco-regional economies at local levels which would eventually evolve into larger integrated

regional economies. Rurbanisation does not dismiss the role of cities and maintains that they remain centres of excellence for medical treatment, academia and teaching, technological and industrial innovation, access to international finance and information and planning. However, other functions of cities can be decentralised thanks to technology and infrastructural developments. The rurbanisation model takes into account the vertical floor space needed per person as well as the horizontal floor space.

## The Role of the Private Sector

The private sector is a vital component of the global food supply chain and therefore a key player in food security. Agribusiness firms dominate in all segments of the supply chain; from input suppliers, to growers, processors, transporters, distributors and ultimately to consumers (see Figure). Though US and European firms feature heavily at all levels, ASEAN countries, particularly Thailand, Indonesia and Malaysia have emerged as dominant players in global agribusiness and the global food supply chain.

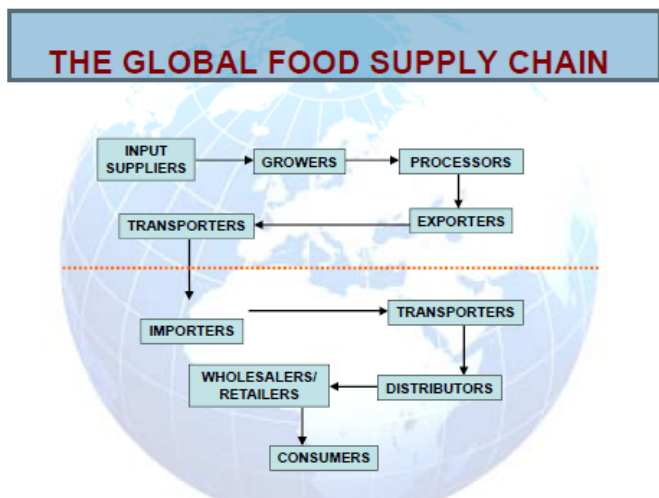
Key exporters in the global food market are primarily land-rich countries such as the US, Brazil, Argentina and Canada. However, no country or region is ever self-sufficient in all food commodities. All remain reliant on the global market to sell their surpluses and buy the commodities that they themselves do not produce. For example, while ASEAN boasts surpluses of rice, fish, fruit, sugar and vegetable oil, it lacks supplies of maize, meat, dairy and vegetables, for which it depends on the global food market. ASEAN is therefore a surplus net food exporter as well as an importer.

Just like any other region in the world, ASEAN faces multiple threats to its food security: climate change; resource scarcity; biofuel production; plant diseases; farmers' limited access to assets, knowledge, affordable credit and risk management mechanisms; overfishing; and marine pollution. In this context, the global food supply chain helps to ensure food security in the region by: consolidating production from many sources; helping boost yields of small farmers; investing in sophisticated, reliable logistics; supplying quality foods to populations; investing in R&D towards producing better quality and higher quantities of food; and sharing public information.

As the dominant player in the global food supply chain, the private sector can therefore contribute in a number of ways to safeguard the global food supply chain and promote food security in the region. The private sector can do this by: preventing and deterring terrorist/pirate attacks on supply chains (shipping, shipping lanes); sharing best/good practices in post-harvest and storage management; integrating more smallholder farmers into the global supply

chain; investing in neighbouring countries with high potential, i.e., Cambodia, Vietnam, Myanmar and Laos; and addressing the potential for biological risks and epidemics in the region. The private sector can also be a key influence on governments to eliminate trade barriers (tariffs and non-trade barriers), and to increase public R&D spending for agriculture and food production.

Figure: An illustration of the global food supply chain



Source: Dy, Rolando, 2009, *Food for Thought: How Agribusiness is Feeding the World*, Philippines: University of Agriculture & the Pacific, p. 258.

## ASEAN Integrated Food Security Management Information System

At present, ASEAN and its Plus Three members (China, Japan and South Korea) are all party to a comprehensive and growing regional food security system called the ASEAN Food Security Information System (AFSIS) which is currently in its second project phase (2008–2012). Its objectives are to facilitate food security planning and implementation through systematic collection of data and information, to analyse and disseminate information on food security and to support the ASEAN Plus Three Emergency Rice Reserves (APTERR) effort. This project is primarily funded by the Ministry of Agriculture, Forestry and Fisheries (MAFF) of Japan and is being implemented by the Ministry of Agriculture and Cooperatives (MOAC) of Thailand.

While there have been successes in getting AFSIS up and running, there remain unresolved problems with the system. At present, AFSIS data is available online for public perusal but is only really used by government officials in policymaking and by academicians for research in food security and agriculture in the region. More importantly, there remains a persistent problem with the quality and reliability of the data, and how the data can be accessed and managed to formulate and influence policy in a timely manner.

A number of approaches have been identified to improve data quality in order to gain a more accurate picture of regional food security. As food security is multi-level (national, household, intra-household) and multi-sectoral in nature, multiple models are required to help identify emerging themes that could affect food availability and the critical themes that are pertinent to policy interventions. National-level food security (NLFS) can be measured using an integrated supply and demand model or separate supply and demand models. However, regardless of method, the core elements to be considered are supply, demand, production, net-stock rundown, final consumption, wastage and intermediate demand. Food supply can be modelled after separate crop acreage and yield models, or production models that take into account the key determining factors of economic factors, agricultural factors, farm inputs and government policies that influence supply. The input of data must be crop specific and classified at farm level and by cropping season. Additionally, the data must be verifiable at some administrative level of planning, for example, district or state divisions. Effective modelling of food supply can be obstructed by incomplete or unavailable data on a certain region or crop type.

Household food demand, meanwhile, can be modelled using either a single commodity model, a set of models with a limited set of commodities, or using complete demand systems analysis. For an accurate model, economic, socioeconomic, demographic and government policy determinants will need to be assessed. However, increased data requirements and the many determinants involved may cause implementation difficulties.

The modelling of food demand will require consideration of government demand, intermediate demand and wastage. An example of food demand modelling is the International Model for Policy Analysis of Agricultural Commodities and Trade (IMPACT) of the International Food Policy Research Institute (IFPRI). The IMPACT model is a comprehensive multi-commodity, multi-country partial equilibrium model which allows for inter-sectoral linkage between agriculture and non-agriculture through growth multipliers. Within this model, variants were created to generate accurate measures of demand for specific resources such as water and other individual commodities such as wheat, rice and livestock.

## Programme & Policy Recommendations

### 1. Think Urban

While there is a strong interdependence between urban and rural areas, the urban dimensions of food security merit distinct attention and focus from national governments. In order to successfully

address the growing problem of urban food security in the face of food price increases, policies and programmes need to better reflect the urban context. Factors of production, technologies, employment and indeed policies which were predominantly aimed at rural populations, must now adapt to address urban situations.

Preparedness measures such as social safety nets and risk management schemes which are particularly important for people in urban areas need to be in place in the event of short-term shocks or natural disasters to help reduce vulnerability.

Urban agriculture is an under-appreciated strategy that could help improve urban food security and therefore needs to be assessed for its costs and benefits. Appropriate support mechanisms such as political, legal, operational and regulatory frameworks would need to be put in place to facilitate urban agricultural activities, move them into the formal economy, and address food safety and health concerns. Further, national governments would also need to frame their national priorities such that the issue of food security is linked to their sovereign duties towards the population, especially in the allocation and appropriation of land for non-agricultural use. There is also a need to reconsider the demarcation of 'hinterland' and city land areas, as most cities are founded on particularly arable land.

## **2. Think Rural**

Because urban and rural lives are intertwined through goods, services and people, efforts to ensure urban food security must also go beyond the city limits. Ultimately, urban food security will continue to depend on rural food security whether within or outside one's borders. Therefore, increasing investments in agriculture, innovation, rural development, infrastructure, markets and financial systems remains paramount in order to ensure an affordable food supply for urban residents and maintain the viability of the countryside. In addition, policies favouring the growing of cash crops over food crops should be re-evaluated as these could have detrimental effects on the diet and nutritional health of rural households and may lead to a dependency on imports of the substituted staples from other regions of the same country or from overseas.

## **3. Think Regional**

Continued efforts toward ASEAN integration can help the region address its food security challenges and therefore members need to commit to long-term programmes. In the wake of the recent food crisis, there is renewed enthusiasm by all member

states towards strengthening the region's capacity to address food insecurity. Now is the time to ride on this momentum and work towards enhancing trade facilitation measures, and harmonising food regulation and control standards and existing food security programmes.

An example of a programme which would greatly benefit from increased investment is the AFSIS. Capacity building and training have been identified as priorities, particularly in the following areas: the development and fine-tuning of data collection techniques, and the use of statistical tools, as well as relevant hardware and software; the development of analytical tools for supply/demand forecast; expert exchange programmes; the strengthening of agricultural statistics staff in member countries; the training of farmers to be real-time data suppliers; the establishment of partnerships with international research institutions, etc. Further, the effectiveness of a food security information system depends on data quality. In order to improve the data quality of the existing information system, an analysis of its weaknesses and limitations must be conducted. One limitation of the current information system is the lack of standardised data. This can be attributed to the absence of a standardised data collection and processing methodology. AFSIS would also benefit from further research in supply/demand elasticity estimation, the establishment of parameters for effective forecasting, household/farm/industry surveys, the documenting of ASEAN intra-food trade and lastly, the development of regional food security indicators at the household, national and regional levels.

## **4. Think Global**

We live in an ever globalising world where countries are more interconnected than ever. As the recent food crisis demonstrated, what happens in one country, whether it is a drought, a delayed monsoon, a pest outbreak, or a trade policy change, can have dramatic repercussions not only within that country but also in other countries as well regardless of their economic status or how closely those countries are associated with the former. For example, because of the concern over the impact of higher rice prices, major exporting countries such as India and Vietnam moved to impose export restrictions to protect their domestic consumers while importing countries especially the Philippines started to panic buy and scramble for supplies. According to one US rice economist, fears of shortages spread and a cumulative price spiral started that fed on the fear itself.

## 5. Think Singapore

Despite Singapore's limited agricultural history and experience, it can play a significant role in regional food security. Its high level of economic development, strategic location, R&D capabilities, technology- and business- friendly environment, and stringent food safety standards allow Singapore to serve as an honest broker and 'neutral mediator' in a number of initiatives. From an R&D perspective, Singapore can be a knowledge platform, providing technical expertise, and laboratory and market research. By harnessing the knowledge and expertise of its vibrant R&D community from both the public and private sectors, it can take the lead in areas such as improving seed varieties, variety selection and development of seed banks for vegetables, farming systems and post-harvest technologies for vegetables, breeding and farming systems for fish, and waste treatment systems. Moreover, the Singapore agency tasked with setting food safety standards can act as a technical referral point for other ASEAN member countries. Singapore can also facilitate and inspire technology transfers, best practices, business models and standards. Such initiatives will allow Singapore to help empower rural farmers in its 'hinterlands' and improve their productive capacity.

One of the oft-cited reasons for declining global agricultural productivity is the underinvestment in rural infrastructure and agricultural innovation. Given Singapore's role as a regional and stable financial centre, it can also serve as a catalyst for the entry of venture investment funds in agriculture in the region. Further, Singapore's efficient port and logistics and its proximity to major commodity producing and consuming countries could also help it establish itself as a regional processing and distribution hub.

By helping others to help themselves, Singapore can help assure not only its own food security but contribute to that of the rest of the region.

## Conclusion

The Food Security Expert Group Meeting, through a series of presentations and intensive focus group discussions examined the emerging concerns related to urban food security. It also explored the development of the AFSIS and discussed ways in which it could be made more effective.

With more people worldwide living in urban areas, there was a consensus among participants of the Meeting that urban food security has become one of this century's key challenges. In order to feed the ever increasing urban population, it is important that cities

themselves become food producers to complement food supplied from the hinterlands. Concepts like UPA and rubanisation offer a way to not only feed urban masses but also make cities vibrant and self-sustaining entities. Emphasis must also be given to early warning systems to inform populations of any impending food crisis and shocks. To this end, the AFSIS must be strengthened through improvements in areas such as data collection, distribution, involvement of farmers as real-time data suppliers, modelling and forecasting capability.

Singapore also has a significant role to play in regional food systems. Specifically, Singapore can utilise its comparative advantages in areas such as science and technology, business models and practices, food standards, logistics, etc., to enable food security in Southeast Asia. The contribution of meetings and conferences such as this should not be overlooked. They become increasingly important in this age of rising food insecurity. Besides facilitating dialogues and discussions among a wide variety of stakeholders, the Food Security Expert Group Meeting has generated many ideas on how to meet the challenges posed by food insecurity.

## About the Authors

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In 2009, the Centre was chosen by the MacArthur Foundation as a lead institution for the MacArthur Asia Security Initiative, to develop policy research capacity and recommend policies on the critical security challenges facing the Asia-Pacific.

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