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Given today's challenges, a generalised concept of food security consisting simply of supply and demand is no longer adequate for planning anticipatory and response strategies. A more holistic approach is required, one that is broader in scope and takes into consideration all four basic dimensions of food security: availability, physical access, economic access and utilisation.

Too often have government, professional and academic communities maintained disciplinary boundaries when addressing such complex problems. Now is the time for all communities to come together to work towards addressing one of the most pressing challenges of this century. This conference is a step in that direction.

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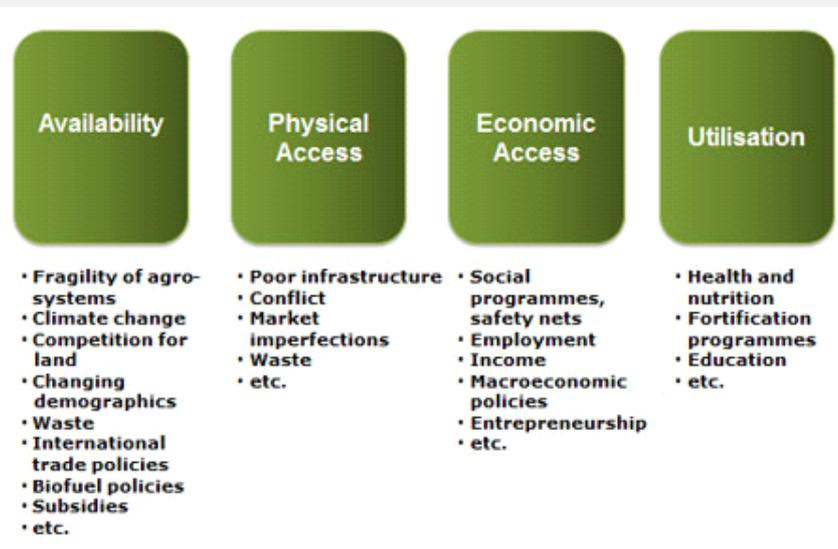
## The Challenge of Feeding 21st-century Asia: A Recap

Food security underpins sustainable development. This has been the case since human societies settled on the fertile river valleys and deltas of the world. It is thus an issue of great importance for Asia, which has more than 60 per cent of the world's population and some of the world's fastest-growing economies. According to a 2010 UN report, the region is home to 6 of the world's 10 most populous countries, and 15 of the 30 largest urban agglomerations. No wonder then that the region commands a large slice of world food demand.

For Asia, addressing food security is not only necessary, it is also a matter of some urgency. Despite remarkable success in reducing poverty over the years, the region still suffers from food insecurity. The Food and Agriculture Organization of the United Nations (FAO) reports that over 60 per cent of all the undernourished in the world – 578 million out of 925 million – live in this part of the world.

Two recent pronouncements add to Asia's food security concerns. The first is the Asian Development Bank's (ADB) claim that spiralling food prices will drive more people into poverty. The second is the UN's assertion that the world's population may exceed the 9 billion projected for 2050. This is disquieting news for Asia, which already has 50 million additional mouths added per year.

Figure 1: The four basic dimensions of food security and issues of concern.



Increasing food production, and ensuring the availability of affordable food, is therefore of vital importance – and this will be no easy task, especially for Asia. History has shown that as countries move up the economic development ladder, the proportion of those involved in farming inevitably declines. This is happening in Asia where, with its large population base and small farms, fears include the ageing of farmers and increasing gender imbalance due to the migration of male farmers to cities. This decrease in farming population is compounded by declining availability of arable land, concerns over water and increased demands for environmental stewardship.

Thus, feeding (and nourishing) a larger, more urban and increasingly affluent Asian population sustainably and equitably will be an

unprecedented challenge and will require a multifaceted and integrated global strategy. The more obvious solution of increasing food production is only one among many strategies needed to meet this challenge. In order to address food security effectively, we need to look at the whole range of issues at the urban-rural interface in each of the four basic dimensions of food security, as elaborated below.

### Food Availability

The first dimension of food security is food availability, made up of food production, imports and stockpiles. As the urban-rural disconnect widens and as more people live in cities, imports will be key to ensuring availability, with the food then distributed through organised retail chains such as those that now exist in the form of ubiquitous supermarkets in cities.

When the threats to food security are not expressed unexpectedly – such as when there are crop failures or transport disruptions due to natural disasters or extreme weather events – both domestic production and imports ensure supply to the consumer. When events precipitate sudden food insecurity, then governments commonly resort to stockpiles.

Even under the best circumstances, to keep up with population growth and changing dietary demands, R&D is challenged to generate the knowledge and technologies to increase agricultural production and productivity. Climate change, crop loss and food wastage are additional drivers of insecurity in the system.

## Physical Access

The second dimension is physical access to food, expressed through the distance that most consumers now face from the sources of the raw materials for processed food. Grains are now shipped thousands of kilometres from the 'breadbaskets' or 'rice bowls' of the world to their importing countries. Even within countries, it is common to see this delinking of production areas from the major consuming areas.

All this presents opportunities for trade and for the use of technology in, for example, the transport of food but it also increases vulnerabilities in the form of losses during transport, discriminatory policies, unfair trade practices and cumbersome regulatory regimes.

## Economic Access

The third dimension of food security is economic access to food, which is a challenge for rich as well as poor nations. A common position taken in food debates is that there is sufficient food, but the problem lies in its distribution, which implies limitations in terms of physical and/or economic access.

Specifically, economic access deals with the capacity to gain access to available food, especially by vulnerable populations in societies with great disparities of wealth. Lower income groups spend a higher proportion of their incomes on food (some as much as 80 per cent) compared to higher income groups (as little as 15 per cent), which suggests that food is relatively less affordable for the poor. Even in economically well-endowed societies such as Singapore, where there is plentiful food in supermarkets, there are still those without economic access to food.

What can be done to ameliorate the problems of inadequate economic access? There is a need for governments and civil society to be more proactive in tackling this aspect of food security.

## Food Utilisation

The fourth dimension is food utilisation. It includes aspects such as food safety, nutrition and household treatment of food. The mantra among dietitians is that it is not about having enough food but about whether a right balance of different kinds of food is being eaten. Eating rice alone is not enough to supply many of the essential minerals and vitamins to sustain a healthy life. Hence, much research has been invested in biofortification programmes of various forms.

Another aspect of food utilisation is food safety, part of which results from the need to preserve 'freshness' in foods as it is transported from source to consumer. Technology and policies play key roles in ensuring that appropriate systems are in place to establish safety levels and monitor compliance with safety standards. However, food safety starts at the farm level and as consumers become more sophisticated, 'safe' production methods are increasingly being demanded by consumers.

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## ICAFS' Contribution to the International Discourse and Consensus for Action

The ICAFS 2011 programme is purposely based on the four basic dimensions of food security (described above) and the added driver of investment. The aim is to present a broader view of the range of issues involved in ensuring food security, with a particular emphasis on the dependencies between rural and urban environments.

### High-level Forum on Food Security

An introductory overview session will enunciate the status of food security in Asia, how it relates to global food security, and the potential roles of the public, private and civil society sectors in meeting the challenges. In this Forum, experts with experience in high-level discourse on food security will share their thinking from an ASEAN and a global perspective; and also address the link between the policies and actions of developed countries, and the food situation in developing countries. This Forum will also raise



*Urbanisation and changes in consumption trends mean that access to sufficient and nutritious food will continue to be on the food security agenda for the foreseeable future, and there is an urgent need for the relevant sectors to come together to explore*

what is often not considered an integral part of such discourse, the rights of the poor to food and why the poor (and commonly, the hungry and under-nourished) must be part of the solution and not part of the problem in food insecurity.

*viable solutions.*

*Credit:IFPRI/flickr.com.*

ICAFS 2011 has been fortunate in attracting high-calibre experts – Dr Surin Pitsuwan, current ASEAN Secretary-General and former Foreign Minister of Thailand; Dr Fan Shenggen, Director General of the International Food Policy Research Institute (IFPRI); Dr Franz Fischler, former European Union Commissioner for Agriculture, Rural Development and Fisheries; and Father Francis Lucas, Chair of the Asian NGO Coalition for Agrarian Reform and Rural Development (ANGOC), a group dedicated to addressing the needs of the poor.

### **Session 1: The Scope of Food Security in Asia**

This session aims to set a theoretical yet pragmatic framework for the topic of Asian food security and the need to build alliances that encompass a range of viewpoints from often conflicting sectors.

The interdependence of urban and rural populations will be analysed by the team from Nanyang Technological University's RSIS Centre for NTS Studies and National Institute of Education (NIE) led by Professor Paul Teng. The paper will lay out why Singapore, a typical urban city-state, needs to be actively involved in the sources of its food supply.

ICAFS 2011 is also privileged to have expert speakers such as Professor Rudy Rabbinge, a pioneer in the field of theoretical production ecology and immediate past chair of an international science panel which oversees the Consultative Group on International Agricultural Research (CGIAR), the umbrella body for 15 international agricultural research centres. Prof. Rabbinge will discuss his experience in stewarding this global research network. He will also provide insights into new R&D contributions to increasing food availability.

The Asian food security conundrum of balancing increased production with biodiversity conservation will be addressed by an expert at the frontline of the debate – Dr So Nam, Director of the Inland Fisheries Research and Development Institute, Cambodia. He will illustrate this tension in priorities through the issue of freshwater fisheries in Lake Tonle Sap, the largest freshwater body in the ASEAN region.

The final paper of this plenary session highlights the congruence between entrepreneurial opportunities and food security, and shows how 'big business' can play a role in partnerships to assure food security. It will be delivered by Ms Kavita Prakash-Mani who heads the Food Security Agenda for Syngenta International, a global multinational involved in modern agricultural inputs.

### **Session 2: Making More Food Available – Promoting Sustainable Agricultural Production**

This session addresses the supply-side of food security. Here, raising farm productivity is the core issue, whether by accessing or increasing inputs, improving seed varieties or employing better farm management practices.

Dr T.J. Higgins, a recognised development scientist with much experience in Africa and Asia, will share how it is possible to have a 'doubly green' revolution, in which crop yields can be increased without damaging the environment. Dr M.V. Gupta, a pioneering fish scientist from India who was awarded the World Food Prize in 2005, will examine issues related to meeting the need for more fish in the face of declining wild fish catches. Urban and peri-urban agriculture and its impact on food security for urban populations will be reviewed by Professor Cai Jianming of the Chinese Academy of Sciences.

Dr Harvey Glick of Monsanto Company will discuss the important role that the private sector has played in the past decade to foster research in biotechnology, especially the breeding of crop traits which address some of the major constraints to raising crop yields and reducing losses.

### **Session 3: Improving and Ensuring Access to Food**

Economic and physical access to food is of particular relevance to Asia since a growing proportion of its population now live in cities. These urban dwellers have limited capacity to produce their own food; they purchase almost all their food. As the 2007–2008 food crisis and recent events in the Middle East have demonstrated, urban households can be among the hardest hit as their purchasing power declines.

The impact of economic and agricultural policies on access to food by more vulnerable segments of society will be addressed by Ms Atsuko Toda of the International Fund for Agricultural Development (IFAD). The oft-debated topic of the financialisation of food commodities and its effect on food prices will be explored by Mr Santitarn Sathirathai and Mr Kun Lung Wu of Credit Suisse.

In addition, this session will look at the role of supermarkets, modern supply chains and the global food distribution ecosystem vis-à-vis the small farmer (Professor Thomas Reardon of Michigan State University, US) and agribusiness groups (Professor Rolando Dy of the University of Asia and the Pacific, Philippines).

## Session 4: Food Utilisation Aspects of Food Security – Ensuring Health and Nutrition

Food utilisation is an oft-neglected area in many food security discussions. The urban poor, in particular, are subject to crowded living conditions with poor quality housing, unsafe drinking water, and non-functional or non-existent garbage disposal and sewage systems, which could affect their nutritional status in the form of malnutrition and poor health.

Further, urban residents often face time constraints, are more exposed to advertising and have easier access to supermarkets and fast-food vendors. As a result, they often opt for more processed and prepared foods, which mean higher intake of saturated and total fat as well as sugar, and lower intake of fibre. This diet, together with the more sedentary urban lifestyle, increases the risk of chronic diseases such as diabetes and obesity.

Identifying vulnerable populations poses challenges for methodology, an issue which will be addressed by Mr John Aylieff and Mr Michael Sheinkman of the World Food Programme. Biofortification and emerging approaches to improving nutrition will be examined by Dr Gerard Barry of HarvestPlus. Dr Barry is currently based at the International Rice Research Institute (IRRI).

The effects of food security research, policy and programmes on nutrition security will be explored by Dr Jintana Yhounng-Aree of Mahidol University, Thailand. Ms Shashi Sareen of the FAO will share her insights on food safety, with particular focus on safe food production and processing.

## Session 5: Appropriate Investments to Match Urban Food Security Needs with Areas of Surplus

To assume its role as an engine of growth, development and poverty alleviation, the agricultural sector itself needs to grow. If the developing countries of Asia are to follow a similar path to development as today's developed countries, they should create conditions for a gradual increase of investments in primary agriculture, upstream and downstream sectors, and rural infrastructure.

Current trade policies and their impact on food security will be explored by Mr Raul Montemayor of the Federation of Free Farmers Cooperatives, Philippines. 'Land grabbing', a phenomenon that is on the rise as wealthier countries try to ensure food security for their own populations by acquiring farmland in developing countries, will be examined by Mr P.K. Hangzo of the RSIS Centre for NTS Studies, Singapore.

Dr José Geraldo Eugênio de França of the Brazilian Agricultural Corporation (EMBRAPA) will relate the experience of an emerging economy such as Brazil in transforming its agricultural sector. The opportunities for emerging markets to become players in the global food supply chain will be addressed by Dr Keith Dawson, Vice President of the Scottish Society of Crop Research, UK.

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## Conclusion

### Capstone Session: Making a Statement to the International Community on Asian Food Security

The conference will conclude with a session that will bring the diverse viewpoints and recommendations arising from the various presentations and discussions together. It will attempt to answer the following questions:

- What are the immediate policy, technical or other interventions needed to improve food security in Asia?
- How can net food importing countries (such as Singapore) contribute to the stabilisation of food availability, access and utilisation globally and in Asia?

It is not by chance, though it may seem paradoxical, that an urban city-state such as Singapore is convening a meeting on food security. As a small country with limited natural resources, Singapore imports over 90 per cent of the food requirements of its 4.9 million inhabitants.

Singapore's critical food challenge is to ensure supply resilience and supply adequacy so as to minimise any disruption to its meeting its key growth targets. However, the current fragility of the global food situation has highlighted the fact that even its high-income status does not make it immune to interruptions in the global food supply chain and to price fluctuations. Thus, Singapore cannot afford to allow its island status to prevent it from embarking on a broad-based, multisectoral, cross-nation approach to ensure urban food security. After all, food security at the national level depends also on regional and global food security.

The food security strategies employed by a country such as Singapore, in particular, the way the urban-rural aspect is addressed, could be useful for other countries faced with increasing urbanisation. In addition, we need to examine developments around the world. Today, countries are more interconnected than ever. As events in the past have demonstrated, what happens in one country, whether it is a drought, a delayed monsoon, a pest outbreak, or a change in either a trade or economic policy, can have dramatic repercussions not only

within that country but also in other countries as well.

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## About the Centre:

The Centre for Non-Traditional Security (NTS) Studies of the S. Rajaratnam School of International Studies was inaugurated by the Association of Southeast Asian Nations (ASEAN) Secretary-General Dr Surin Pitsuwan in May 2008. The Centre maintains research in the fields of Food Security, Climate Change, Energy Security, Health Security as well as Internal and Cross-Border Conflict. It produces policy-relevant analyses aimed at furthering awareness and building capacity to address NTS issues and challenges in the Asia-Pacific region and beyond. The Centre also provides a platform for scholars and policymakers within and outside Asia to discuss and analyse NTS issues in the region.

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.

The Centre is also a founding member and the Secretariat for the Consortium of Non-Traditional Security (NTS) Studies in Asia (NTS-Asia). More information on the Centre can be found at [www.rsis.edu.sg/nts](http://www.rsis.edu.sg/nts).