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FOOD AND HEALTH IN THE ASIA-PACIFIC: THE ECONOMICS OF ACCESS AND ITS IMPLICATIONS FOR HEALTH

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This is the first of a two-part NTS Alert series that will explore the intersection between food security and health issues in the Asia-Pacific. This NTS Alert focuses on health problems stemming from the enduring challenge of maintaining adequate levels of food across multiple populations living in diverse conditions. Shortcomings in food access still plague many areas in the region and create pervasive and wide-ranging problems for public health. The second NTS Alert, to be released later this month, will explore the potential health impacts of high-tech agricultural strategies and modern food distribution systems that are advocated by many as being the keys to improving food security throughout much of the region.



Children receiving food rations at a welfare centre in Cambodia. Access to food remains a problem in the Asia-Pacific, and this has significant ramifications for the health of vulnerable groups such as women and children from low-income households.

Credit: mrcharly/flickr.com

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Introduction: Tragic Failures in a Sea of Success

The human nutrition calculus has improved markedly in the Asia-Pacific over the past half century. Green Revolution technologies and the effectiveness of the high level of priority given to food sector issues during the latter half of the 20th century have brought the region from the precipice of acute food insecurity to levels at which far fewer citizens endemically lack access to sufficient and adequately nutritious foods (Hazell and Haddad, 2001; Hazell, 2009). Asian wheat, rice and maize yields grew at annual rates of 5.43, 3.25 and 4.62 per cent respectively between 1967 and 1982, primarily as the result of the planting of faster-growing varieties,

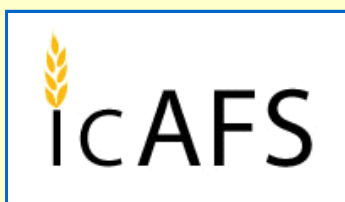
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access to more effective and widely used irrigation systems and greater profitability levels for grain farmers (Hazell, 2009). These yield increases enabled significantly more food production to come from only negligibly greater areas of land under cereal cultivation, and were the key to providing millions of people with access to affordable sources of nutrition. In a compelling indicator of food security success, at the same time that there was a 60 per cent increase in Asia's population (between 1970 and 1995), caloric availability per person increased nearly 30 per cent and wheat and rice became cheaper in real terms (ADB, 2000; Hazell, 2009).

These resounding achievements help explain why the Asian experience is held up as an example of food security progress from which other regions can gain lessons (FASID, 2003).¹ It is important to recognise, however, that within this larger success story there are pervasive conditions of under-nourishment which continue to plague the lives of individuals and the progress of communities in pockets throughout the region. The most recent Global Hunger Index released by the International Food Policy Research Institute (IFPRI) reveals the details of this reality, finding 'moderate' hunger levels in China, Thailand and Malaysia, 'serious' hunger levels in Indonesia, the Philippines, Vietnam and Myanmar, and 'alarming' levels of hunger in Cambodia, Lao PDR and Timor-Leste (Von Grebmer et al., 2010).² This NTS Alert explores the persistence of under-nourishment in the Asia-Pacific and seeks to illuminate some of the health problems that accompany hunger in the region. The situation described in this NTS Alert makes clear what is already intuitive; that ensuring access to adequate and nutritious food must be a linch-pin of health strategies on any level, and that system-wide economic factors must be addressed in order for such access to be achieved.

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Small Farmers, Big System: The Macroeconomic Complexities of Food in the Asia-Pacific

Macroeconomic forces have the capacity to undermine access to affordable food in fundamental ways, particularly when factors coalesce to lead to rapid food price increases.

Past food 'crises' help illuminate this point. In 2007–2008, international prices for wheat climbed in response to a period of decreased production and corn prices rose primarily because of crop diversions to the biofuel industry. Rice, however, faced no similar constraints and rice production actually increased as the food crisis deepened (Timmer, 2010). The prices of rice in Asian markets still spiked, however, as rice exporting countries such as India and Thailand reduced rice exports and imposed minimum export prices in order to supplement domestic food markets during the period of price instability for other staples (in this case, wheat and corn). Importing countries, most notably the Philippines, responded by trying to rapidly increase rice stocks through purchases on the international market, which in turn drove the prices ever higher in a compounding cycle of panic buying and climbing prices. 'Nervousness' in Asian rice markets led to skyrocketing prices that saw rice move from USD375 per tonne at the beginning of 2008 to over USD1,100 per tonne by April of that year (Timmer, 2010).

Such price volatility is not unique to the modern period nor is it confined to international markets. Staple grains in Asia, especially rice, are particularly difficult to stabilise because of the myriad stakeholders involved. Hundreds of millions of small-scale farmers and millions of traders, processors, retailers and consumers all interact in a system that affects decisions about how much grain is grown, sold, stored and consumed (Timmer, 2010). When prices appear to be increasing and/or set to increase more, everyone from the individual family to the farmers, grain harvesters, millers, traders and governments attempt to rapidly gain access to more. These decisions affect both domestic and international pricing and can leave countries, producers and consumers all grappling with uncertainties about the future prices and availability of some of Asia's most essential crops. Such uncertainties are neither new (rice and cereals also fluctuated greatly during the early 1980s) nor are they fading, with instability continuing to affect contemporary food markets in the Asia-Pacific, and with pronounced price increases defining 2010 and the early months of 2011.

Food price increases impede access to adequate food for the most vulnerable populations of the Asia-Pacific. Far from being academic or



Rice was one of the commodities most adversely affected by the 2008 food price hikes.

Credit: Chrissy Olson/flickr.com

immaterial, these systemic economic forces have the capacity to abruptly affect the quality of life of millions of individuals and have potentially acute implications in the sphere of public health.

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Food Access and Child Health



Bangladeshi mothers receiving information about maternal and child health and nutrition.

Credit: Bread for the World/flickr.com

According to the World Food Programme and the Food and Agriculture Organization of the United Nation's (WFP and FAO, 2010:10) report, *The State of Food Insecurity in the World 2010*, the Asia-Pacific continues to house the majority of the world's undernourished people, with 578 million of the world's 925 million hungry residing in the region. Malnutrition is a major underlying cause of many health problems, a reality that is particularly clearly illustrated in the areas of maternal and child health.

Unsurprisingly, infants and young children are particularly vulnerable to the effects of malnutrition. The best nourishment for small children is exclusive breastfeeding for the first six months, then breastfeeding plus complementary foods up to two years of age. The first two years of life are crucial as malnutrition during this time has a profound effect on child growth and development, with long-lasting consequences (Dewey, 2006:2). Breast-milk is essential to child health as it provides the energy and nutrients that infants need, promotes sensory and cognitive development, and helps protect infants against infectious and chronic diseases. According to the

World Health Organization (WHO, 2011), breastfeeding also reduces infant mortality due to common childhood illnesses such as diarrhoea or pneumonia, and is helpful for a quicker recovery during illness.

Troublingly, women may not be able to produce breast-milk of sufficient quality and quantity if they are malnourished. Many women in developing countries also become anaemic when pregnant due to a lack of iron in their diet (UN Millennium Project, 2005:3–4). The implications are pronounced, as underweight births and inter-uterine growth restrictions cause 2.2 million child deaths a year. Poor or non-existent breastfeeding causes another 1.4 million. Other deficiencies, such as lack of vitamin A or zinc, for example, account for 1 million deaths (The Starvelings, 2008).

Under-nourishment continues to plague vulnerable children beyond their first two years. According to the WHO, malnutrition is the largest contributor to child mortality, and is present in half of all cases (The Starvelings, 2008). Malnutrition has also been known to exacerbate health conditions common in young children, including measles, malaria, pneumonia and diarrhoea. Malnutrition increases the risk of infection and infectious disease, for example, it is a major risk factor in the onset of active tuberculosis. Additionally, vitamin and mineral deficiencies can cause diseases. A common example is the occurrence of goitre and hypothyroidism in children in developing countries due to iodine deficiency.

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Impact on Existing Illnesses

Food deficiencies can exacerbate health problems in adults as well as children. An excellent example of this is the case of HIV and AIDS. The Asia-Pacific is home to about 6 million people living with HIV and AIDS. Malnutrition heightens susceptibility to HIV infection while expediting the onset of AIDS. Additionally, the HIV epidemic largely overlaps with populations already experiencing low diet quality and quantity. The relationship, and overlap, between HIV infection, nutritional deficiencies and food insecurity is complex: HIV infection causes increased susceptibility to other infections – the effects of which are further compounded by insufficient caloric intake and nutrient deficiencies (Ivers et al., 2009:1096).

Undernutrition and HIV are characterised by negative feedback loops at multiple levels (Ivers et al., 2009:1096). HIV impairs metabolic functions in absorption, storage and utilisation of nutrients which can translate to compromised immunity, nutrient deficiencies and increased susceptibility to infectious diseases (Katona and Katona-Apte, 2008; Piwoz, 2004). Lack of food intake and malabsorption also leads to weight loss, which worsens the impacts of HIV infection (Gorbach et al., 1993; Wheeler, 1999).

Also, because HIV infection increases resting energy expenditure, people living with HIV have higher than normal nutritional requirements, including needing up to 50 per cent more protein and 15 per cent more calories than the average adult (Ivers et al., 2009:1097). HIV-infected individuals also require adequate food intake to facilitate the absorption and effectiveness of drugs and other forms of medical treatment that help promote recuperation and immune functions (McDermott et al., 2003; Raiten et al., 2005). Without adequate food, HIV treatments, particularly antiretroviral therapies, are rendered less effective in patients. Low body weight in HIV-infected persons likewise interferes with

the effectiveness of antiretroviral therapies (Mangili et al., 2006; Tang et al., 2002).

In sum, the health conditions associated with food deficiencies have long-term ramifications for the health of populations across the Asia-Pacific. These challenges affect a range of individuals, but the most affected remain children and women. According to the UN Economic and Social Commission for Asia and the Pacific (UN ESCAP, 2009:7), around 3.8 million children in the region die each year before reaching the age of 5, and about 1.9 million of these deaths are the result of malnutrition, poor hygiene and lack of access to safe water and adequate sanitation. The same report states that in some countries, gender bias exists and this leads to the maldistribution of food within households, putting women at greater risk of under-nourishment than men. Other vulnerable groups include migrant workers, highly rural populations and people living with HIV and AIDS (UN ESCAP, 2009:8). These diverse vulnerable populations face a common problem: impediments to access to adequate food.

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Conclusion: Addressing the Pervasive Challenge of Access

The Asia-Pacific experience helps demonstrate the limits of production advances, laudable though they are, in ensuring food security across the socioeconomic spectrum in developing countries. Access to food is fundamentally predicated upon food affordability, and the need to find some modicum of price stability will therefore rightly continue to drive both domestic and international food policies. The health and attendant social consequences that stem from the unstable economics of food represent the most vital stakes in formulating food system strategies. An examination of current impediments to food access can thus provide valuable insights into future approaches for reducing hunger in the Asia-Pacific region.

It is clear that exporting countries will curb food exports if domestic supplies are perceived to be unacceptably low. This has understandably led many countries to seek greater stockpiles of key foodstuffs at times when they are easily accessible. In the Asia-Pacific, for example, the Malaysian government pledged to triple its rice buffer stocks in response to the 2007–2008 crisis, the Philippines stated that it would establish greater stockpiles and Indonesia tripled the baseline level needed in domestic stocks before rice could be sold internationally. As vital as effective stockpiling is, however, it should not be viewed as a painless strategy or a catch-all solution. Stockpiling can be very expensive, and food quality deteriorates during storage. Stockpiling also takes government investment away from other areas that could improve the plight of vulnerable populations (Timmer, 2010).

The partial resilience provided by stockpiling must therefore be combined with effective social safety nets to maintain access to food in the context of shifting economic conditions. Since access (affordability) rather than absolute food availability (production) is typically the primary driver of hunger, social safety nets can play the essential role of subsidising food purchases, providing cash transfers to the most vulnerable populations and, where necessary, facilitating direct food aid distribution. The international donor community has an important continuing role to play in these processes, which must become more efficient and rapidly deployable. Food price fluctuations can happen very quickly, and the response mechanisms that are essential for the health of vulnerable people should be designed with this reality in mind.

However, stockpiling and social safety nets, while crucially important, are stop-gap measures. They will not ensure secure access to food across developing populations in the longer term. Achieving such access requires socioeconomic progress and increasing purchasing power among the poor along with continuing efficiency and production gains in the food sector. The impressive advances in agriculture in the Asia-Pacific still fall short of what will be needed to feed a growing population defined by shifting food needs and preferences. Meeting the region's food challenges will necessitate greater crop yields, more efficient use of land and more modern food distribution systems. These strategies, which entail a range of agrotechnological inputs, create their own set of health concerns which will be explored in the second instalment of this NTS Alert series.

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Notes

1. An example is the publication cited here, which is a substantive output from a conference dedicated to exploring the utility of applying the Asian Green Revolution experience in Africa.
2. The International Food Policy Research Institute's (IFPRI) Global Hunger Index tracks hunger through a multidimensional variable calculation that combines the proportion of undernourished persons as a percentage of population, the prevalence of underweight children under the age of 5 and the mortality rate of children under 5.

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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.