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Baris Karapinar and Christian Haberli

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## 1

## Introduction: food crises and the WTO

BARIS KARAPINAR\*

What may be called ‘instant economics’ has always appealed to the quick-witted layman impatient with the slow-moving economist. This is particularly so in the field of hunger and food policy. Of course, the need for speed is genuinely important in matters of food, and the impatience is, thus, easy to understand. But instant economics is also highly deceptive and especially dangerous in this field. Millions of lives depend on the adequacy of policy response to the terrible problems of hunger and starvation in the modern world. Past mistakes of policy have been responsible for the death of many millions of people and the suffering of hundreds of millions, and this is not a subject in which short-cuts in economic reasoning can be taken to be fairly costless.

(Sen 1998)

In early 2008, world prices of major agricultural commodities, including wheat, rice, maize and oilseed crops reached their highest levels in nearly three decades. Stocks of the major commodities had been reduced to their lowest levels, yet food prices continued to mount, straining the budget of low income households all around the world. This led to some political tensions too – as people took to the streets in more than 30 countries, demanding their governments take action. There were even violent food riots that toppled governments, such as the one in Haiti. What is puzzling, however, is that the rising food prices caught the world by surprise. Policymakers in developed and developing countries alike appeared ill-equipped to deal with the supply shortages and the corresponding market volatility which thus turned into a real ‘food crisis’.

Food crises are nothing new for the hundreds of millions of people around the world who have always suffered from chronic food shortages and malnutrition. What is new, however, is the extent to which the

\* Senior Research Fellow, World Trade Institute, University of Bern, Switzerland.

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phenomenon affects societies that have long taken declining food prices for granted. By the same token, the fact that the world has failed to feed its entire population in periods of huge food surpluses and relatively low prices reveals that, as Amartya Sen would argue, there is no room for 'instant economics' looking for a quick fix.

Since Sen first analysed famines in Asia and Africa through his uniquely comprehensive approach, the political economy of food security has changed. There are new factors – such as the expansion of biofuels at the expense of food crops, market speculation and climate change, to name but a few – operating at the global level, stretching the definition of food security as a matter of 'entitlement' (Sen 1981). Even the definitions based on availability, access, stability and utilisation do not reflect the complexity of increasingly global food supply systems.<sup>1</sup> Achieving food security is now a multidimensional task, involving a growing role for a competitive and effective international trading system, the integration of small-scale farms into global supply chains, investing in new technologies and input availability, and adopting environmentally sustainable farming and supply management practices. Given the new developmental challenges that contemporary societies face, addressing food security requires a new and more comprehensive policy agenda at the national and international levels.

Despite decades of efforts and tremendous technological progress in a globalised economy, the task is now even bigger, not only because there are more mouths to be fed but also because of other unprecedented constraints such as the current financial meltdown and the longer term challenge of climate change. What are the potential implications of the 2008–2009 financial crisis on agricultural commodity markets? Global capital markets are now so integrated that the financial crisis, which originated mainly in the US, with the consequence of global recession, affects the macro-economic environment in which even subsistence farmers operate. Similarly, addressing the potential impacts of climate change on agriculture is a major challenge, which has led some analysts to question the world's carrying capacity (e.g. Diamond 2005). Modelling

<sup>1</sup> Based on the Food and Agriculture Organization of the United Nations (FAO) definition (FAO, 2002). Another definition was adopted by the 1996 Food Summit: 'Food security, at the individual, household, national, regional and global levels is achieved when all people, at all times, have physical, social and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life' (FAO, 1996). Given their subjective nature, these definitions do not offer a framework for clearly set mandates and measurable performance benchmarks.

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studies project that climate-change-related variations in temperature, precipitation and the frequency of extreme events will have a substantial impact on agricultural production, with the potential for critically undermining food security in already vulnerable regions such as sub-Saharan Africa. Will the world be able to feed more than nine billion *homines sapientes* in 2050 when the major impact of climate change begins to be felt? A 'no' answer would clearly mean Malthus's revenge, and a blow to the instinctive drive of the human being to innovate and adapt. But a 'yes' answer should immediately raise the question of how.

In the context of increasing globalisation of food and agriculture, how food security is to be achieved for low income population segments is a big challenge. What is the role of international trade in this picture? Is the lack of substantial liberalisation of trade in agriculture, leading to a relatively thin world market structure, a cause of the food crisis? On the other hand, has more open trade left some developing countries vulnerable to price shocks? And if so, what would a conclusion to the WTO Doha Round bring in this respect? There are also questions about the role of small-scale farms in this context. Can or should they be integrated into global food chains, or are subsistence farming and self-sufficiency ('food sovereignty') the way forward? In probing the role of international trade in food security, there is an urgent need for rigorous analysis to answer these crucial questions.

The WTO Ministerial Conference of July 2008 took place just after food prices had reached record high levels. Given that the fundamentals of WTO rules regulating agriculture had been designed for a period when the prices of food commodities were relatively low, the question is whether or to what extent the multilateral trading system could contribute to food security in radically different market circumstances. What is the relevance of the fundamental promise of the Doha Round, namely to drastically reduce farm support and tariffs in developed countries which had been suppressing world prices at the expense of farmers in developing countries? Can providing better market access trigger higher production in low-income countries? What would be the potential impact of the latest deal on the WTO negotiating table on those countries most adversely affected by the crisis? And what would be the consequences of the remaining loopholes in a post-Doha regulatory framework, such as the lack of real disciplines on 'non-genuine' food aid, export credits and export restrictions? If 2008 marked the end of the trend of declining prices of food, did it also mark the end of the Doha Round?

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This book addresses the food crisis of 2007–2008 and the multilateral trading system within a broad context of agricultural development, trade regulation, technology policy and environmental sustainability. It aims to identify and analyse the major causes and triggers of the crisis and its relationship with global trade. It is divided into two thematic sections. The first section includes five chapters written by leading economists reflecting on the structural and cyclical causes of the food crisis and its impact on poverty, while also comparing it with previous cases of rapid price changes. It also deals with the technological development and environment dimensions of food security. The second section focuses on international trade and WTO regulation. It includes six chapters written by specialists in the field of international trade. In light of the results of the WTO Ministerial Conference of July 2008, this section offers an initial assessment of the Doha ‘Development Round’. It also covers the relevant WTO jurisdiction and the agricultural legislation of the European Union (EU) and the United States (US), using as examples the impact of the Common Agricultural Policy (CAP) and the US Farm Bill 2008 on the food crisis. Finally, avoiding the shortcomings of ‘instant economics’, the concluding chapter offers carefully crafted policy recommendations.

### The end of poverty versus the end of low prices of food

Food crises are not new, but the political economic context in which they occur differs. In Chapter 3, Díaz-Bonilla compares various parameters of commodity market fluctuations during the early 1970s and the recent food crisis. For both periods, he teases out all major macro-economic indicators, currency and finance regimes, trade patterns, triggers and causes. He also looks at the potential implications of the current financial meltdown for the agricultural commodity markets. As such, he clearly illustrates that the context of the price shock in 1973–1974 was substantially different from the one in 2007–2008.

What made the surge in the prices of food crops in 2007–2008 a ‘crisis’ is its severe impact on the daily lives of the ‘bottom billion’.<sup>2</sup> Rising prices affect this group profoundly – as food is the most essential item in their consumption basket.<sup>3</sup> It is now becoming clear that the chances of

<sup>2</sup> The term ‘bottom billion’ was borrowed from Collier (2007).

<sup>3</sup> The impact of the food crisis on affluent societies, which only spend a small proportion (e.g. less than 10 per cent on average) of their income on food, is marginal, although it hits poorer segments disproportionately.

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achieving the Millennium Development Goals (MDGs) by 2015 have been set back (partly) as a result of the crisis. Provisional estimates indicate that 75 million additional people have fallen below the hunger threshold, primarily due to the food price increases (FAO 2008a). Similarly, the poverty headcount – an out-of-social-context account of poverty – is estimated to have risen. However, defining the scale of the ‘crisis’, i.e. its impact on the poor, is a complex task, requiring rigorous empirical analysis. As compared to highly aggregated cross-country studies, household surveys better capture the complexity of the phenomenon.

Beyond the static and relatively straightforward assessment of the impact of prices on households with different profiles, e.g. net food buyers or net food sellers, it is crucial to shed more light on the secondary and long-term effects that high prices of agricultural commodities might have on employment, investment and consumption linkages between the agricultural and non-agricultural sectors. ‘Instant economics’ tell us that net food sellers are better off while net food buyers shoulder the burden; however, as the prices are projected to remain high, their potential impacts on farm employment, wages of unskilled or semi-skilled labourers, agricultural investment and consumption patterns need to be identified before putting in place long-term policy strategies in response to the crisis.

In Chapter 2, Martin and Ivanic look at household income and expenditure patterns in nine low-income countries to assess the impact of the food crisis on different segments of the poor.<sup>4</sup> Analysing the results of extensive household surveys, the study investigates the potential impact of different price scenarios, including the one reflecting the recent price rises, on poverty headcount and poverty gap. It clearly illustrates how the impact on poverty differs substantially at the commodity, country and household levels. It explains why the negative impact of changes in prices of certain crops is higher than that of others. It provides a numerical estimation of the secondary impact of price changes on poverty, by taking into account the potential changes in wage rates for unskilled workers. It also offers a methodological account of why some surveys in the literature draw different set of conclusions on the impact of price movements on poverty.<sup>5</sup> The chapter concludes by making an estimation about the potential impact of the food crisis on poverty headcount and on efforts in the fight against poverty (Ivanic and Martin 2008).

<sup>4</sup> These countries were Cambodia, Vietnam, Bolivia, Nicaragua, Peru, Madagascar, Zambia, Malawi and Pakistan.

<sup>5</sup> For instance, a recent study by Aksoy and Isik-Dikmelik (2008).

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A recent FAO study looks into other dimensions of the effects of price hikes on poverty (FAO 2008a). It highlights cases where the price increases have not actually reduced cereal consumption significantly, as in Peru, where poor people adapt to change by reducing their consumption of other vital goods and services, such as education and health care, which would lead to more severe long-term consequences. The study also looks at the gender dimension, and concludes that on average, female-headed households both in rural and urban areas stand to lose more than male-headed households (FAO 2008b). This is mainly because female-headed households tend to have less access to land and hence to be poorer. Therefore they spend a greater share of their income on staple foods, resulting in a relatively more adverse welfare impact than is seen in male-headed households.

Other chapters in this volume look at the secondary and long-term impacts of high food prices. For example in Chapter 5, Jones and Elasri analyse the inflationary effect of food price hikes, accounting for about three-quarters of the rise in the consumer price index in some developing countries such as China, Kenya, Pakistan and Bangladesh. Clearly this will further skew the distribution of income, to the detriment of poor households. On the other hand, the questions of whether higher prices may trigger the flow of foreign direct investment (FDI) to the agricultural sector of low-income countries, how farmers will respond to the new market circumstances, and how consumption and production patterns will change are also of crucial importance. For instance, there are recent reports that countries like South Korea, China and Saudi Arabia are increasingly interested in large-scale agricultural investment in natural resource-endowed low-income countries such as Madagascar, Mozambique, Ethiopia and Pakistan. The objective is to improve food security in the foreign investor country, which may have serious food security implications for the host country.<sup>6</sup>

### Structural and cyclical factors

The direction of potential long-term impacts will be strongly related to the structural and cyclical factors that led to the food crisis in the first instance. Ranging from the structure of agricultural production in developing countries to the potential impact of financial speculation on

<sup>6</sup> For example, report by *Financial Times*, 'Daewoo to Cultivate Madagascar Land for Free' (19 November 2008).

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commodity markets, there is a need for a thorough analysis of the triggers and causes of the crisis. Such analysis should go beyond simply listing factors that might have had an impact. It should weigh the relative importance of each factor and the possible interactions between them in the wider context of globalisation in agriculture and food, driven by the increasing volume of international trade, FDI flows, vertically integrated supply systems and commodity markets (e.g. Von Braun and Díaz-Bonilla 2006; Aksoy and John 2005).

What are the structural factors preventing agriculture from achieving its full growth potential in regions such as sub-Saharan Africa? Is the predominance of small farms part of the food security problem? Is there a need for a new Green Revolution, and if so, is it feasible given growing environmental constraints? How about the changes in the demand structure, driven by unprecedented economic growth in emerging economies? What is the real impact of biofuels on agricultural commodity prices? How do weather and climate-change-related factors affect the supply side? As 2008 also saw one of the biggest, if not the biggest, financial crises in recent history, to what extent has financial speculation driven prices up? Various chapters of this book address these questions extensively.

### *Small farm viability in a globalised economy*

The African continent has been witnessing hunger for decades as Adesina describes in Chapter 4. He asserts that the solution to the crisis must come from addressing the fundamental cause: low agricultural productivity. Tackling this, which requires improving small-farm productivity, he argues, would also contribute to overall economic development through forward and backward linkages (production, consumption, labour, capital and foreign currency) between the agricultural and non-agricultural sectors. However, since Johnston and Mellor (1961) identified these linkages in small-farm-dominated production systems in the early 1960s, the political economic contexts within which small farms operate have changed enormously. Whether small farms in developing countries – amounting to 500 million farms operating less than 2 hectares on average (Nagayets 2005) – have managed to keep up with the pace of this change is a crucial question. Hence, as a structural factor, is the predominance of small-scale farms part of the chronic food insecurity problem in certain parts of the world?<sup>7</sup>

<sup>7</sup> The vast majority of around 70 per cent of the world's poor living in rural areas relies on small-scale farming for their livelihoods (IFAD, 2001).



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A recent debate on the role of small farms in economic development and poverty alleviation in the age of globalisation is relevant in this context. It takes place between two competing camps: the ‘neo-populist small-farm orthodoxy’ school and the ‘agro-pessimist’ ‘rethinking rural development’ school. The former relies on the old paradigm of small-farm efficiency in arguing that pro-poor growth depends on family farms, while the latter takes a sceptical view of the future viability of small farms, emphasising the role of non-agricultural activities in poverty alleviation and economic development.

The ‘small-farm’ school, led by scholars like Lipton and Hazell, argues that since small farms dominate the rural space in terms of the proportion of agricultural value-added, area and workforce, their resilience and persistence can be taken as an indication of their present and future viability (Lipton 2005). The members of this school of thought have long argued that small farms are advantageous in the early stages of development, since their labour-related transaction costs are low (Lipton 2005). Another advantage of small family farms is their natural hedging against food price shocks. The impact of a food price shock affects them through their net trade status in food, not their much larger total production status. The so-called inverse relationship between farm size and productivity constitutes the theoretical foundation of this argument.<sup>8</sup> The neo-populist school takes an optimistic approach in relation to the future viability of small farms and envisages that they can still play a major role in poverty alleviation (Hazell and Diao 2005).

The ‘rethinking rural development’ school, on the other hand, takes a pessimistic view of the role of small farms in fighting poverty. Its proponents question the economic viability of small-scale farming – as they look at the declining profitability of the sector as a whole (Ashley and Maxwell 2001). They also observe major trends in global food chains, and claim that small farms are not competitive at the global level (and are therefore too expensive for their customers, including other rural and urban poor). Higher transaction costs and institutional development failures disconnect

<sup>8</sup> The theoretical foundation of neo-populism was established by Chayanov in the 1910s. It was based on the idealisation of the dual character of small-scale farming. Combining the features of both entrepreneur and labourer, it was argued that small-scale family production was the most efficient form in agriculture. The idea of an *inverse relationship* between farm size and productivity was one of the fundamental backbones of this theory. It was argued that family producers had the ability to reduce their consumption, increase their productivity and re-allocate their land and labour endowments whenever necessary (Chayanov 1966).



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small farms from dynamic markets (Kydd 2002; Kydd and Dorward 2001). Hence, agro-pessimists suggest that the way forward is diversification from agriculture to non-agricultural activities for the bulk of small farms and thus the enhancement of scale-efficiency and market integration for those remaining in agriculture (Ashley and Maxwell 2001). Rather than prioritising agriculture, they argue, investing in education, training activities, rural tourism, and transport and communication infrastructure to ease the labour transition out of agriculture would be a structural solution that would alleviate poverty and thereby ensure food security.

### *Lack of Green Revolutions*

There have been repeated calls for a new Green Revolution to promote small farms and alleviate poverty and hunger in low-income countries, particularly those located in sub-Saharan Africa. It is true that the Green Revolution has contributed to alleviating poverty and hunger for hundreds of millions of people, mainly in Asia. However, it remained technically limited – as it left large numbers of poor farmers located in dry agro-ecological regions untouched (Hazell and Ramasamy 1991).<sup>9</sup> Both poverty and malnutrition are prevalent in these regions, which are now also facing the potentially negative impacts of climate change. In light of the food crisis, there is no doubt that the productivity in staple foods needs to be improved in these areas; however, whether the Green Revolution offers the right technological and institutional framework is contentious.

It has been argued that the Green Revolution was limited in its institutional design – as its ‘top-down’ approach did not equip it to address social, economic and environmental variations at the local level. Its state-led centralist approach to scientific research and technological innovation seems to be no longer feasible. In many developing countries, public research institutions, which were never designed to be competitive, find it increasingly difficult to obtain adequate resources and expertise to innovate in a rapidly developing field of technology. They lack the market knowledge and entrepreneurial drive to respond to today’s world of extremely diversified and sophisticated agricultural markets. Furthermore, the original design of these institutions, based on the conventional neo-classical assumption that there is a linear path from investment and research to innovation and its subsequent adoption by farmers, has been challenged

<sup>9</sup> Mainly in sub-Saharan Africa, but also in very large areas of Asia, there are now an estimated one billion people living in rain-fed dry and cold regions (Dixon *et al.*, 2001).

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(Hall *et al.* 2001). Hence, whether the institutional structure of the Green Revolution is capable of dealing with the new challenges that small farmers in developing countries now face is highly questionable.

The fact that the new technologies are increasingly sophisticated, and that scientific research and trials require substantial investment, is excluding many developing countries with limited resources to spend on R&D. The total spending on agricultural research in developing countries was around US\$ 14 billion in 2000, as compared to US\$ 23 billion in developed countries (Alston and Pardey 2006). The spending of developing countries has been rising at the aggregate level, but only a few relatively advanced countries account for this overall trend. Four major developing countries – India, China, Brazil and South Africa – account for more than half of the total spending by developing countries on public agricultural research. By contrast, sub-Saharan Africa has a dismal record. Africa's total public spending increased from US\$ 1.37 billion in 1991 to US\$ 1.46 billion in 2000, a growth of less than 1 per cent per annum. Even this low level of growth was mainly due to the efforts of a few relatively large countries, such as South Africa, without which the total level of spending would have declined significantly (Alston and Pardey 2006). Looking at this picture, some experts even argue that the increasing scientific gap and the dominance of the private sector are creating 'scientific apartheid' (Serageldin 2001).

To address this problem, there is an urgent need for a substantial shift in the way that agricultural R&D policies and priorities are formulated in low-income countries facing chronic food security problems (Karapinar and Temmerman 2008). In particular, Adesina, in Chapter 4, outlines how the ideals of the Green Revolution can be reformulated to overcome some of its institutional and technical weaknesses in the context of Africa. Given that the continent has a diverse set of agro-ecologies and cropping systems, he explains why there is a need for 'rainbow green revolutions' and 'evergreen revolutions' that combine increased productivity for diverse crops with greater emphasis on a farming systems approach, farmer participation and local adaptation and management by farmers (Swaminathan 2006). He discusses some small-scale but promising success stories on the path towards achieving such 'rainbow revolutions'.

### *Climate change and food security*

All other factors being equal, the present challenge of achieving food security is considerably greater in view of the potential impact of climate change on