# Chapter 7
# Combating Food Insecurity: Implications for Policy

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## 7.1 Introduction

The recent rise in global food prices and their volatility in 2007-08 and 2011 have raised grave concerns about the food and nutrition security of poor people in developing countries. High and increasing food prices pose a significant policy challenge, in countries where the share of food in household expenditure is relatively high (FAO et al. 2011). While the impact of spiraling food prices varies across countries and social groups, some common outcomes can easily be delineated, more so amongst vulnerable groups that face universal problems arising from poverty and social systems (Mathur 2010). According to a joint study by the Food and Agriculture Organization (FAO), and the Organization for Economic Co-operation and Development (OECD), the price increases and spikes of recent years may be indicative of what is to be expected into the future (OECD and FAO 2012). In this context, food security and food price stability are major concerns for governments in developing countries and international organizations.

According to FAO's latest statistics, at least 805 million people are still hungry in the world (FAO 2014a, b). As represented in Fig. 7.1, vast majority of hungry people live in developing regions, where an estimated 791 million or 13.5 % of the overall population, were chronically undernourished in 2012–14. Sub-Saharan Africa remains the region with the highest prevalence of undernourishment at 23.8 %. Slow progress has been made in South Asia where the number of undernourished

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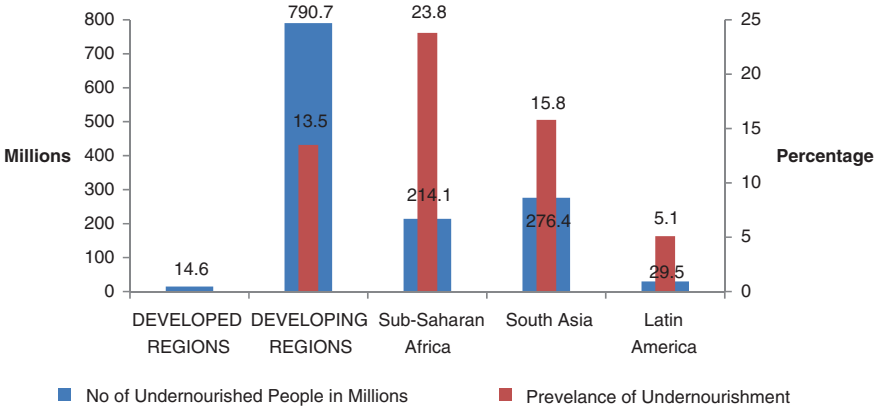


**Fig. 7.1** Number of undernourished people and prevalence of undernourishment (2012–2014). *Source* FAO (2014b)

has gone down from 291.7 million in 1990–92 to 276.4 million people in 2012–14. On the other hand, significant reductions in both the number of people who are undernourished and the prevalence of undernourishment have occurred in most countries of Eastern and South-Eastern Asia, as well as in Latin America.

High and volatile prices are an important factor contributing to the existing levels of undernourishment. A study by Ivanic et al. (2011) estimate that the 2011 food price hike pushed 68 million people into poverty, while at the same time pulling 24 million people out of poverty. The overall result was a net increase of 44 million poor people. Hence, building the resilience of developing countries and their vulnerable populations to high and volatile food prices is an integral component of a comprehensive strategy to help these populations manage shocks in the future.

A number of studies have been conducted for finding the causes behind the increasing food prices. Some of the factors listed include supply-utilization shocks such as adverse weather conditions, production shortfalls, low stocks, third-world income and population growth and resulting dietary transitions; long-run production trends and declining investments in agricultural research; biofuels and the link between corn and crude oil; export restrictions and trade policy responses; exchange rates and macroeconomic factors; and financialization of commodities and speculation (Abbot et al. 2011; Heady and Fan 2010). Wright (2011), negates most of these factors and concludes that the mandate related to biofuels and the low grain stock-to-use ratio (SUR) in the years of price spikes have been primarily responsible for price hikes and volatility. The present study analyses the broad economic and regulatory measures that affect food insecurity with specific focus on agricultural productivity, subsidies and safety nets, surge in biofuel demand and variations in foodgrains stocks-to-use ratio.

The present paper has three sections. Section 7.1 briefly provides the extent of undernourishment in different regions of the world. The lessons for the national

and international organizations are the subject matter of Sect. 7.2. Importance for the world community to understand that many of the shocks and stresses to which the hungry are exposed are caused by their actions, and thus the need for them to participate in formulation of agenda to enhance food security is also discussed here. Finally, Sect. 7.3 concludes from a broad policy perspective.

## 7.2 Select Policies for Combating Food Insecurity

The select policies for combating food insecurity that are discussed in this section are related to:

i. Agricultural productivity
ii. Subsidies and safety nets
iii. Surge in biofuel demand, and
iv. Variations in foodgrains stocks-to-use ratio

Each of these is discussed next.

(i) *Enhancing Agricultural productivity*:

Enhancing and accelerating agricultural productivity in a sustainable manner is a central component for achieving global food and nutrition security. Productivity can be a growth engine, leading to improved food systems, economic transformation, and poverty reduction. When coupled with access to nutritious food, agricultural productivity is a powerful base for building health and stability (GAP 2012). In October 2010, Global Harvest Institute (GHI) released its inaugural Global Agricultural Productivity Report (GAP Report), to serve as a benchmark to analyze agricultural productivity growth. The Global Agricultural Productivity Report (GAP 2012), has forged five policy priorities to improve agricultural productivity growth and meet the challenge of feeding a growing global population. These are:

- Increasing Investment in Agricultural Development and Rural Infrastructure
- Strengthening and Streamlining Development Assistance Programs
- Improving Agricultural Research Funding, Structure, and Collaboration
- Embracing Science and Information Based Technologies, and
- Removing Barriers to Global and Regional Trade in Agriculture

Projected food demand varies across countries on account of population growth and rising incomes. While this demand is expected to grow by only 12 % from 2000 to 2030 for the developed countries, the same is likely to grow by a whopping 115 % for the developing countries. Also, for the developing countries, a greater percentage of the additional demand is expected to come from increasing incomes rather than additional population. GAP Report (2010) calculated that global agricultural total factor productivity (TFP) must grow by an average rate of at least 1.75 % annually to double agricultural output by 2050. Recent

findings indicate that global TFP is rising at an average annual rate of 1.84 %. However, wide regional differences exist. Additionally, productivity variations across regions will continue to exist, and thus closing the excess demand gap will invariably require mechanisms such as trade or, where appropriate, land expansion. Historically, the Americas have been net exporters of food while Asia and Sub-Saharan Africa have been net importers. Here we discuss the expected food gaps likely to prevail in Asia, Sub-Saharan Africa and Latin America by 2030.

*Asia*: In South Asia, food demand is estimated to grow annually by 2.75 % between 2000 and 2030. Asian populations are transforming rapidly: urbanization is increasing, incomes are rising, and the middle class is expanding. As a result, additional food demand in Asia will result primarily from rising incomes rather than population increases. By 2030, 75 % of China's population is expected to enter the middle income category, which currently is at 12 %. Similarly, for India and Indonesia, the middle-income population could grow to account for 70 and 80 % of the population respectively by 2050. If this region maintains the TFP growth rate of the last decade of 2.48, 82 % of total demand will be met by maintaining the current TFP growth rate. The remaining food gap will have to be met through trade.

*Sub-Saharan Africa*: In Sub-Saharan Africa, the average annual growth in food demand is projected to be 2.83 % per year from 2000 to 2030. This is expected to be largely on account of population increase. The supplies are expected to increase more through additional land being cropped rather than enhanced productivity. Only 13 % of total additional demand generated by 2030 is expected to be met by maintaining the current TFP growth rate which are low and average only 0.5 %. Here, less than 4 % of cropland is irrigated, compared with 35–40 % in much of Asia. Farmers in this region apply less than eight kilograms per hectare of inorganic fertilizers compared with more than 150 kg/ha in much of Asia. Corruption, political instability, conflict, and the lack of intra-regional trade capacity have also been cited as major barriers to agricultural production and food security. With TFP growth rates being rather low, food demand gaps are likely to increase significantly unless productivity growth rates accelerate and/or input use expands.

Empirical evidence shows that in Sub-Saharan Africa, each 1 % increase in agricultural productivity translates into a similar increase in the number of people that can afford basic needs (FAO 2011). Raising productivity in Sub-Saharan Africa will require application of information technology, better storage facilities, and unleashing the productive power of women farmers in Africa by giving them access to credit, training and secure tenure laws. These changes are likely to make a significant impact on not only productivity, but also on household income, and food and nutrition security.

*Latin America*: In this region the food demand is expected to increase at a rate of 1.8 % per year from 2000 to 2030. TFP growth from the last decade is 2.74 % and if maintained or accelerated, this region will have more of food surplus. FAO predicts that food exports from the Latin American and the Caribbean region

is likely to expand fast as these countries will move from 118 to 130 % agricultural self-sufficiency by 2050 (Schmidhuber et al. 2009). Additional investment in infrastructure is the main hindrance for achieving better productivity and competitiveness. For instance, the World Economic Forum ranks Brazil's quality of infrastructure at 104 out of 142 countries surveyed. This is behind China (69), India (86), and Russia (100) (The Economist 2012). With due consideration given to this constraint, the region will be able to further expand its exports, increase production of biofuels, or withdraw some land from production for conservation.

These regions are required to improve productivity along the entire value chain through better infrastructure, processing, transportation, education, data analysis, and information management. Sustainability of improvement in agricultural productivity is being challenged by factors such as climate change, natural resource degradation, diversion of water and land from agriculture to urban and other uses, and rising input costs. This reinforces the need for enhancing R&D efforts in agriculture.

(ii) *Subsidies and safety nets*:

Rising food prices may negatively affect human development in four dimensions: by increasing poverty; worsening nutrition; reducing the utilization of education and health services; and depleting the productive assets of the poor (World Bank 2008; Grosh et al. 2008). At the height of the 2008 crisis, poor families most frequently responded to higher food prices by eating cheaper foods with lower nutritional value, consuming less food in meals and skipping meals (Brinkman et al. 2010; Compton et al. 2010). It is in this context that we discuss the need for strong government support in the form of subsidies in providing food security.

Given that, there is more than enough food in the world to feed its inhabitants, global hunger is not an insoluble problem. *Deprivation* in a *world of plenty* is an intrinsic rationale for state intervention to invest in programmes that reduce hunger and under-nutrition. Both the *welfarist approach*[1] and the *social justice approach* provide a rationale for government intervention. The link between 'efficiency wages' and 'poverty-nutrition-trap' also reinforces the need for government intervention (Leibenstein 1957; Mirrlees 1975; Stiglitz 1976, 2012; Bliss and Stern 1978; Besley and Coate 1991, 1992). In order to break the vicious cycle of deprivation, while economic growth is essential, evidence suggests that this happens at a modest rate. Thus targeted interventions, say, in the form of direct investments in nutrition are desirable (Alderman 2005). Sen's concept of development as freedom (Sen 2000) also justifies state actions to secure and expand the

[1]But welfarist theory also recognizes that what governments can achieve is limited by information and administrative constraints, both of which must be understood in order to determine whether and how to intervene. For example, where firms or individuals have more information on the costs and benefits of their decisions, the theory suggests that decentralized market-based instruments are preferable.

freedom of individuals. Studies by Kaur (2007, 2009) too corroborate Sen's view. Her findings indicate that while higher economic freedom (as measured by the Frazer's Institute's economic freedom index) promotes growth, it does not necessarily expand *larger freedoms*, as measured by freedom from want and deprivation. On the other hand, big governments with large subsidies and transfers as a proportion of GDP (which by definition lowers economic freedom index) have been instrumental in providing freedoms, such as, lowering poverty, inequality, infant mortality and malnutrition.

Food safety net programmes measure the public initiatives to protect the poor from food related shocks. The GFSI (2013), measures the depth and expanse of food safety nets across countries, by assigning a value between 0 and 4. It is a qualitative indicator that measures public initiatives to protect the poor from food-related shocks. The indicator considers food safety net programs, including in-kind food transfers, conditional cash transfers (i.e. food vouchers), and the existence of school feeding programs by the government, NGO, or multilateral sector. It takes a value between 0 and 4. The Report categorizes India's and Argentina's food safety nets as having a national coverage, with very broad, though not deep coverage of these programs (rating of 3 out of 4). For Ghana, the corresponding rating is at 2, implying that Ghana has a moderate prevalence and depth of food safety net programs run by the government, multilaterals, or NGOs. Brazil and Nigeria are at the two extreme ends: Brazil with a rating of 'four on four' and Nigeria with a 'zero on four'.

Studies by Jha et al. (2010, 2013a, b) have found that India's Public Distribution System (the world's largest food subsidy programme, PDS) has significantly increased the intake of calories, proteins, and iron for the PDS participants in the Indian states of Andhra Pradesh, Maharashtra and Rajasthan. However, a study by Svedberg (2012) provides a contrary view to the effectiveness of this programme and states that the impact of PDS on outcome variables, such as poverty and malnutrition, are practically nil.[2] Others too have often criticized government interventions in the form of subsidies on several grounds. Despite these shortcomings, interventions are considered beneficial, especially micronutrient interventions as they have high benefit-cost ratio. In India, vitamin and mineral deficiencies represent an annual GDP loss of USD 12.5 billion. In Pakistan, they may be costing the country around USD 2.5 billion annually[3] (Kaur 2014). In recognition of this fact, many countries have enshrined the right to adequate food in their national constitutions.

Post the food, fuel and financial crises there has been an increase in support by the World Bank to developing countries for social safety net programmes for reducing poverty and vulnerability in these economies (Fig. 7.2). Based on Fig. 7.2, the following observations can be made:

[2]Despite the noble intention of targeting subsidized food grains, the PDS is plagued with controversies (Bhattacharya and Rana 2008; Jha and Srinivasan 2001; Jha et al. 1999, 2013a; Kochar 2005; Khera 2008, 2011; Kumar 2010; Svedberg 2012; and Planning Commission 2008).

[3]Countries with a GDP $\geq$ USD15,000 are assumed to be free of vitamin A deficiency.

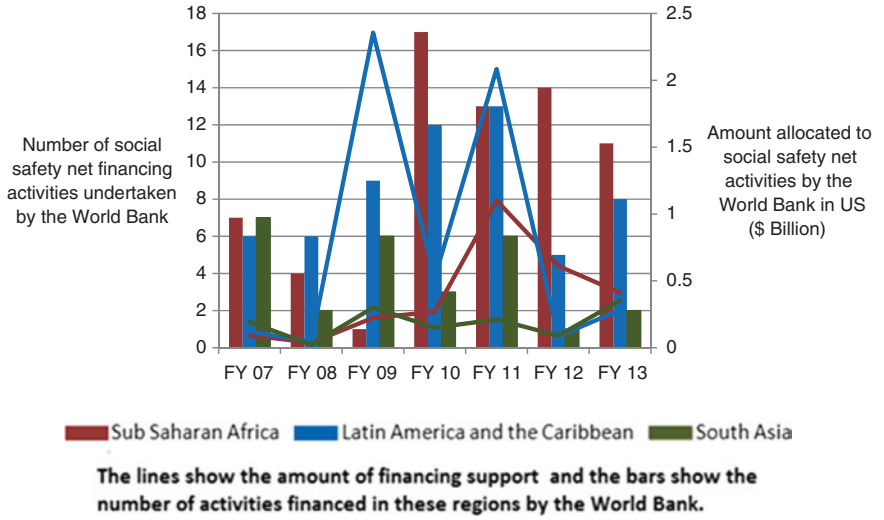


**Fig. 7.2** World bank support for social safety nets in terms of (i) number of financing activities and (ii) financing of social safety net activities in Sub Saharan Africa, Latin America and the Caribbean and South Asia, FY07-FY13. *Source* Andrews et al. (2014)

- In Sub-Saharan Africa, during the period FY 2007 to FY 2013, the number of World Bank sponsored financing activities peaked at 17 in financial year 2010-11. During the same period, there was a complementary rise in terms of the financing amounts allocated to Social Safety Net (SSN) activities. For instance, the SSA region experienced a six-fold increase between FY08 and FY10 to reach USD 270 million. The amount allocated to social safety net activities in the region reached a peak of USD 1.02 billion in 2011–12. This support has been strongly sustained since the crisis.
- Latin America and the Caribbean have been given the largest share of monetary support for SSN activities by the World Bank. The total amount the region has received between FY 2007 and FY 2013 stands at USD 5.502 billion. The number of financing activities increased from 6 in 2008–09 to 9 in 2009–10, and then further to13 in 2011–12.
- Post the first food crisis, South Asia received USD 0.3 billion as support for social safety net activities by the World Bank in 2008–09. This support increased to USD 0.35 billion in 2012–13. A total of 27 social safety net activities have been financed by the World Bank in the region during the period 2007–08 to 2012–13.

(iii) *Surge in biofuel demand*

Further, while many observers feel that oil price hike, low interest rates, excess global liquidity, income expansion in China and India, and hike in biofuel demand

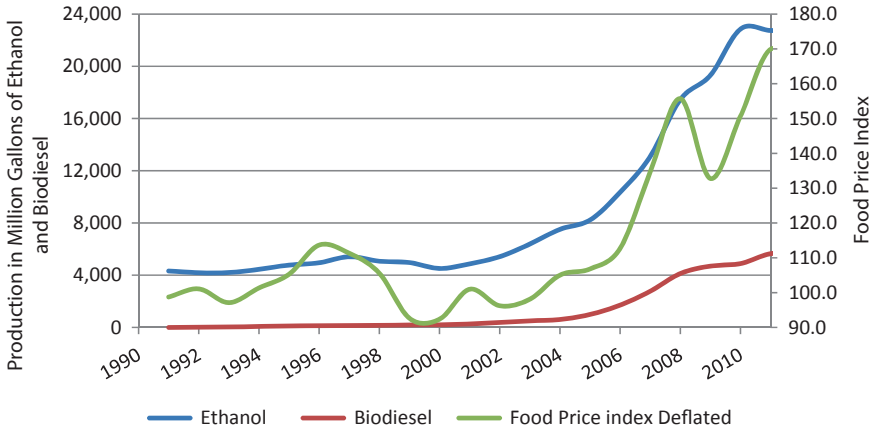


**Fig. 7.3** World ethanol and biodiesel production in million gallons along with the global food price index (Base 2002–04). *Source* Prepared from data for World Ethanol and Biodiesel Production from Earth Policy Institute, which compiled data from F.O. Licht data, cited in Suzanne Hunt and Peter Stair, "Biofuels Hit a Gusher," Vital Signs 2006–07 (Washington, DC: World watch Institute, 2006), pp. 40–41; 2000–2004 data from F.O. Licht, World Ethanol and Biofuels Report, vol. 7, no. 2 (23 September 2008), p. 29; 2005-2012 data from F.O. Licht, World Ethanol and Biofuels Report, vol. 10, no. 14 (27 March 2012), p. 281. The data for the Global Food Price index is from FAO

have been the main reasons for food price hikes, Wright (2011), negates most of these factors. He concludes that two events have been primarily responsible for price hikes and volatility. First, is the mandate related to biofuels and the second is the low grain stock-to-use ratio (SUR) in the years of price spikes. According to him, the most obvious large exogenous shock to grain markets in recent years has been the *surge in biofuels demand*. According to the HLPE (2011) Report, world biofuel production increased by around five times, from less than 20 billion litres a year in 2001 to over 100 billion litres a year in 2011 (Fig. 7.3). The report also states that biofuels are responsible for most of the growth in demand for vegetable oils and a significant proportion of the demand for grains since 2000. As a result, they have been an important driver behind food price rise and food price volatility in recent years. Further, the steepest rise in biofuel production occurred in 2007–08, in tandem with a sharp rise in food commodity prices.

The existing modern biofuel markets initially emerged in response to the oil price hikes in the 1970s. Brazil and the U.S. in response to these oil price hikes created a biofuels production sector and an ethanol market, the former using sugar cane and the latter corn. Rising fuel prices are prompting governments to take a more proactive stance towards encouraging production and use of biofuels. This has led to increased demand for biofuel raw materials, such as wheat, soy, maize and palm oil, and increased competition for cropland. The diversion of corn and soybeans to biofuel is now very substantial (more than 30 % for corn and 20 % for soy) and is likely to continue to increase under the current policies using

subsidies and mandates. These higher mandates and subsidies are likely to have more serious implications for supplies of corn for feed and food, relative to equivalent yield drops due to transitory, weather- or disease-related shocks. Almost all of the increase in global maize production from 2004 to 2007 (the period when grain prices rose sharply) went for biofuels production in the U.S., while existing stocks were depleted by an increase in global consumption for other uses. From 2004 to 2007, global maize production increased by 51 million tons, biofuel use in the U.S. increased by 50 million tons and global consumption for all other uses increased by 33 million tons, which caused global stocks to decline by 30 million tons (Mitchell 2008).

The World Bank's climate change agenda seeks to inform the global debate on biofuels through analysis, monitoring and balancing of competing needs for energy and food security. Concerns over increasing energy use, climate change, and carbon dioxide emissions from fossil fuels make switching to low-carbon fuels a high policy priority at both the global and country levels, and biofuels are a potential low-carbon energy source. These benefits, however, have to be weighed against the potential costs of rising food prices. According to an IFPRI study, most scenarios of increased use of biofuels imply substantial trade-offs with food prices. These trade-offs are dampened, although not eliminated, when technological advances in biofuel and crop production are considered. Trade-offs between energy security, climate change and food security objectives need to be carefully monitored and integrated into both food and biofuel policy actions. Even in the G-20 meetings biofuels were only mentioned in the Action Plan as something that required further study. No concrete action was recommended as a mandate on biofuel production, despite the growing weight of evidence that biofuels demand was a significant factor in high and volatile prices (Abbott et al. 2011). This is an area that certainly needs more concerted action by the international organizations. Removing policies that create conflict between the use of crops for fuel relative to food and feed and which increase price volatility is essential. Hence biofuel mandates should be relaxed or removed, along with subsidies and trade barriers.

(iv) *Variations in foodgrains stocks-to-use ratios (SURs)*:

Next is the role of grain stocks as a determinant of food price spikes and the associated learning from it. Traditionally the volatility in food prices has been explained by means of shocks to demand and supply ignoring stocks. Food stocks are important with respect to access and distribution of food as they support the ability of governments to limit excessive volatility in prices by offsetting supply shocks or sudden surges in demand. Available stocks can help cushion output shortfalls and contain price rises. However when stocks are minimal, prices tend to rise to accommodate production shortfalls. Bobenrieth et al. (2012) recommend that for the markets to function effectively, a virtually irreducible minimum amount of grain must be held in the system to transport, market, and process grains. Their analysis, based on the correlation between de-trended real prices and stock-to-use ratio from 1961 to 2007 for wheat, rice, maize and calories, substantiates that periods of low stock-to-use ratios (SURs) coexist with periods of high prices.

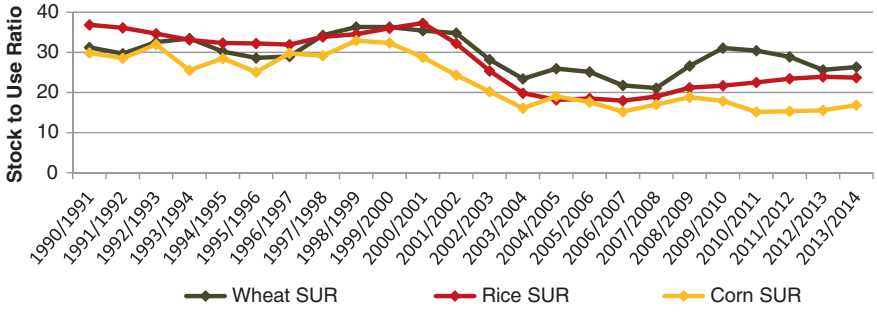


**Fig. 7.4** Wheat, rice and corn stock-to-use ratios (SURs). *Source* FAS, USDA

Analyses of grain reserves reveals that the bulk of the grain stocks are held in the United States and China, although Chinese stocks are effectively irrelevant to global markets as China prefers to maintain grain reserves to insure against domestic shortages. Looking at grain stocks since the early 1960s, Wiggins and Keats (2009) make important observations: First, China has consistently kept stocks proportionately much larger than the rest of the world, with ratios exceeding 70 % for rice crop in the 1990s; second, during the last 50 years, world stock ratios were allowed to decline until the early 1970s, thereafter they were built-up after the 1973–74 price spike, and then reduced after the turn of the century; and, third, the low points in stocks-to-use ratios tend to coincide with price spikes. More specifically, historically, the fall in global stocks of cereals below 15–20 % of world consumption, has led to large price increases and a breakdown of functioning of agricultural markets. A recent study by Wiggins et al. (2010), shows that an additional 105 million tonnes of cereals stored around the world would have been sufficient to avoid the global market disruption of 2007–08.

In Fig. 7.4, we use normalized stock-to-use ratios to analyse the adequacy of food stocks. These ratios continuously fell during the initial half of the decade of the 90s. The SURs for wheat, rice and corn were all lower in the first decade of the new millennium as compared to the decade of the 90s. More specifically the SURs for wheat, rice and corn stood at an average of 32, 34 and 29 % in the 1990s respectively and fell to 27, 22 and 19 % in the following decade. The food price crisis of 2007–08 corresponded with the low SURs of 21, 19 and 17 % for wheat, rice and corn respectively. These low SURs implied a lower level of ability to contain short term shocks and a greater impact on prices (Fig. 7.5). Hence stocks, and the factors that led to changing stock levels, were fundamental to the food price spike of 2007–08 and the recent increase in cereal prices in 2010–11.

Certain significant observations can be drawn from Fig. 7.5. These are:

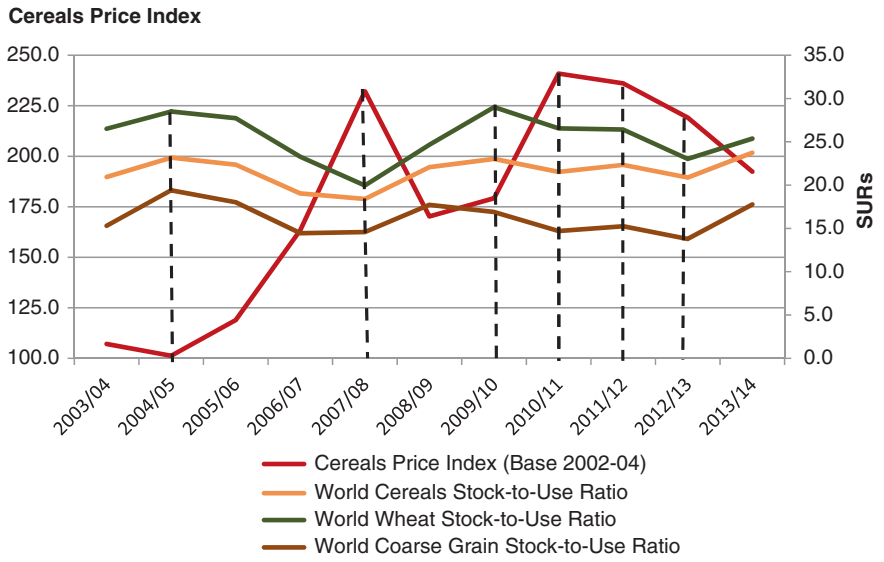


**Fig. 7.5** Cereal price index and world cereals stock to use ratio. *Source* FAO (2014a)

- The cereals price index was the lowest in 2003–04 when the stocks-to-use ratios for cereals, wheat as well as coarse grains were the highest.
- The cereals price index continued to rise with the fall in the stocks-to-use ratios for cereals, wheat and coarse grains before reaching its peak in 2007–08. This peak of cereals price index (232.1) coincided with the lowest levels of stocks-to-use ratios of cereals, wheat and coarse grains.
- Post the crisis of 2007–08 till 2009–10, the stocks-to-use ratios for cereals and wheat continued to rise leading to lower cereals price index. However in 2010–11 the cereals price index reached a new peak and stood at about 241 with another fall in the stocks-to-use ratios for cereals, wheat and coarse grains.
- Thus, the rise in the cereals price index has closely mirrored the fall in the stocks-to-use ratios of cereals, wheat and coarse grains till 2011–12[4].
- Period from 2011–12 to 2012–13 seems an aberration since during this time cereals price index fell, despite a fall in stocks-to-use ratios of cereals, wheat and coarse grains.
- Post 2012–13, the fall in cereals price index is associated with rise in SURs for cereals, wheat and coarse grains.

[4]However between 2011–12 and 2012–13 the cereals price index continued to fall despite a fall in stocks-to-use ratios of cereals, wheat and coarse grains.

Hence stocks, and the factors that lead to changing stock levels, have been crucial historically to explain food price spikes. Thus, policy makers must account for stocks-to-use ratios and prices as indicators of vulnerability to spikes in global cereal markets (Wiggins and Keats 2009).

## 7.3 Conclusion and Policy Implication

To summarize, our paper delves with broad economic and regulatory measures that affect food insecurity. Specifically, four policies for combating food insecurity have been discussed, viz.: enhancing agricultural productivity, providing appropriate subsidies and safety nets, designing biofuel policies and controlling variations in foodgrains stocks-to-use ratio. Sustained growth in agricultural productivity is indispensable for resolving issues of food insecurity. Enhanced agricultural productivity can be achieved by strengthening the available infrastructure, spreading knowledge of improved practices to smallholders and developing strong institutions. Investments in R&D for agricultural production are necessary for growth in agricultural productivity. This is true especially in the face of challenges such as: climate change, natural resource degradation, diversion of water and land from agriculture to urban and other uses, and rising input costs.

Social safety nets and protection programmes play an essential role in situations such as the food crises faced in 2007–08 and 2011. For one, they help avert an increase in poverty and inequality, enable households to maintain an access to food and thus are important for avoiding social and political instability. In response to the high food prices in 2008, 23 countries introduced or expanded cash transfer programmes, 19 countries introduced food assistance programmes, and 16 countries increased disposable income measures, demonstrating the importance of social protection measures (FAO 2009).

To the extent that diversion of corn away from consumption towards fuel production has led to declining SURs, adopting an appropriate biofuel policy remains paramount. Also, the Agricultural Market Information System (AMIS), a collaborative effort of international organizations, needs to enhance market information and transparency on the working of the grain markets. Unfortunately, there still remains no clarity on how the AMIS would work with the private sector, particularly the four big international cereal global grain traders referred to as ‘the ABCD’ (because of the coincidence of their initials as in ADM, Bunge, Cargill and Louise Dreyfus), which trade in over 75 % of world cereal trade. Setting new regulatory framework regarding stock disclosure norms for these large private corporations is undoubtedly important if information asymmetries are to be addressed.

Additionally, several initiatives such as ASEAN’s Emergency Rice Reserve Agreement, SAARC’s Regional Food Bank and RESOGEST in drought-prone West African and Sahelian States have been undertaken at regional level to provide food security. However, more needs to be done towards improving their effectiveness. For instance, the SAARC Food Bank, established in 2007 as a

successor of the non-operational SAARC Food Reserve, can benefit the South Asian region immensely-especially the food importers, and those with foodgrain production volatilities, but it is yet to be operationalised. The non-operationalisation of the SAARC Food Bank is attributed primarily to three factors (Pant 2014). First pertains to structural flaws, second to allocation of insufficient food, and third to procedural difficulties. Thus, structural flaws such as impractical triggers and ambiguous governance mechanisms need to be addressed. Additionally, procedural difficulties that emerge due to absence of proper pricing mechanism and inefficient distribution channels have delayed the operationalization of the Food Bank. The SAARC Food Bank Board needs to clearly define an emergency situation and the level of food deficit that would entail accessing food from the Food Bank. Public Distribution Systems in member countries too need to be strengthened.

For instance, India's public distribution system (PDS) operated under its food subsidy programme has a popular grain reserve policy. The system was revamped in 1997 as the Targeted PDS. With the implementation of the National Food Security Act (NFSA), coverage under the Targeted Public Distribution System (TPDS) has increased from 36 % to about two-thirds of the population. The NFSA, with the objective of providing food and nutritional security, provides for coverage of up to 75 % of the rural population and up to 50 % of the urban population. However, despite the noble intention of targeting subsidized food grains, the PDS is plagued with controversies such as ineffective targeting, substantial exclusion, and low off-take. Meanwhile, a shift to direct cash transfer system or food stamps is expected to plug in some of these leakages and loop holes. Nevertheless, the assurance of food supplies as maintained by the Food Corporation of India has had the potential to reduce price spikes, general food price volatility and improve food availability to the poor and vulnerable.

To conclude, as long as high and volatile food prices continue to pose threats with malnutrition and hunger being a reality for millions of people, deeper reforms in policies designed by international organizations and developed country governments are required. Meaningful, coordinated and collaborative efforts are required that bring about reforms attacking the structural weaknesses of the global food system. We need policies that accelerate agricultural productivity in a sustainable manner, support appropriately designed targeted interventions, discourage biofuel expansion and encourage the maintenance of sufficient buffer stocks. Regrettably, the developed world and international organizations have shied away from tackling the broader structural economic dimensions of the food crisis with bold regulatory reforms, and instead have pressed for initiatives that smooth markets by increasing food production and encouraging information flows, and that create mechanisms to cope with volatility such as assistance and risk management. In other words, it has focused narrowly on production, information and mechanisms to cope with price volatility, rather than the broader economic and regulatory measures that affect food security, viz. an appropriate biofuel policy and desirability of maintaining an adequate stock-to-use ratio. Needless to say, the G20 has to bring these concerns to the forefront to tackle food insecurity in select regions of the world.

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