

FOOD SECURITY, POLICIES, AND HUMAN DEVELOPMENT: THE EXPERIENCE OF INDIA

Ashwini Bhimsha Jane ^a, Shanta Bheemappa Astige

^a Department of Sociology, Tumkur University, India.

^b Department of Sociology, Government First Grade College, India.

^a Corresponding author: ashwinibjane@gmail.com

©Ontario International Development Agency ISSN: 1923-6654 (print)

ISSN 1923-6662 (online). Available at <http://www.ssrn.com/link/OIDA-Intl-Journal-Sustainable-Dev.html>

Abstract: This paper notes the substantive achievements made over the last 60 years in food security in India, but points out areas of continuing concern, including high rates of under-nutrition, especially among women and children, and especially in rural areas. The main planks of government food security policy comprise increased agricultural production, the holding of buffer stocks, subsidized food prices for sub-sets of the population, and the incorporation of food and other provisions into 'transfer' schemes of various kinds, including Food for Work-type schemes. In Indian policy circles, the international market is not seen as a means of ensuring food security, except as a last resort. All of the food-based provisions are costly, the performance of almost all is weak, and the champions of liberalization have been pressing for their removal. However, government perceives substantial political cost in reducing or removing such schemes, so that the more realistic quest is for a switch of resources among different types of scheme, towards those offering better prospects for food security. This paper recommends a transfer of resources from predominant 'supply side' towards 'demand side' strategies of this kind. This will interface squarely with production-focused policies by strengthening demand in local markets, many of which are outside mainstream marketing channels. Food-based schemes will have to continue so long as surplus stocks persist.

Keywords: Food Security, Food policies, Health, Public Distribution System (PDS)

INTRODUCTION

Since 2007, rising global food prices have similarly brought food security back onto the global agenda, raising both short- and long-term challenges. In the short and medium run, increased use of land and agricultural commodities for biofuel production, facilitated by subsidies from

the Organisation for Economic Co-operation and Development (OECD) countries, has become a subject of intense policy and analytical debates (Bobenrieth et al., 2012; Hertel, 2010; Wright, 2011). Analysts have concluded that low grain stocks combined with the impacts of the biofuel policies of major grain exporting countries, which divert grain away from food to biofuels, explain the rise and volatility in world market prices. The price rise in turn triggered export bans by major rice exporting countries. These various factors have increased the world's attention to food, energy, agricultural trade, and subsidy issues. The G20 meeting in June 2011 led to the establishment of the Agricultural Market Information Services (AMIS) as a way to increase transparency and enable global markets to function better through improved market information on prices and supplies. This was a low-hanging fruit and was followed by a focus on productivity growth at the next G20. That initiative came after years of neglect in investments in agricultural R&D. AMIS focuses on four commodities – wheat, maize, rice, and soybeans – and the key players in these markets. It intends to provide reliable, up-to-date information on supply and production forecasts, demand, stocks, and export availability. AMIS is also meant to be an early-warning mechanism for global food markets, allowing them to prepare in advance to respond to price volatility and ultimately coordinate policy responses (Schmidhuber, 2012).

GWP (2013) observed that the Droughts, floods, rising food and energy prices, and population growth have all served to focus the world's attention on water security and particularly the vital contribution that water makes to securing the world's food supplies. Future predictions suggest that the gap between water supply and demand is now growing and will be as much as 20 percent by 2030. This will be most acute in water scarce countries, unless there is investment

to make better use of existing supplies and develop new resources.

FOOD SECURITY AND HUMAN DEVELOPMENT

Over the next several decades, the world faces a grand challenge—and opportunity—at the nexus of food security, economic development, and the environment. Peter Rogers, Alan Whall (2003) governance matters a great deal for economic, social and environmental outcomes. Some necessary conditions for good governance are inclusiveness, accountability, participation, transparency, predictability and responsiveness. When the governing system does not fulfil these conditions we talk in terms of poor governance.

Craig Hanson (2013) first, the world needs to be food secure. The United Nations Population Division projects the global human population to grow from 7 billion in 2012 to 9.3 billion by 2050. United Nations (2010) Forty-seven percent of the population growth will be in sub-Saharan Africa, where agricultural productivity and soil quality is exceptionally low and where reliance on imports of basic staples is already high. Moreover, at least 3 billion people will enter the global middle class by 2030, and they will demand more resource-intensive foods such as meats and vegetable oils. At the same time, approximately 870 million of the world's poorest people remain undernourished even today. Many poor households are already close to the margins, as shown when food riots in 2008 broke out in more than 25 countries in response to spikes in food prices, which had left many people unable to afford basic food staples (Bush, R., 2010). To sufficiently feed all people by 2050, worldwide food availability (in caloric content) will need to increase by roughly 64 percent from 2006 levels. Since the majority of the world's farms are operated by smallholders, and it is generally on their farms that the larger productivity gaps exist, a large part of any supply increase will need to come from them.

Second, the world needs agriculture to contribute to inclusive economic development. Although agriculture directly accounts for approximately 3 percent of global gross domestic product (GDP), it employs more than 2 billion people around the world. Many of the world's poorest people are themselves farmers and, according to the World Bank, GDP growth originating in agriculture can be more effective at reducing poverty than growth arising from other economic sectors. Women comprise 41 percent of the agricultural workforce worldwide and make up the majority of agricultural workers in South Asia and sub-Saharan Africa. Because increasing income to women has disproportionate benefits for alleviating hunger, boosting opportunities for women in agriculture has great significance.

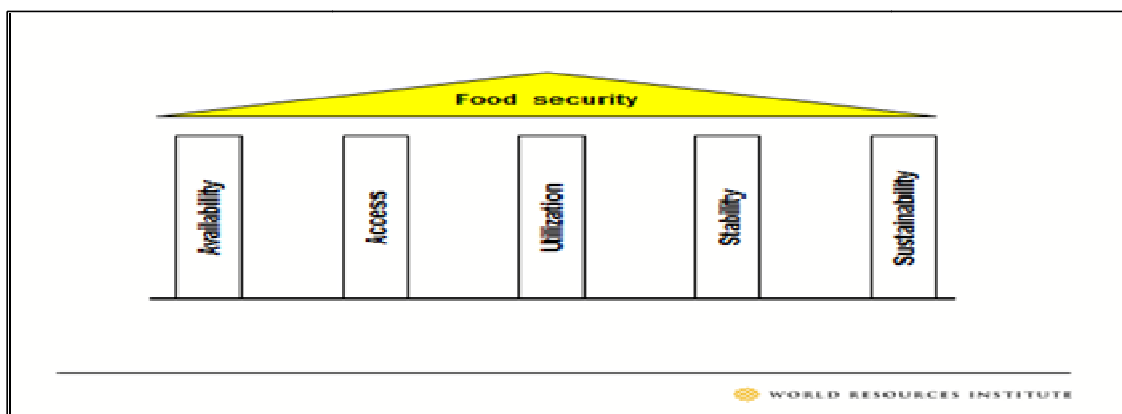
Third, the world needs to reduce agriculture's impact on the environment and natural resources. Agriculture is a major contributor of greenhouse gas emissions, the largest consumer of freshwater among economic sectors, and the largest cause of conversion of natural ecosystems. Going forward, agriculture will need to adapt to a changing climate in order to ensure adequate food production. At the same time, when done right, agriculture can provide numerous benefits beyond food production and jobs including building material, soil fertility, and more.

Craig Hanson (2013) the convergence of these three needs poses one of the paramount challenges of the next several decades: How can the world adequately and fairly feed a growing population in a manner that alleviates poverty and advances economic development while reducing pressure on natural resources? This Background Paper provides several perspectives on answering this question. Through a number of core propositions, it makes the case that integrating sustainability considerations into a post-2015 global goal on food security and nutrition will be critical to the goal's achievement. It continues by recommending several targets along with their associated indicators and means of implementation that would incorporate some important sustainability considerations into such a food security goal. From the *Table 1* we can observe the targets of proposed food security that integrate sustainability and balance of food production and human development for future generations.

It can be observed from the above table that the food security targets which are mentioned in the table is very important as these issues need to take in to serious concern by the governments and necessary steps should be taken by the policy makers as well as extensive research has to be taken up with support from the governments and nation builders. According to the United Nations Food and Agriculture Organization (FAO), "food security exists when all people, at all times, have physical and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life." Implicit in this definition is the recognition that food security is multi-dimensional. There have been many formulations of what the components of food security are. For instance, the Committee on World Food Security identified four main dimensions or "pillars": (a) Availability is ensured if adequate amounts of food are produced and are ready to have at people's disposal. (b) Access is ensured when all households and all individuals within those households have sufficient resources to obtain appropriate foods (through production, purchase, or donation) for a nutritious diet. (c) Utilization is ensured when the human body is able to ingest and metabolize food.

Table 1: Proposed Food Security targets that Integrate Sustainability

Target relative to 2015	Indicator	Metric
By 2030, reduce the rate of food loss and waste by 50 percent	Share of food produced or harvested that is lost or wasted between the farm and fork	Percent of food loss and waste
By 2030, reduce the greenhouse gas emissions from food production by 25 percent	Total greenhouse gas emissions from food production, including both crops and livestock	Tons of carbon dioxide equivalent
By 2030, reduce the water- intensity of agricultural production by 25 percent	Tons of food produced per cubic meter of irrigation water consumed to generate those tons	Tons per cubic meter of water

**Figure 1:** Pillars of food security

Nutritious and safe diets, an adequate biological and social environment, and a proper health care to avoid diseases help achieve adequate utilization of food. Stability is ensured when the three other pillars are maintained over time. Several experts have noted the need for a pillar on environmental sustainability, where food production and consumption patterns do not deplete natural resources or the ability of the agricultural system to provide sufficient food for future generations (Richardson, R. B., 1998). Therefore, for the purposes of this Background Paper, we identify five pillars of food security (Figure 1).

Achieving food security will require increasing not only food access but also food supply. Given the unequal distribution of food today around the planet, one might think that food security could be achieved by only improving food access and ensuring that the food already generated is distributed more equally among the world's population. Yet, even if all of the food available in the world today were equally distributed on a caloric basis across the entire projected population of 2050, those calories would still fall short of the FAO's "average daily energy requirements" by more than 200 kilocalories (kcal) per person per day, assuming none of those food calories were lost or wasted between the farm and fork (Figure 2). The shortfall would be more than 900 kcal per person per day if the current rate of food loss and waste—24 percent of all produced calories per year—were to remain unchanged in 2050. The world will need to increase food supply as part of the solution to food security—and in an increasingly resource-constrained world, this implies increasing productivity. In turn, access is partly dependent on availability. For example, food supplies in a region can become constrained when crop yields decline due to extended heat waves or lack of sufficient water to irrigate crops. As a result, the price of food can increase or access to locally produced food can become constrained, thereby increasing dependence of local populations on food imports. And when this occurs in regions where people do not have sufficient income, economic access becomes an acute food security issue. Likewise, sustainability by definition underpins long-term stability. If food production is not sustainable from an environmental perspective, then it is not stable over time.

FOOD SECURITY IN INDIA

Food security act is necessary because since 2010-20 has been declared as the decade of innovation. An essential pre-requisite for achieving the position of an innovation superpower is providing an opportunity to every newborn child to achieve his innate genetic potential for physical and mental development. Every fourth child in our country is characterised by low-birth weight due to under-nutrition. Nearly 45% of

children below the age of 5 in the country are under-weight. To become an innovation superpower, we must adopt a whole-life cycle approach in our plans for food for all and forever. We must not deceive ourselves into believing that by establishing 14 innovation universities, we will become an innovation superpower. Nutrition and education are the pathways to a happy country. Food security at the level of each individual child, woman and man is the first requirement for a healthy and productive life. Jawaharlal Nehru had said in 1947, "everything else can wait, but not agriculture". These words are more relevant today than 65 years ago, since our population has grown from 300 to 1,200 million during this period. The three major components of sustainable food security are availability of food in the market, which is a function of internal production and if necessary imports; access to food, which is a function of adequate purchasing power and absorption of food in the body, which is a function of clean drinking water, sanitation and primary healthcare. The proposed National Food Security Act is being designed to ensure economic access to food through legal entitlement, while factors relating to production and absorption are proposed to be included as essential enabling provisions.

Hindustan Times (2013) in industrialised countries, farming is a food or other commodity-producing machine, while in India; farming is the backbone of the livelihood security system for over 60% of the population. In industrialised countries, less than 3% of the population is engaged in farming and may be called "farmer-consumers." However, in India, over 60% of the population belong to the "farmer-consumer" category. Our 80% of the over 115 million farming families belong to the small (2 ha and less) and marginal (1 ha and less) categories. There is widespread malnutrition in the families of small and marginal farmers. Therefore, increasing the productivity, profitability and stability of small farms will make the largest contribution to overcoming hunger caused by inadequate purchasing power.

Some of the essential components of a National Food Security Act should include: (a) A lifecycle approach, to legal entitlements, starting with pregnant mothers. A "First 1,000 days Child Nutrition and Development Programme" should be organised to provide nutritional support to pregnant women so that the new born has an opportunity to express his innate intellectual potential. (b) An enlarged food basket that will include nutritious millets in the Public Distribution System, thereby achieving double benefits of improving nutrition security and providing a market for the crops of dry land farmers and tribal families. (c) A decentralised procurement system and a national grid of community grain banks, rural go-downs and storage

structures. (d) Increasing agricultural productivity to meet the food requirements of 1.2 billion human population. (e) A food-cum-drug approach in the case of diseases such as HIV/AIDS, tuberculosis and leprosy where prolonged treatment is necessary. (f) The National Food Security Act is our last hope in getting coordinated action initiated in achieving the goal of sustainable food security.

According to Agriculture Minister Sharad Pawar, India is growing more food than ever before. Last year's 4% growth target was surpassed coming in at 5.65%, with production of wheat, pulses and oil seeds reaching record highs. Pravin Patkar, (2011) this year the Food Corporation of India is expecting to procure 25 million tons of wheat, well beyond the usual 7 million ton benchmark. Patkar elaborated on India's food security, highlighting obstacles impeding India's ability to meet its citizens' current and future food requirements. The Green Revolution, which Patkar called the chemicalization of agriculture, was behind an enormous boost in crop yields. It took off in the late '60s, adopting intensive farming methods dependent on chemical fertilizers, insecticides and pesticides as a means to increase production. "From a food deficit country approaching the developed world with a begging bowl; India became an occasionally food exporting country with impressive buffer food stocks." And unexpectedly, increased crop yields didn't always result in ending hunger. "Hunger continued as a result of mishandling of food rations by the Public Distribution System." "Additional problems included unsatisfactory macro-economic and procurement policies; poor transportation and storage facilities, deficient food subsidies and the large scale corruption rampant in the system."

Pravin Patkar, (2011) A study by the New Delhi-based Indian Agricultural Research Institute (IARI) estimated that with every one degree Celsius rise in temperature, around 4 to 5 million tons of India's wheat production will be lost. A recent assessment by the International Food Policy Research Institute (IFPRI) estimated that 1.6 billion people in South Asia will be threatened by climate change causing decreased crop yields. A gigantic problem to tackle, but Patkar made some suggestions for achieving sustainable food security now and in the future. Organic farming, without the use of soil and water destroying chemicals; drip irrigation that didn't waste water unnecessarily; and grain and seed banks created and managed by villagers. The necessity for innovations in land utilization and management, water conservation, renewable energy and the control of greenhouse gas emissions was also mentioned. In essence, Patkar suggested that a major metamorphosis is needed. Although, in the short term the battle against famines and starvation deaths has

been won and the country's grain coffers are brimming. However, a much bigger challenge lay ahead.

Although India grows enough food (food stock of 50 million tonnes projected in 2009) and its GDP has more than doubled since 1991, it is home to about 25 percent of the world's hungry poor (FAO 2009, Hindustan Times 2009). Forty eight percent of children under the age of five years are malnourished in India, which is over a third of the world's 150 million malnourished under-fives. Also over half of all women aged between 15 and 49 years are anaemic, and 30% of children are born underweight. It is estimated that 3% of GDP is lost by physical impairments caused by malnutrition in Asian countries (Economist 2010). India ranked a high of 65 in 2009 with a global hunger index of 23.9, which is higher than many countries in sub-Saharan Africa including Sudan. The India State Hunger Index (ISHI) score was calculated for 17 major states and covering over 95 percent of the population (Menon et al 2009). ISHI has been computed using calorie undernourishment cut off of 1,632 kcals per person per day.

Ruth Kattumuri (2011) Security (Food and Human) is one of the major challenges confronting the world today. Food security is inherently interlinked with other current global challenges of economy and climate change. Food security is said to exist when all people, at all times, have physical, social and economic access to sufficient, safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life. Performance of PDS not only varies across states but more so between rural and urban centres. Involvement from parents and other groups in some centres contributes toward better performance; however efforts are not co-ordinated or uniform across state and urban-rural public distribution systems. Scaling up involvement of multiple stakeholders including teachers, parents, civil societies, private organisations and religious communities would enhance accountability and performance of PDS in India. Student volunteers, who might be empowered to voice any concerns, from across the country could be provided with opportunities to participate in the programme to enable regular monitoring and better implementation.

The government has prioritised the development of technology, such as the unique identity card, in order to tackle misuses of the system and effective implementation of the scheme. The government is also planning the introduction of Global Positioning Systems and Radio Frequency Identification Devices in the 11th five-year plan to track food grains and reduce leakages. Availability of PDS documents in

the public domain; introduction of computerised records, biometrics and smart cards are being developed for enabling monitoring and evaluation. The e-Public Distribution Monitoring system (e-PDMS) has also launched for enhancing transparency, efficiency and accountability (Rao, Sultan and Siddiqui 2008). This program aims to cover the entire food supply chain under PDS including Food Corporation of India (FCI), State Civil Supplies Corporation, State Warehousing Corporation and Lead societies.

CONCLUSION

With a network of more than 400,000 Fair Price Shops (FPS), the Public Distribution System (PDS) in India is perhaps the largest distribution machinery of its type in the world. PDS is said to distribute each year commodities worth more than Rs 15,000 crore to about 16 crore families. This huge network can play a more meaningful role if only the system is able to translate into micro level a macro level self-sufficiency by ensuring availability of food grains for the poor households. Despite the rapid economic growth that India has experienced in the last decade or so, malnutrition and hunger continue to present key policy challenges.

Hunger and malnutrition continue to remain high in India. About twice as many children in rural areas are likely to be underweight in comparison with children in urban areas. There are variations in the levels of malnutrition by gender and caste. Girls from lower castes are likely to have higher levels of malnutrition. On the other hand, children from wealthy families can also be under nourished due to poor feeding practices and food shortages. Malnutrition is associated with half of all child deaths and a quarter of cases of diseases in India. Hence the need for public distribution systems remains. Despite making significant economic progress, food insecurity levels remain high in India, with an estimated 21% of the population being food insecure.

REFERENCES

- [1] Bobenrieth, E., Wright, B. and Zeng, D. (2012) Stocks-to-use ratios as indicators of vulnerability to spikes in global cereal markets. Paper presented at the 2nd Session of the AMIS Global Food Market Information Group. FAO, Rome, 3 October 2012.
- [2] Bush, R., (2010) "Food Riots: Poverty, Power and Protest." *Journal of Agrarian Change* 10(1): 119-129.
- [3] Craig Hanson (2013) 'Food Security, Inclusive Growth, Sustainability, and the Post-2015 Development Agenda,' Background Research Paper, High Level Panel on the Post-2015, Development Agenda, World Resources Institute.
- [4] Economist (2010). The Millennium Development Goals. *The Economist*, 25th September 2010. p. 31-34.
- [5] FAO (2009). 'The State of Food Insecurity in the World,' Food and Agriculture Organisation of the United Nations, Rome, 2009.
- [6] GWP (2013) 'Water and Food Security: Experiences in India and China,' publication of the GWP Technical Committee Global Water Partnership (GWP), Sweden.
- [7] Hertel, T. (2010) The global supply and demand for agricultural land in 2050: a perfect storm in the making? Presidential Address presented at the Annual Meeting of the Agricultural and Applied Economics Association. Denver, 25-27 July 2010.
- [8] Hindustan Times 2009. India 65th on Global Hunger Index for 2009, 14th October, 2009, <http://www.hindustantimes.com/India-65th-on-Global-Hunger-Index-for-2009/Article1-465414.aspx>, accessed on 3rd Nov, 2013.
- [9] Hindustan Times (2013) Food Security Act is Necessary for Sustainable Development, Retrieved from <http://www.hindustantimes.com/StoryPage/Print/660449.aspx?s=p> (Accessed on 12th November, 2013).
- [10] Menon Purnima, Anjol Bhaskar and Anil Deolalikar (2009). The India State Hunger Index: Comparisons of hunger across states. IFPRI, Welt Hunger Hilfe, UC, Riverside. Washington DC, Bonn, Riverside.
- [11] Peter Rogers, Alan Whall (2003) 'Effective Water Governance,' Global Water Partnership Technical Committee (TEC) Background Paper No. 7, Global Water Partnership (GWP), Sweden.
- [12] Pravin Patkar, (2011) 'Food Security For Sustainable Development, A Summary Report of ICSTSD '11 Disasters Caused by Nature or Poor Governance? International Conference on Society, Technology and Sustainable Development, Jun 5th, 2011, Amritapur.
- [13] Richardson, R. B., (1998) "Ecosystem Services and Food Security: Economic Perspectives on Environmental Sustainability." *Sustainability* 2010(2): 3250-3548; Daily, G., P. Dasgupta, B. Bolin, P. Crosson, J. du Guerny, P. Ehrlich, C. Folke, A. M. Jansson, B.-O. Jansson, N. Kautsky, A. Kinzig, S. Levin, K.-G. Mäler, P. Pinstrup-Andersen, D. Siniscalco, and B. Walker. "Food production, Population Growth, and the Environment." *Science*, 281, 1291-1292.
- [14] Swaminathan M.S (2011). Food Security Act is Necessary for Sustainable Development, February 09, 2011, Hindustan Times.

- [15] Ruth Kattumuri (2011). 'Food Security and the Targeted Public Distribution System in India,' Asia Research Centre, Working Paper 38, Asia Research Centre (ARC), London.
- [16] Rao, MV, Sultan, M. and Siddiqui, NA. 2008. Public Distribution Monitoring system (e-PDMS). In Compendium of e Governance Initiatives in India. Gupta, P. and Bagga, K.R. (editors). Computer Society of India. University Press, 2008.
- [17] Schmidhuber, J. (2012) The Agricultural Market Information System AMIS: what it is, where its focus lies and why. Paper presented at the American Academy of Arts and Sciences Conference, Vancouver. 15–21 February 2012.
- [18] United Nations (UN), (2010) 'World Population Prospects: The 2010 Revision, Highlights and Advance Tables, Department of Economic and Social Affairs, Population Division, Working Paper No. ESA/P/WP.220, United Nations, New York, 2011. 9.3 billion People in 2050 reflect the medium growth scenario.
- [19] Wright, B. D. (2011) The economics of grain price volatility. *Applied Economic Perspectives and Policy*, 33(1): 32–58.

