

AGRICULTURE AND FOOD SECURITY IN INDIA

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ABSTRACT

Food insecurity is multi-dimensional and is influenced by factors related to unavailability, inaccessibility and inadequacy of food. In India, there is evidence of each of these aspects in one form or another contributing to food insecurity. Over the past two and half decades there has been a significant change in India's trade and economic structure. Public and private interventions in the early 1990s including trade liberalization, increased capital mobility, and development and adoption of new technological innovations are helping to revitalize India's agriculture, commercial and service sectors. In spite of the global economic crisis during the past few years, India's economy continued to grow and the country has emerged as one of the fastest growing economies in the world with accelerated annual growth rates around 7- 8 percent. Despite the unprecedented economic growth, India's growing population means that ensuring a continuous supply of food and maintaining national food security remains a major challenge for the government of India. So, effective measures are needed to achieve the goal of hunger free, food and nutritional secure India. Food security act is an opportunity and this can be regarded as appreciable step in India. But the framework of poverty estimation and identification is complex and impractical. Proper distribution and procurement are the issues in the way of implementation of the act. The need of the time is simplified, transparent and equitable framework for practicability of the act. The State and Central governments are taking positive steps to address the challenges of food security.

Keywords: Agriculture, Food security, India

INTRODUCTION

The concept of Food Security originated in the mid 1970s, during the time of the global food crisis (FAO, 2003). Initially this concept was fairly confined to the problem of food supply (supply side). During this period the issue food availability and price stability of basic food products were the main focus at both national and international levels. The initial definition of food security thus reflected the global concerns of the 1974 World Food Summit and defined food security as: "*Availability at all times of adequate world food supplies of basic foodstuffs to*

sustain a steady expansion of food consumption and to offset fluctuations in production and prices". The most significant factor that led to revision of the definition of food security was experiences from the green revolution. The green revolution helped increase production of staple food crops but did not reduce malnutrition. As the issues of famine, hunger and food crisis were examined deeply, the difficulty of securing access to food supplies by vulnerable groups was a major concern. These problems stemmed from the lack of effective demand (demand side). This brought about a whole new dimension to the issue of food security, implying that demand is just as important as supply for food security. In 1983, FAO expanded its concept to include vulnerable people securing access to available supplies, stating that food security meant "ensuring that all people at all times have both physical and economic access to the basic food that they need." Later, the 1996 World Food Summit redefined food security to take demand, vulnerability and nutritional aspects into account. At the summit, countries agreed that "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 lifestyle". In 2002, an FAO Expert Consultation on food security gave a working definition of food security: Food security exists when all people, at all times, have physical, social and economic access to sufficient, safe and nutritious food which meets their dietary needs and food preferences for an active and healthy life. Household food security is the application of this concept to the family level, with individuals within households as the focus of concern (FAO 2002 Ch. 2). Since then, several definitions have been provided by different organisations such as the World Bank, FAO and UNDP's Human Development Report. In general, food security is defined as economic access to food along with food production and food availability. Food availability alone, therefore, does not ensure food security; access to food is equally important.

An FAO report, August 2008, defines food security in terms of the following four key aspects:

- **Availability**— Sufficient availability of food with the nation through domestic production, net imports (commercial or food aid) and carry-over of stocks.
- **Accessibility**— Individual's capability to purchase food and to be able to procure food through safety nets or availability.
- **Utilization**— Consumption of food by the household in a proper form. It also takes into account food preparation, storage and utilization, food safety, nutritional safety and dietary balance.
- **Vulnerability**— Vulnerability of the population to food insecurity due to physiological, economic, social and political reasons.

Thus, food security is ensured in a country only if (1) enough food is available for all the persons (2) all persons have the capacity to buy food of acceptable quality and (3) there is no barrier on access to food.

The Food Security Situation in India

India is the second most populated country in the world with a population of more than 1.15 billion people (Registrar General & Census Commissioner of India, Ministry of Home Affairs, GOI, 2010-11). Geographically, India is divided into 28 states and seven union territories with diverse landscapes, agro-ecosystems, cultures, religions and socio-economic status. India is predominantly an agrarian country supporting the livelihood of nearly 60 percent of the population (Ministry of Statistics and Programme Implementation, GOI, 2010). More than 60 percent of the people in India live in rural areas and are directly dependant on agriculture and related activities for their daily livelihood and well being. At present, agriculture and allied sectors contributes around 13.7 percent (2012-13) to the national Gross Domestic Product (GDP) (Ministry of Statistics and Programme Implementation, GOI, 2014).

In India, National Food Security Mission was started in 2007. The Mission is fully funded by the Union Government. There is mismatch between the foodgrains production and population growth in India due to various factors. Over a period of time, foodgrains production increased gradually, but the population growth was faster than that. There is shortage in food at national and state level. The average growth rate for yields of foodgrains had declined from 3.2 per cent in 1980s to 0.6 per cent during the Tenth Five Year Plan period due to the limitation of the cultivated land. A majority of the districts are having low soil conditions, which lead to low yield rate in the districts. The main aim is to achieve an increase in yield in the lower yield districts of India to have food security for the future generation.

Major climatic conditions of the world are present in India, ranging from coastal to arid to semi-arid to highland systems, thus allowing the cultivation of a wide range of crops. Even though Agriculture's share of national GDP has decreased over the years (Table 1), agriculture continues to be the most important sector for national food security and poverty alleviation.

Table 1: Percentage Growth of Gross Domestic Product (GDP) at 2004-05 Prices

Sectors	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13
Agricultur	19.0	18.3	17.4	16.8	15.8	14.6	14.5	14.1	13.7
Industry	27.9	28.0	28.7	28.7	28.1	28.3	28.2	27.5	26.7
Services	53.0	53.7	54.0	54.4	56.1	57.1	57.3	58.4	59.6

Source: Central Statistics Office, Government of India.

Since independence in 1947, the Indian government has placed a high priority on agricultural research and development. Further, with the adoption of new technologies and the realization of the green revolution, the overall agricultural sector in India has grown rapidly (Dandekar, 1988). With the policy reforms and new trends of globalizations, during the last decade, the economy in India has been booming. The country has achieved an impressive economic growth rate of more than 8% annually. This trend is continuing and, according to World Bank estimates (Global Development Finance Report, 2009), the Indian economy is grow at 7 to 8 percent in 2010 and 2011 and beyond, which would make it one of the fastest-growing economies in the world. This impressive growth however, is mainly due to the expansion of the services sector. The share of the agricultural sector in national GDP has been declining (Table 1) and government is concerned regarding the food security situation for the growing population. Food security continues to remain a major challenge for the Indian government.

Since the advent of the Green revolution in the early-'70s, India has avoided famine even during adverse weather conditions and achieved self-sufficiency in foodgrain production. The foodgrain production had increased from 50.1 million tonnes in 1950-51 to 264.4 million tonnes in 2013-14. This implies a nearly five-fold increase over the period. Out of that, rice, wheat and pulse production had very eminent position in the Indian agriculture. The vast majority of the Indian people consume rice and wheat. In this context, both the food items would be in great demand for the future generation. The area and production under rice had recorded 43.9 million ha. and 106.3 million tonnes during 2013-14. The area and production under wheat had recorded to 31.3 m. ha. and 95.8 million tonnes, and the pulses also registered to 25.4 m. ha. and 19.6 million tonnes.

India has a large production base with a variety of crops and agricultural products. The production, however, has become stagnant in key staple and food security crops such as rice and wheat. Population and consumption needs, on the other hand have been increasing steadily. It is noted that the consumption pattern changed over the period. The farmers had received higher production with the lowest area under cultivation by using modern technology in the farm field (Economic Survey, 2014). The per capita availability of cereals and pulses had witnessed a positive trend for the past three decades, and the net availability of cereals had increased from 417.6 kg per year in 1971-72 to 468.9 kg per year in 2013-14. But the pulses had declined from 51.2 kg to 41.9 kg per year in the same period. This National trend is threatening food and economic well-being of the millions of rural and urban people in the country.

Increased investments and policy reforms have not percolated to the grass-roots level and to states where poverty is acute and where labor is used intensively (Bihar, Orissa, Madhya Pradesh, Jharkhand, Rajasthan and Uttar Pradesh). As a result there are many concerns over the

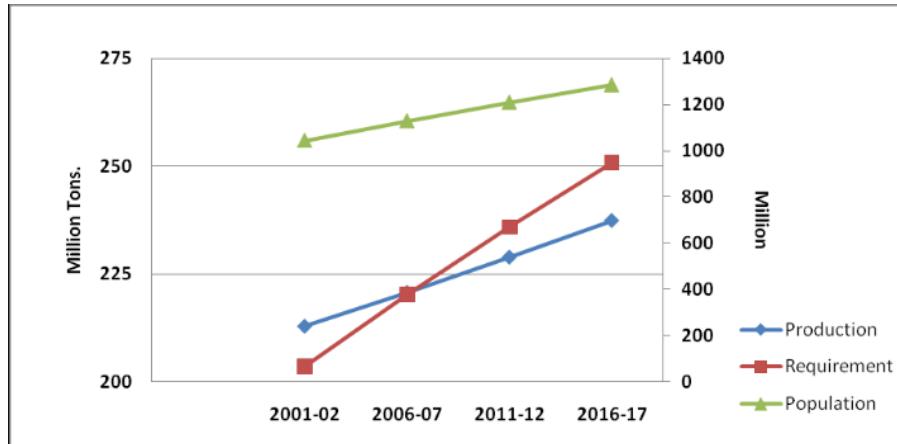
slow pace of agricultural growth at both national and state levels, especially with the increase in demand for food for the growing population. Thus, there is a critical need to achieve state and national level food security.

The prevalence of hunger is one of the biggest challenges to the Indian economy. In India, the per cent share of hunger had declined by 8.5 per cent from 25.5 per cent in 1990-92 to 17.0 per cent in 2012-14 (FAO, 2014). The majority of the states were facing that problem in the current situation. The calorie and protein intake of the poor had declined consistently during 1983-84 to 2004-05. The Eleventh Five Year Plan (2007-12) stated that the absolute weight and height of the people had not improved over the three decades in India. Rural calorie consumption per day had fallen from 2221 calories in 1983-84 to 2047 calories in 2004-05; it had declined to 8 per cent. But in urban areas, calories consumption had fallen by 3.3 per cent from 2080 to 2020 calories in the same period. In rural areas, about 81 per cent of the people do not consume the recommended levels of food and for urban areas as the figure is 57 per cent. The share of food consumption in total expenditure had fallen during the three decades (India Today, 2011). To solve the problem in India, the Government of India has been implementing National Food Security Mission.

Food insecurity is multi-dimensional and is influenced by factors related to unavailability, inaccessibility and inadequacy of food. In India, there is evidence of each of these aspects in one form or another contributing to food insecurity. Although, India experienced a rapid growth in food production in the 1980s for cereal grains and pulses, this growth has become slow and stagnant since the early 1990s.

According to 2010 data from the Ministry of Agriculture in India, the food requirement for next year is estimated to exceed food production by 7 million tons (Figure 1). The government of India is oriented toward food self-sufficiency and therefore importation of food is discouraged. But unless food production is intensified within the country to meet this demand, there will not be enough food for the rapidly growing population. Low and volatile agricultural growth rates and the recent escalation of agrarian crisis in several parts of India are not only a threat to national food security, but also to the economic well-being of the country. This lag in production is due to a number of reasons (Table 4).

Fig. 1: India Food Production, Food Requirement and Population (2001-17)



Source: Ministry of Agriculture, India (2010)

Table 4: Key Constraints to Agricultural Production in India

	Cause	Result	D e c r e a s e i n P r o d u c t i o n
1	Decreasing soil fertility and quality	<input type="checkbox"/> Decrease in crop response to inputs and poor growth in crops	
2	Land lost to urbanization	<input type="checkbox"/> Decrease in land available for agriculture	
3	Lack of access and slow adoption of improved and high yielding varieties	<input type="checkbox"/> Decrease in resistance to pests	
4	Poor access and inefficient use of agricultural inputs and technology	<input type="checkbox"/> Degradation of soil quality	
5	Poor water management	<input type="checkbox"/> Prone to floods and droughts and fertilizer	
		<input type="checkbox"/> Lack of water for agricultural production	
		<input type="checkbox"/> Poor response by improved seed and fertilizer	
6	Poor Infrastructure	<input type="checkbox"/> Lack of access to inputs and markets	
		<input type="checkbox"/> Inability to operate agricultural machinery	
7	Reduced quality of agricultural research	<input type="checkbox"/> Unsustainable growth in Agricultural systems	
8	Dysfunctional extension system	<input type="checkbox"/> Poor technology and information dissemination	
9	Lack of Investment in agricultural	<input type="checkbox"/> Lack of new agricultural innovations and	

	research and education	technologies	
1 0	High input cost	<input type="checkbox"/> Reduced of access to inputs	
1 1	On-farm and off-farm losses of agricultural outputs	<input type="checkbox"/> Loss of Income	

Accessibility to food is mainly constrained by an increase in retail price of food products and a decrease in income levels. The government of India has been attempting to support low income groups, protecting them from increases in food prices by purchasing grain from farmers and selling them at subsidized prices though the Public Distribution System (PDS). The current situation reflects the conflicting policy objectives of the government. On the one side, there is a need to provide food to consumers at an affordable price and on the other side farmer's incomes and incentives need to be increased. The situation right now is transferring the increases in farm prices to the consumers in the form of increased food prices.

Policies for Improving Availability of Food

- There are basically six factors which need to be focused upon in the short and medium term. These are: (i) infrastructure; (ii) land and water management; (iii) research and extension; (iv) inputs including credit; (v) marketing including price policy; and (vi) diversification and development of the rural non-farm sector. Institutions have to be developed with regard to all these aspects.
- One major reform needed in the agriculture sector relates to reduction in subsidies and increase in investments.
- Increase in public and private investment is crucial for enhancing agricultural growth.
- Deterioration in soil quality and water shortages, including ground water depletion, that decline in growth of agricultural productivity, therefore, land and water management should be given the first priority.
- Investment in irrigation, watershed development, and water conservation by the community are needed by way of water management.
- In order to improve soil quality, the government's nutrient based subsidy is a move in the right direction.
- The most important problem for farmers is output price fluctuations. There is a big gap between producer prices and consumer prices.
- Diversification of land into non-agricultural purposes and non-food crops may also threaten food security. However, if yields are increased on land growing foodgrains and food crops, some land can be safely diverted into non-food crops.

CONCLUSION

Food security of a nation is ensured if all of its citizens have enough nutritious food available, all persons have the capacity to buy food of acceptable quality and there is no barrier on access to food. The people living below the poverty line might be food insecure all the time while better off people might also turn food insecure due to calamity or disaster. Although a large section of people suffer from food and nutrition insecurity in India. To ensure availability of food to all sections of the society the Indian government carefully designed food security system.

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