

## Value Addition of Agricultural Produce: A Road towards Food Security

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**Abstract:** No living creature can live without food as food is necessary for survival. Even every food plant gets its food supplement from the earth. Undoubtedly, food security is one of the most burning topics of the current world. But in past some decades, the attainment of food security has become the biggest challenges for the country in the new millennium. As regards to the term food security, it reasonably implies that all people at all time have access to safe and nutritious food to maintain health to lead active life. In this connection, it may be well asserted that our country has remarkably progress in term of food production in recent plan periods. Indian Agriculture has made massive progress in the past 50 years, but food security has always been on the priority. The modern concept of 'food security' goes beyond mere increase in food production. The rapid increase in urbanization and growth in the production of agricultural produce has affected the dietary habits of people to a great extent there has been a significant change in the consumption pattern of people. Value addition has become the need of hour. This paper focuses on how the value addition to agricultural produce can lead towards food security in which the Food Processing Industries play a major significant role. It is important to appreciate that 'growing' and 'processing' are complementary and thus need to be promoted together. Considering the growth in the production of major agricultural produce and its value addition through food processing sector can led to the most effective and economical way of increasing per capita food availability by reducing the agricultural wastages which in turn will lead towards food security.

**Key Words:** Agriculture, Consumption Pattern, Food Security, Food Processing, Growth, Value Addition.

### Introduction

Elimination of hunger and attainment of food security have been important goals of the international community. Till seventies, the achievement of self sufficiency was given the priority in developing countries. But now, the approach has been changed. Even the weak group is given importance in assessing the food security because food is the most important requirement of every section. Mere availability of food sometimes is not enough and it does not mean that everybody is having access to a fair share of it or that everyone has an adequate diet (*Oshaug et al., 1994*). Importance of maintaining food security has been abundantly recognized by the world over since long. 'Self Sufficiency' in production of food grains is often treated as the first step towards attaining food security in every country as well as in India. The reason for this stress can be traced to a large size of population in the country like India. Food supply trend determines the availability of food, hence agricultural growth is essential for meeting food needs as agriculture in our country is not only a means of production, but also a means of consumption.

Agriculture is one that produces abundant of food without depleting the earth's resources or polluting its environment. India is an agriculture-based country with 329 million hectares of land

area, of which 143 million hectares are cultivated. Over the years, the significant progress has been made by India in increasing the food grains production. The agricultural production has kept the pace of higher growth. During the last 50 years and more, India has made immense progress towards security of food and livelihoods. Since 1950, the population almost tripled, but food grain production more than quadrupled. There was thus substantial increase in food grains per capita. India has been growing at an annual average rate of above six per cent since economic reforms were initiated in 1991 but during the last decade, agricultural growth has deteriorated, which is a cause of worry. The food security has become increasingly important globally as well as at domestic front as the global food grains production is not keeping pace with increasing population (*Singh et al, 2008*).

The world food security was generally understood "to imply arrangement whereby the population of the developing countries would be assured of a minimum level of food grains supply in years of normal as well as poor harvests (*Reutlinger, 1977*). The Indian agriculture has come a long way; there are certain implications that have to be addressed for national and nutritional security. The Indian agriculture has diversified into high value crops, raised productivity and the enhancement in the application of modern

technologies. Thus, this paper attempts to examine the need of food security in the context of net availability of food and the changes that are taking place in the consumption pattern of people of India. The paper further examines the value addition of agricultural products through food processing industries.

### Concept of Food Security

Food security is a complex issue. Food security essentially means that all people at all times have access to safe and nutritious food to maintain health to lead active life. According to FAO (1983), the fundamental concept of food security implies that “all people at all times have both physical and economic access to basic food they need”. These are also a demand as well as the supply side aspects of food security. On the demand side, there are three A’s: availability, access and ability. The supply side issue of food security considers three P’s: crop pattern, food and agricultural policy and food production. In order to define the food security, one has to consider the demand for as well as supply of food. According to the World Bank, the food security can be defined as “Access by all people at all times to enough food for an active healthy life”. However, the meaning and concept of food security has been experiencing a transitional change during the last five decades.

In the nineteen fifties, food security was considered fundamentally in terms of production. It was understood that adequate production will assure adequate availability of food in the market as well as in the household. Amartya Sen added a new dimension to food security and emphasized ‘access’ to food through what he called “entitlement-a combination of what one can produce and exchange in the market, along with the state or other socially provided supplies”.

However, the meaning and concept of food security has been experiencing a transitional change and has become wider with time. Accordingly, food security implies livelihood security at the level of each household and all members within, and involves ensuring both physical and economic access to balance diet, safe drinking water, environment sanitation, primary education and basic health care. Thus, the concept of food security has evolved during the last some decades to include not only food availability, but also economic access to food and biological absorption of food in the body. In fact, adequate per capita availability of food is a function of the balance between food production on the one hand, and growth in population and purchasing power, on the other (Swaminathan, 2009).

### Need of Food Security

The need of food security was felt due to the gaps in food production and non

availability of sufficient food from domestic resources. The growth in food grain production has stagnated during recent past while the consumption need of the growing population is increasing. The agriculture growth has kept the pace of higher growth but not higher than the population growth rate. Also the growth in the food grain production has stagnated during recent past while the consumption need of the growing population is increasing. Large proportions of the underfed population starve not because of the general food shortage but due to insufficient access to food supplies or insufficient income to purchase food. Availability of food at the country or local level does not mean that all people within the geographical unit are food secure. Food Security implies that food intake must be adequate both in qualitative and quantitative terms. However, the issue of quality of diet has received little attention in the food security debate at all levels (Bose *et al*, 2007).

### Data and Methodology

The study is based on secondary data collected from the different sources such as government publications, reports, websites and published papers. The entire data related to area, production and yield of crops have been compiled from Directorate of Economics and Statistics, Department of Agriculture and Co-operation, Ministry of Agriculture. The study has been divided into 10<sup>th</sup> and 11<sup>th</sup> plan periods. Beside this, the data related to the contribution and growth of Food Processing Industries (FPI) has been taken from National Accounts Statistics, MOSPI.

### Present Status of Food Production in India

India is facing many challenges, among which the achievement of economic development, maintaining the price stability, poverty alleviation and food security are the main challenges. In the global level, food security for all requires that supply of food be enough to meet the total demand for food. India has witnessed remarkable increase in food production of the country during the effect of Green revolution with the spectacular growth in production of rice and wheat. Various research workers have presented different views in terms of country’s growth rates of food grain outputs. India is self sufficient in foodgrains production. The nation produces and consumes about 170 million metric tons of cereals each year including seed and waste (Bhalla, *et al*, 1999). A comprehensive analysis of agricultural performance and productivity of Indian agriculture by Kumar (2001) has revealed that the changes in cropping pattern have been taking place as a result of substitution of low productivity crops by those which have shown impressive performance in productivity growth.

**Table 1: All India Average Annual Growth rate of Area, Production and Yield of Principal Crops.**

Crops	Average Annual growth (%) 10 <sup>th</sup> plan (2002-03 to 2006-07)			Average Annual Growth (%) 11 <sup>th</sup> plan (2007-08 to 2011-12)		
	Area	Production	Yield	Area	Production	Yield
Rice	-0.39	1.25	1.17	0.18	2.69	2.41
Wheat	1.30	1.11	-0.32	1.31	4.64	3.29
Total cereals	0.07	1.21	0.74	-0.03	3.79	3.76
Gram	3.60	4.70	0.28	2.32	4.62	2.27
Pulses	1.31	2.66	0.65	1.36	4.28	2.78
Food grains	0.29	1.29	0.59	0.19	3.81	3.55
Sugarcane	3.98	4.90	0.66	0.04	0.99	0.87
Oilseeds	3.55	7.99	3.53	-0.07	5.54	5.32
Cotton	0.57	20.01	19.40	5.97	10.46	3.93
Ground nut	-1.65	3.61	4.32	-0.86	15.82	13.91

Source: Directorate of Economics and Statistics, Ministry of Agriculture.

Table 1 showed a reasonable growth in area, production and yield of major crops in India. Given, the limitation is the expansion of average, the main source of long-term output growth is improvement in yield. Comparative picture in average annual growth rates of area, production and yield of different crops for two periods, 2002-03 to 2006-07 (The 10th plan period) and 2007-08 to 2011-12 (The 11th plan period) is given in the Table. The area under total cereals, food grain, oil seed have shown negative growth during 11th plan. But yields of all other major crops have recorded positive growth during 11th plan. Impressive rates of growth (more than 4% per annum) in production were observed in case of wheat, grams, pulses, oil seeds and cotton. The increase in production in the case of wheat, ground nut, and total oil seeds can be mainly attributed to increase in yields, where as the growth in production in case of grain, pulses and cotton is driven by a combination of both expansion in area and increase in productivity. This increase in foodgrains productivity can be attributed to judicious blend of improved technology of production, seeds of high yielding varieties, use of inputs like chemicals, fertilizers, credit, institutional support and favorable price policy of government.

#### Changes in Food Consumption Pattern in India

The structure of food basket is undergoing changes as diets are diversifying from basic cereals to fruits, milk and milk products, meat, fish and eggs etc. Indian's have been experiencing changes in their diets due to many reasons. Rapid urbanization and growth in working women forced people to go for convenience foods (Rosegrant, et al., 2001). India is also known for its rich cultural and food diversity. The food habits of the people of the country also differs from place to place, region to region, religion to religion and even tribes to tribes. The population growth, rise in

per capita income, urbanization, change in taste and preference, economic growth, etc. are likely to change the supply and demand prospects of foods. Providing food at the household level for ensuring food security is the major policy concern of the country (Goyal et al, 2002).

#### Value Addition to Agricultural Produce

In general, adding value is the process of changing or transforming a product from its original state to a more valuable state. Many raw commodities have intrinsic value in their original state. The value of a changed product is added value, such as processing of wheat into flour. Market forces have led to greater opportunities for product differentiation and added value to the raw material because of the increased consumer demands regarding health, nutrition and convenience. There is a large scope for mechanization in post harvest processing of agricultural commodities. The value addition of farm produce through processing is gaining importance. It is important to note that 'growing' and 'processing' are complementary. The 'growing' is futile without 'processing'. Thus, they both need to be promoted together (Yengai, 2009). The level of post production losses are 2.8%-10% in durables, 6.8%-12.5% in semi-perishables and 5.8%-18% in perishable products (CIPHET, Ludhiana). About 50% of these losses could be prevented through appropriate value addition.

The markets for value-added and processed commodities are also consistently increasing with increasing demands by consumers of these products. Hundreds of community members including Self Help Groups (SHGs) were trained in preparing value-added products, focusing particularly on those recipes that had higher local acceptability and demand. More focus would be given to primary and secondary levels of value-addition and processing. Thus, the value addition of agricultural produce has affected dietary habits of

the people to a great extent which can be seen by the success of food processing industry. Value addition is the need of the hour to maintain biodiversity and culture. Value addition to agricultural product can be accomplished in a number of different ways, but generally it falls into processing and food processing industries can play major role in it.

### Food Processing Industry and Food Security

The increased productivity is an essential component of a vibrant agricultural sector, likewise the improved post-harvest handling and processing is essential to ensure value addition, reduction in wastage and making the good quality products to reach the markets which in turn in some way also led towards food security. The food processing industry offers the creation of sustainable

livelihood and economic development for rural commodities. The ever changing lifestyle, food habits and tastes of customers' globally have altered the dynamics of this industry. Food processing benefits all the sections of the society.

With a huge production base, India can easily become a food supplier to much population which led to food availability/security in one way or the other. In recent decades, there have been substantial changes in the pattern of production and consumption. India's strong agricultural base, variety of climatic zones and accelerating economic growth holds significant potential for food processing industry that provides a strong link between agriculture and consumers. The contribution and growth of food processing sector has been shown in table 2.

**Table 2: Contribution and Growth of Food Processing Industries (in Rs. Crores)**

Sr. No:	Description	2006-07	2007-08	2008-09	2009-10	2010-11	
	GDP at factor cost of which...	35,64,364	38,96,636	41,58,676	45,07,637	48,85,954	
1.	GDP Agriculture#	5,54,395	5,89,383	5,88,757	5,93,696	6,38,301	
2.	GDP Manufacturing	5,70,458	6,29,073	6,56,302	7,19,729	7,74,162	
3.	GDP FPI	52,164	57,320	60,379	58,753	62,933	
	<b>Growth(Present)</b>						<b>AAGR\$</b>
4.	GDP at factor cost	9.6	9.3	6.7	8.4	8.4	8.5
5.	GDP Agriculture#	4.3	6.3	-0.1	0.8	7.5	3.8
6.	GDP Manufacturing	14.3	10.3	4.3	9.7	7.6	9.2
7.	GDP FPI	9.4	9.9	5.3	-2.7	7.1	5.8
	<b>Share(Per cent)</b>						<b>Average</b>
8.	GDP FPI as a share of GDP in Agriculture#	9.4	9.7	10.3	9.9	9.9	9.8
9.	GDP FPI as a share of GDP in Manufacturing	9.1	9.1	9.2	8.2	8.1	8.7

Source: National accounts Statistics, MOSPI

# includes Milk, Egg, and Fish but excludes fishing and logging.

AAGR\$: five year Average Annual growth Rate.

Performance of this sector has improved significantly in the recent years. In 2011-12, as per the Index of Industrial Production (IIP), FPI has outperformed. The food industries related to agricultural produce can add to the national wealth. It also plays a vital role in maintaining food security as it aims at value addition and reducing the agricultural losses to a great extent.

### Conclusion and Policy Implications

Importance of maintaining the food security has been abundantly recognized by the world over. The need for food security arises due to the fluctuations in food production and non-

availability of sufficient food from domestic sources. The government through investment in vital agriculture infrastructure has encouraged and motivated the growth of agricultural produce for the achievement of self sufficiency in food grain production. However, the income growth, climatic changes, globalization and urbanization are transforming food consumption, production and markets. Indian Agriculture has witnessed tremendous changes during the plan periods and in the view of changing demand for food by income and population growth, urbanization and income distribution, India has to make necessary steps towards getting food security.

The study brings out that change in consumption of food item was found encouraging.

Value Addition is the need of the hour and food processing industries are playing major role in it as it promote the economic progress and industrial development of developing country like India. It will further stimulate the agricultural production, prevent harvest losses, and thus helps in

distribution of value added products to consumers. In this context, one should remember that, India should strive to build its food industry founded firmly on its age-old culture, embracing its own native foods, food habits, and especially the food security.

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