

Role of Food Security and Sustainability of Food System

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ABSTRACT

The Food security refers to the availability of food that one can access to it. A household is considered food secure when its occupants do not live in hunger or fear starvation. Commonly the concept of food security as defined is including both physical and economic access to food that meet people's dietary needs as well as their food preferences. Most of the poor families in the world spend 85% of their total income on food. Food security, both at the national and household levels, has been the focus of agricultural development in India ever since the mid-sixties when import dependence for cereals had gone up to 16 percent. The new approach intended at maximizing the production of cereals and involved building a foundation of food security on three key elements including provision of an improved agricultural technology package to the farmers, delivery of modern farm inputs, technical know-how and institutional credit to the farmer. The performance of agriculture, however, has not been satisfactory. The share of agriculture in the Gross Domestic Product (GDP) has registered a steady decline from 36.4 percent in 1982-83 to 13.7 percent in 2015-16. But agricultural sector continues to support more than half a billion people providing employment to 52 percent of the workforce. This paper deals with how to obtain food security in India and its essentialities. Further this paper elaborately discusses issues and measures regarding food security in India.

1. CONCEPT OF FOOD SECURITY

The World Development Report (1986) defined food security as 'access by all people at all times to enough food for an active, healthy life'.

Food and Agriculture Organisation (FAO, 1983) defined food security as 'ensuring that all people at all times have both physical and economic access to basic food they need'

Staatz (1990) defined food security as "the ability to assure, on a long term basis, that the food system provides the total population access to a timely, reliable and nutritionally adequate supply of foods".

FROM THESE DEFINITIONS, THE FOLLOWING POINTS ARE EMERGED

- Food security involves adequate physical availability of food to the entire population in a country.
- People have enough purchasing power so that they can acquire the food they need.
- For healthy life the food available should be adequate in quality to meet nutritional requirements.

FOOD SECURITY IN INDIA

India is one of the fastest growing economies in the world. It is also the 12th largest economy in the world. In spite of that if anybody raised a question, whether the India achieved food security, it is very difficult to answer. India achieved food self sufficiency in 30 years ago through drastic investment in technology, institutions, and infrastructure. Yet India's efforts in achieving food security for all Indians remain unpredictable. India is the only Asian country other than Bangladesh and Yemen to be in top 25 of 97 hunger affected countries in the world. The rest of the countries come from Africa. According to FAO of the United Nations, 200 million people, one fourth of the world's undernourished population, live in India. About 41 percent of the world's underweight children, call India their home says UN Hunger taskforce. India's children, the future human resource capital of the country, face enormous growth challenges; 47 percent of children under 5 years old are underweight, 45% are stunted, and 16% have severe malnutrition. Such severity of malnutrition can only be observed in famine prone countries where acute food insecurity is extreme and frequent. With continuous achievement of food self sufficiency over the last three decades in India many people are not assured food security.

IMPROVING AGRICULTURAL PRODUCTIVITY TO BENEFIT THE RURAL POOR

There are strong, direct relationships between agricultural productivity, hunger, poverty, and sustainability. Three-quarters of the world's poor live in rural areas and make their living from agriculture. Hunger and child malnutrition are greater in these areas than in urban areas. Moreover, the higher the proportion of the rural population that obtains its income solely from subsistence farming (without the benefit of pro-poor technologies and access to markets), the higher the incidence of malnutrition. Therefore, improvements in agricultural productivity aimed at small-scale farmers will benefit the rural poor first. Food and feed crop demand is likely to double in the next 50 years, as the global population approaches nine billion. Growing sufficient food will require people to make changes such as increasing productivity in areas dependent on rainfed agriculture; improving soil fertility management; expanding cropped areas; investing in irrigation; conducting agricultural trade between countries; and reducing gross food demand by influencing diets and reducing post-harvest losses.

PRODUCING FOOD WITHOUT AGRICULTURE

What a variety of alternate foods which convert fossil fuels or biomass into food without sunlight to address sunlight-blocking food security scenarios The solution using fossil fuel energy source is natural gas digesting bacteria One example of a biomass alternate food is that mushrooms can grow directly on wood without sunlight Another example is that cellulosic biofuel production typically already creates sugar as an intermediate product

LARGE-SCALE FOOD STOCKPILING

The minimum annual global wheat storage is approximately 2 months. To counteract the severe food security issues caused by global catastrophic risks, years of storage has been proposed. Though this could ameliorate smaller scale problems like regional conflict and drought, it would exacerbate current food insecurity by raising food prices.

AGRICULTURAL INSURANCES

Insurance is a financial instrument, which allows exposed individuals to pool resources to spread their risk. They do so by contributing premium to an insurance fund, which will indemnify those who suffer insured loss. This procedure reduces the risk for an individual by spreading his/her risk among the multiple fund contributors. Insurance can be designed to protect many types of individuals and assets against single or multiple perils and buffer insured parties against sudden and dramatic income or asset loss.

Crop insurance is purchased by agricultural producers to protect themselves against either the loss of their crops due to natural disasters. Two type of insurances are available (1) claim-based insurances, and (2) index-based insurances. In particular in poor countries facing food security problems, index-based insurances offer some interesting advantages: 1) indices can be derived from globally available satellite images that correlate well with what is insured; (2) these indices can be delivered at low cost; and (3) the insurance products open up new markets that are not served by claim-based insurances.

An advantage of index-based insurance is that it can potentially be delivered at lower cost. A significant barrier that hinders uptake of claim-based insurance is the high transaction cost for searching for prospective policyholders, negotiating and administering contracts, verifying losses and determining payouts

LEGISLATIVES ISSUES IN FOOD SECURITY

There is a general belief that the government issued food security ordinance in a haste, as the Congress Party, which is leading UPA government at the centre, had made an election promise to provide food security with a law in 2009 general elections. Opposition parties are branding this as merely an election stunt to lure the voters in 2014 elections. It is obvious that in a democracy no political party can oppose a law, which provides food security to the people of the country. However, the important question is that whether that government has sufficient resources to implement this law? This question is not being raised by opposition parties alone, even the alliance partners and the ministers in the government are also raising questions about the practicability of the law.

NEED TO REVITALIZE THE PDS

- India at present finds itself in the midst of a paradoxical situation comprising of mass hunger situation and mounting of food stocks.
- The food grain stocked at FCI is high above the actual annual requirement.
- In developing country PDS means to secure food security and fair pricing system.

MEASURES TO ENSURE NATIONAL FOOD SECURITY

The following are the measures to be taken for achieving food security for growing population through higher food production.

EDUCATION AND LITERACY

Role of education in improving farm efficiency and technology adoption has been well established. As agriculture transformed from subsistence to commercial level, farmers seek information on a wide range of issues to acquire knowledge or upgrade their skills and entrepreneurial ability. Literacy emerges as an important source of growth in adoption of technology, and use of modern inputs like fertilizers and machines.

An educated workforce makes it easier to train and acquire new skills and technologies required for productivity growth. Thus, contribution of literacy will be substantial on yield growth and domestic supply of food.

CROP DIVERSIFICATION

Food availability is a necessary condition for food security. India is more or less self sufficient in cereals but has deficit in pulses and oilseeds. Due to changes in consumption patterns, demand for fruits, vegetables, dairy, meat, poultry, and fishery products has been increasing. There is a need to increase crop diversification and improve allied activities to produce such crops and produces in which we are deficient.

TACKLING CLIMATE CHANGE

Food security in India can be achieved by paying higher attention to issues such as climate change, limiting global warming, including the promotion of climate-smart agricultural production systems and land use policies at a scale to help adapt and mitigate ill effects of climate change.

INTEGRATED WATER MANAGEMENT

India needs to produce more crop per unit of land and water resources. Alarming rates of groundwater depletions and increasing environmental and social problems pose acute threats to mankind. Improved management of irrigation water is essential in enhancing production and productivity, food security and poverty alleviation. Agriculture is the biggest user of water accounting for over 80 percent of the water withdrawals. There are pressures for diverting water from agriculture to other sectors. It has been projected that availability of water for agriculture use in India may be reduced by 21 percent by 2020, resulting in drop of yields, especially rice, leading to price rise and threat to food security of the poor. The needs of other sectors for water cannot be ignored. As a result, it is necessary that an integrated water use policy is formulated and judiciously implemented. Modern methods of irrigation like sprinkler, drip irrigation, fertigation, among other water efficient tools need to be adopted on larger scale.

INTEGRATED NUTRIENT MANAGEMENT

Attention needs to be given to balanced use of nutrients. Phosphorus deficiency is the most wide spread soil fertility problem in both irrigated and non-irrigated rainfed areas. To improve the

efficiency of fertilizer-use, what really needed is enhanced location-specific research on efficient fertilizer practices, improvement in soil testing services, development of improved fertilizer supply and distribution systems and development of physical and institutional infrastructure.

IMPROVED VARIETIES

In several regions, farmers are not able to get information about the availability of new and improved varieties and some are not having access to quality seeds of these varieties, resulting in lesser yields. This situation has to be corrected by developing a national-level network to monitor and coordinate the activities with the various State government functionaries working in the area of crop production.

IMPROVED TECHNOLOGY ADOPTION

Adoption of technologies like integrated nutrient management, integrated pest management and integrated weed management need to be made available for adoption to ensure higher production and sustainability of production base.

AWARENESS ON POPULATION GROWTH

The awareness of the pressures of increasing population growth and consumption patterns on ecosystem functioning should be created to sensitize farmers on adoption of sustainable crop cultivation and management practices.

FOCUS ON SMALL FARMERS

Increase in food production in the country does not necessarily ensure food security, if the poor do not have the buying power. Therefore, participation of small farmers in food production is essential to achieve food security. Most of them being illiterate and having failed earlier either in adopting new technologies or repaying the loan provided under various development schemes. They need support not only to procure inputs but also to gain confidence.

The strategy to enhance the food production should address the problems of such small landholding farmers, who constitute over 83 percent of farmers in the country. They own less than two hectare of land per family, mostly marginal and non-irrigated. They have been practicing low-external input farming and the crop yields have been substantially low. However, their contribution to the national food production is considerable and meets a significant part of their food needs.

AGRICULTURAL RESEARCH EDUCATION

The agricultural education in India is facing one of the biggest challenges. It has to identify its role in equipping the human resources for enhanced agricultural productivity and sustainable use of natural resources. Agricultural colleges and universities were initially assigned to disseminate scientific knowledge and skills to the farming community and to train them to use such skills for better output. As a backup for such a mission, agricultural research was encouraged to focus on scientific knowledge to suit to the realities of rural societies.

NATIONAL FOOD SECURITY ACT, 2013

Coverage and entitlement under Targeted Public Distribution System (TPDS) : Upto 75% of the rural population and 50% of the urban population will be covered under TPDS, with uniform entitlement of 5 kg per person per month. However, since Antyodaya Anna Yojana (AAY) households constitute poorest of the poor, and are presently entitled to 35 kg per household per month, entitlement of existing AAY households will be protected at 35 kg per household per month.

State-wise coverage : Corresponding to the all India coverage of 75% and 50% in the rural and urban areas, State-wise coverage will be determined by the Central Government. Planning Commission has determined the State-wise coverage by using the NSS Household Consumption Survey data for 2011-12.

Subsidised prices under TPDS and their revision : Foodgrains under TPDS will be made available at subsidised prices of Rs. 3/2/1 per kg for rice, wheat and coarse grains for a period of three years from the date of commencement of the Act. Thereafter prices will be suitably linked to Minimum Support Price (MSP). In case, any State's allocation under the Act is lower than their current allocation, it will be protected upto the level of average offtake under normal TPDS during last three years, at prices to be determined by the Central Government. Existing prices for APL households i.e. Rs. 6.10 per kg for wheat and Rs 8.30 per kg for rice has been determined as issue prices for the additional allocation to protect the average offtake during last three years.

Identification of Households : Within the coverage under TPDS determined for each State, the work of identification of eligible households is to be done by States/UTs.

Nutritional Support to women and children : Pregnant women and lactating mothers and children in the age group of 6 months to 14 years will be entitled to meals as per prescribed nutritional norms under Integrated Child Development Services (ICDS) and Mid-Day Meal (MDM) schemes. Higher nutritional norms have been prescribed for malnourished children upto 6 years of age.

Maternity Benefit : Pregnant women and lactating mothers will also be entitled to receive maternity benefit of not less than Rs. 6,000.

Women Empowerment : Eldest woman of the household of age 18 years or above to be the head of the household for the purpose of issuing of ration cards.

Grievance Redressal Mechanism : Grievance redressal mechanism at the District and State levels. States will have the flexibility to use the existing machinery or set up separate mechanism.

Cost of intra-State transportation & handling of foodgrains and FPS Dealers' margin : Central Government will provide assistance to States in meeting the expenditure incurred by them on transportation of foodgrains within the State, its handling and FPS dealers' margin as per norms to be devised for this purpose.

Transparency and Accountability: Provisions have been made for disclosure of records relating to PDS, social audits and setting up of Vigilance Committees in order to ensure transparency and accountability.

Food Security Allowance: Provision for food security allowance to entitled beneficiaries in case of non-supply of entitled foodgrains or meals.

Penalty: Provision for penalty on public servant or authority, to be imposed by the State Food Commission, in case of failure to comply with the relief recommended by the District Grievance Redressal Officer.

2. CONCLUSION

India's population was steady rising, production of food grains rise should also. Net availability of cereals has gone up except in few years. But the government had to import large quantity of cereals from other countries to increase the net availability of cereals in the economy PDS should, therefore be reformed and made more efficient. The scheme of decentralized procurement of food grains should be encourage and more states should be brought under its fold. All restriction on inter-state movement of food grains should be removed. The recommendation listed in the Tenth Plan of PDS should result in making the system more vibrant and efficient also capable of meeting the requirements of a liberalized economy.

3. REFERENCES

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