

EDITORIAL

India's Quest towards Food Security*Prema Ramachandran**Director, Nutrition Foundation of India, New Delhi - 110016, India*

India is home to one-sixth of the global population. When India became independent in 1947, the country was not self-sufficient in food production and did not have an appropriate food distribution system. There were pockets in the country which faced threat of famine and starvation whenever monsoon failed or staple production was low. Over three fourth of the population was poor, food insecure and suffered from chronic macro and micro nutrient deficiencies. High prevalence of infections due to poor access to safe drinking water, sanitation, overcrowded and ill ventilated housing led to loss of nutrients. Lack of access to health care facilities and poor utilization of even the available health care facilities due to low literacy and lack of awareness, prolonged the illness and increased the nutrition toll of infection. Famine and starvation hit the headlines because they were acute, localised, caused profound suffering and fatalities. Wide spread silent problem of chronic low food intake resulting in undernutrition and micronutrient deficiencies (directly or indirectly) caused more deaths than famine but these were unrecognised and not reported.

The founding fathers of India recognised that human resource is the engine for growth and development of the country and that work force can function optimally only when they are well nourished and healthy. Article 47 of the Constitution of India states that “the State shall regard raising the level of nutrition and standard of living of its people and improvement in public health among its primary duties”. Government of India

gave high priority to improvement of the health and nutritional status of the population. India's five-year plans-

- Enunciated appropriate policies to ensure that country became self sufficient in food production
- Laid down multi-pronged strategies and multi-sector programmes to:
 - combat poverty and food insecurity at national, state and household levels,
 - bridge the energy gap in vulnerable segments of population,
 - provide health care to reduce nutrition toll of infections,
 - reduce under-nutrition and micronutrient deficiencies and improve nutritional status of the population;
- Provided needed funds to implement intervention programmes and
- Laid down the goals to be achieved in specified time frame.

Efforts to achieve self sufficiency in food production: Green Revolution

India was a net importer of cereals in the fifties and sixties; the country's dependence on imported food was reflected in the picturesque derisive term “ship-to-mouth” existence. The green revolution ensured that the cereal production to meet the requirement of the current and projected population was achieved within a short span of a decade. Improvement on cereal production was due to:

- Technologies such as high yielding dwarf varieties, lab to land extension education to

popularise newer technologies, agricultural inputs like fertilisers and, pesticides;

- Expansion of net sown area (NSA), irrigated area, development of rural infrastructure and land reforms; and
- Minimum support prices (MSP) and procurement of cereals at farm level

It was recognised that farmers have to be assured of returns for their investment if they are to meet the policy makers' prescription to grow more food grains to bridge the gap between demand and supply. The major policy initiative included land reforms to enable farmers to invest their money, time and labour in improving farm yield. Policy-cum-investment decisions included assigning priority to building dams and irrigation canals to improve the area under cultivation and reduce the impact of the vagaries of the monsoon on food production. Under this enabling environment, the advent of technology of high-yielding varieties of rice and wheat, and investment in lab-to-land agriculture extension education provided the necessary impetus for the Green Revolution; the responsiveness of the farming community ensured rapid increase in food grain production. The accelerating convergence of policies, programmes, and R&D efforts enabled the country not only to achieve self-sufficiency in food production within a decade but also build up adequate buffer stocks to tide over seasonal and regional food scarcities.

National Food Security Mission

The very success of green revolution brought some major problems. The farmers increasingly focussed on rice and wheat cultivation; mono cultivation adversely affects soil health and fertility. Many of the erstwhile high food grain producing states are currently experiencing Green Revolution fatigue. There is a need to revitalise

agriculture and ensure that the growing food needs of the population are met now and in the foreseeable future. In an efforts to achieve this the National Food Security Mission (NFSM) [1] was launched in August 2007 with the objectives to:

- Increase production of rice, wheat through productivity increase and increase in pulses production through area expansion and productivity enhancement in a sustainable manner
- Restore soil fertility and productivity at individual farm level;
- Enhance farm level economy (i.e. farm profits) to restore confidence of farmers for improving food production in selected districts.

The mission is focussed on states / districts with higher yield potential and large yield gaps. The rice component of NFSM is being implemented in 20 million hectares in 133 districts in 12 states and the wheat component of NFSM in 13 million hectares in 138 districts in nine states with sizeable area under wheat. The production goals have by and large been met and projections for 2030 indicate that, in spite of several constraints, India will remain self-sufficient in food grains. Pulses component of NFSM covers 4.5 million hectares in 168 districts in 14 states with potential for area expansion through inter-cropping / fallow land utilisation. The pulse production has improved dramatically and the country produced 17 million tonnes of pulses in the year 2012-13 (Table 1) [2]. The current projection is that the country will achieve production of 24 million tonnes by 2017 and will become self sufficient in pulse production. Projections for 2030 suggest that Indian will remain self sufficient in food grain and pulse production.

Table 1: Agricultural Production of Principal Crops

Crop	Production in Million Tonnes					
	2000-01	2006-07	2009-10	2010-11	2011-12	2012-13
Coarse cereals	31.1	33.9	33.5	43.7	42.04	38.47
Cereals	185.7	203.1	203.4	226.5	242.23	232.57
Pulses	11.1	14.2	14.7	18.2	17.09	17.58
Food grains	196.8	217.3	218.1	244.8	259.32	250.14
Oil seeds	18.44	24.29	24.88	32.48	29.8	29.5
Source Agricultural statistics						

Economic Measures to Improve Household Food Security

In the sixties and seventies FAO defined food security as “the ability of a country or region to assure adequate food supply for its current and projected population”. If this criterion is used, India has been food secure from seventies. However review of the situation from the perspective of household food security and nutritional status of individuals showed that “self sufficiency in food grain production” at national level does not translate into household food security or improvement in nutritional status of the individual. Data from national surveys showed that more than 70% of India's population continued to be poor. They spent over 70% of their income on food. Despite this expenditure, over 70% of their children were undernourished. High morbidity due to poor environment and access to safe drinking water added to the problem. Multi-sectoral programmes were initiated to combat these factors.

Poverty Alleviation Programmes

Instead of food doles aimed at improving household food security, India invested in employment programmes for the unemployed or under employed to improve purchasing power to improve food security of the poor. Right from

1960s India has implemented employment schemes such as Employment Assurance Scheme (EAS), National Rural Employment Programme (NREP), Jawahar Rozgar Yojana (JRY), Sampoorna Grameen Rozgar Yojana (SGRY), and National Food for Work Programme as a welfare measure to provide employment and improve food security of the poor households. In 2005, India enacted the National rural employment guarantee act (NREGA) [3], providing legal entitlement for work to the unemployed rural persons. The act covered 200 districts in 2005 and currently covers rural population in all states and districts. It is the world's largest employment programme. NREGA aims to achieve twin objectives of rural development and employment, improvement in the purchasing power and food security of semi- or un-skilled rural people.

The Act stipulates that one-third of the work force should be women and they will get equal wages as men. The Act provides a legal guarantee for at least 100 days of paid employment in every financial year to adult members of any household willing to do unskilled manual work targeted toward a set of specific rural development activities, such as water conservation and harvesting, afforestation, rural connectivity, flood control and protection such as construction and repair of

embankments, digging of new tanks/ponds, percolation tanks and construction of small check dams land levelling and, tree plantation. Every person who has done the work given to him under the Act is entitled to receive wages at the wage rate for each day of work. The wages may be paid as cash or part cash and part food grains. The disbursement of daily wages shall be made on a weekly basis or in any case not later than a fortnight after the date work was done. If they fail to do so the government has to pay the amount at their homes. Despite infirmities in implementation of the programme the landless marginalised segments do benefit from the programme and scale of migration in search employment has been reduced in many areas.

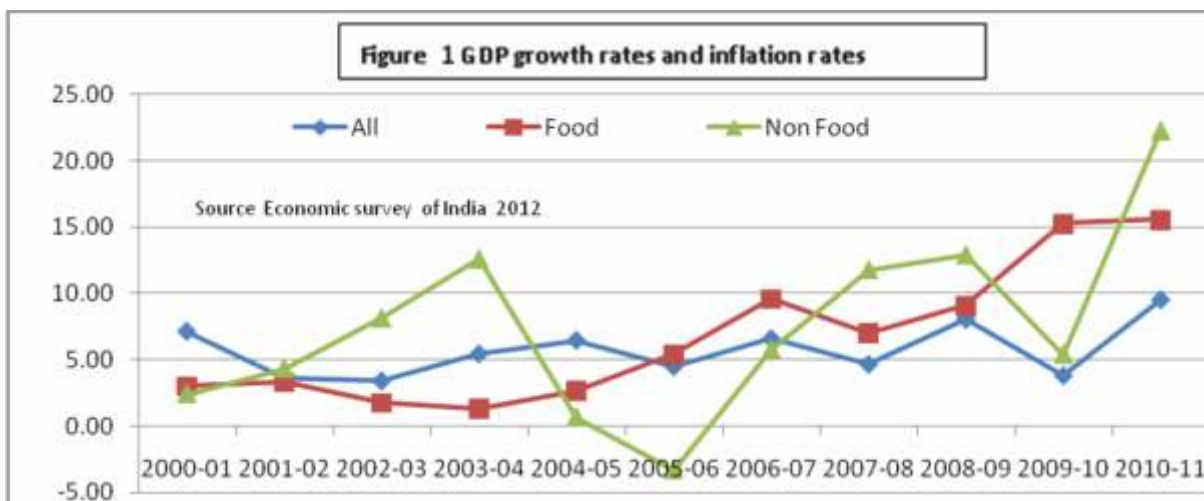
Public Distribution System (PDS)

Ensuring food grain price stability through administered food grain prices and providing subsidized food grains were the two intervention programmes to improve food security for the poor. The Government provides subsidised food grains for distribution under the Targeted Public Distri-

kept unchanged since 1 July 2002. The government therefore continues to provide large and growing amounts of subsidy on food grains. Numerous evaluations of the PDS have identified problems in terms of quality, quantity and timeliness of the subsidised food grains provided through PDS. Over time there has been improvement in PDS. NSSO surveys indicate that in spite of all the shortcoming, the PDS supply of the food grains has kept the food grain costs low and had some favourable impact on access to food especially among the resource poor people.

Food Inflation

The year 2008 witnessed a global steep increase in food grain prices, and a consequent increase in the number of food-insecure households. India has been experiencing steep and sustained increases in food prices due to inflation, during the last few years. During the years between 2000 and 2008, GDP growth rates were higher than food inflation rates. However, since 2009 there has been reduction in GDP growth rate [4] (Figure1). The combination of low GDP growth and high food inflation



bution System to the poor, for ICDS and Mid-day Meal programmes, and open market operations. While the economic cost of wheat and rice has continuously gone up, the issue price has been

can have adverse impact on household food security. India's progress towards household food security can be accelerated by a combination of economic measures that simultaneously and

successfully address the related challenges of promoting GDP growth and controlling inflation, especially in respect to food prices.

National Food Security Act

Concerned over the potential adverse consequences of sustained food inflation on the food security of the poorer segments of population, India enacted the National Food Security Act in 2013 [5]. The Act aims to improve household food and nutrition security by providing adequate quantity of good quality food grain at affordable prices as legal entitlement. Priority households are entitled to 5 Kgs of food grains per person per month, and Antyodaya households (poorest of the poor) to 35 kgs per household per month at the rate of Rs 3/2/1 for rice/wheat/milletts respectively from Targeted Public Distribution System. The combined coverage of Priority and Antyodaya households (called “eligible households”) is up to 75% of the rural population and up to 50% of the urban population”. In the ration card, the oldest woman in the household will be designated as the head of the household. On-going programmes of food supplementation to pregnant and lactating women and pre-school and school children will be supported. The type of supplements and the composition for different groups is given in (Table 2).

The responsibility of the central government is to procure food grains, create and maintain adequate modern food storage facilities to prevent wastage, allocate and transport food grains to states. The state governments will take delivery of the food grains and ensure its transport and distribution through the targeted public distribution system. Local self government (Panchayati Raj) institutions are responsible for proper implementation of the act in their respective areas.

Adequate food production to meet the needs of growing population is an essential prerequisite for implementation of Food Security Act; therefore, the Act calls for revitalisation of agriculture through:

- Agrarian reforms through measures for securing interests of small and marginal farmers;
- Increase in investments in agriculture, including research and development, extension services, micro and minor irrigation and power to increase productivity and production;
- Increasing livelihood security of the farmers by way of remunerative prices, access to inputs credit, irrigation, power and crop insurance;

Table 2: Provision for Ongoing Food Supplementation Programmes Under NFSA

Category	Type of food	Energy	Protein
6-36mth	Take home rations	500	12-15
3-6yr	Morning snacks	500	12-15
	Hot cooked meal		
Under nourished children 6mth-6yr	Take home rations	800	20-25
6-11yr	Hot cooked meal	450	12
11-14yr	Hot cooked meal	700	20
Pregnant and lactating women	Take home rations	600	18-20
Source : National Food Security Act			

- Prohibiting unwarranted diversion of land and water from food production.
- The Act envisages improvement in procurement, storage and movement of food grains by:
- Incentivising the decentralised procurement of food grains;
- Geographical diversification of procurement operations;
- Augmentation of adequate decentralised modern storage;
- Giving top priority for food grain movement by rail from surplus states to other states.

Recognising the importance of effective transparent and efficient distribution system for successful implementation of the provisions, the Act requires that central and state governments “shall endeavour to progressively undertake”:

- PDS reforms, including doorstep delivery of food grains
- Information communication technology (ICT) applications and end-to-end computerisation;
- Leveraging “Aadhaar” (Unique Identification card) for identification of entitled beneficiaries;
- Full transparency of records;
- Preference to public institutions or bodies in licensing of fair price shops;
- Management of fair price shops by women or their collectives;
- Diversification of commodities distributed under the PDS; and
- Full transparency of records.

Peoples representatives in the local self government and civil society agencies will monitor the implementation at local level right up to the households or places where the food supplementation programmes are implemented. There will be social audit of the programme at all levels. Appropriate grievance redressal mechanisms will be set up and these will include call-

centres, help-lines, and designated nodal officers. Food grains (cereals and millets), may improve household food security but will not be sufficient to provide balanced diet. The Food Security Act has made a provision for supply of other foods stuffs as and when needed or possible in future. Improving access to food might not be adequate to improve nutritional status of the population if there is nutrient loss due to infections. Therefore the Act also calls for improvement in access to:

- Safe drinking water and improvement in environmental sanitation to prevent infections;
- Health care for early detection and effective management of infections to prevent nutrient loss and deterioration.

Way forward

Realising that food grains alone cannot provide a balanced meal needed for improving nutritional status of the citizens, states like Chattisgarh and Tamil Nadu provide pulses at subsidized cost through PDS. Some states have attempted to provide oil, iodised and iron and iodine fortified salt through PDS at subsidized cost. However it will never be possible to provide all the food stuffs at a subsidised cost to all the needy.

There is an urgent need for a nutrition awareness campaign with focus on women (who are head of the household for the ration card) on how the money saved because of subsidised cereals and millets (approximately Rs 15-20 per kg and amounting to about Rs 500 per month) can be used for purchasing the other food stuffs such as pulses and vegetables so that the family can have balanced meal. The importance of nutrition education cannot be overestimated. The content of nutrition education as to be defined based on the ground situation. If the provisions of the act and the convergence in service delivery between interrelated sectors envisaged in the Act are effectively implemented, it is possible to bring about substantial improvement in household food security over the next decade.

References:

1. National Food Security Mission. <http://www.agricoop.nic.in/NFSM/NFSM.pdf>. accessed on 31.10.2014
2. Agricultural Statistics at a Glance 2007: <http://dacnet.nic.in/eands/Area,%20Production%20and%20Yield%20of%20Principal%20Crops.htm> accessed on 31.10.2014
3. Mahatma Gandhi National Rural Employment Gurantee Act. <http://nrega.nic.in> accessed on 31.10.2014
4. Economic Survey 2012 Ch4: Inflation in India. <http://economic-survey-ch4-inflation-wpi-cpi-monetary-policy>
5. The National Food Security Act, 2013 - India Code. <http://indiacode.nic.in/acts-in-pdf/202013.pd>

*Author for Correspondence: Dr. Prema Ramachandran, Director, Nutrition Foundation of India, New Delhi-110016, India.
Email: premaramachandran@gmail.com*