



The Monthly Journal

Kurukshetra

MINISTRY OF RURAL DEVELOPMENT

Vol. 65 No. 4 Pages 52

February 2017

CHIEF EDITOR
DEEPIKA KACHHAL

EDITOR
VATICA CHANDRA

JOINT DIRECTOR (PRODUCTION)
VINOD KUMAR MEENA

COVER DESIGN
ASHA SAXENA

EDITORIAL OFFICE

ROOM NO. 653,
Publications Division,
Soochna Bhawan,
C.G.O. Complex, Lodhi Road,
NEW DELHI-110003
Phone : 011-24362859
E-MAIL : kurupage@yahoo.co.in

FOR SUBSCRIPTION ENQUIRIES,
RENEWALS AND AGENCY
INFORMATION
PLEASE CONTACT:

JOURNAL UNIT, PUBLICATIONS DIVISION
MINISTRY OF I & B, ROOM NO. 48-53,
SOOCHNA BHAWAN, CGO COMPLEX,
LODHI ROAD, NEW DELHI-110 003
TELE : 24367453
FAX: 24365610
E-MAIL : pdjucir@gmail.com
WEBSITE : publicationsdivision.nic.in

*For Online Sale, please log on to
bharatkosh.gov.in/product, and for
e-books, please visit Google Play,
Kobo or Amazon*

SUBSCRIPTION* :

INLAND
1 YEAR : ₹ 230
2 YEARS : ₹ 430
3 YEARS : ₹ 610

ABROAD (AIR MAIL)

ONE YEAR
₹ 530 (SAARC COUNTRIES)
₹ 730 (OTHER COUNTRIES)
* REVISED FROM APRIL 2016
ISSUE ONWARDS

CONTENTS

- Animal Husbandry:
A Breathing Diligence of Cultural Heritage Dr. Prashant H. Pawar 5

Sales Emporia : Publications Division: *Soochna Bhawan, CGO Complex, Lodhi Road, New Delhi -110003 (Ph 24365610) *Hall No.196, Old Secretariat, Delhi 110054 (Ph 23890205) * 701, B Wing, 7th Floor, Kendriya Sadan, Belapur, Navi Mumbai 400614 (Ph 27570686)*8, Esplanade East, Kolkata-700069 (Ph 22488030) *A' Wing, Rajaji Bhawan, Basant Nagar, Chennai-600090 (Ph 24917673) *Press road, Near Govt. Press, Thiruvananthapuram-695001 (Ph 2330650) *Room No.204, IIInd Floor, CGO Towers, Kavadiguda, Hyderabad-500080 (Ph 27535383) *1st Floor, 'F' Wing, Kendriya Sadan, Koramangala, Bangalore-560034 (Ph 25537244) *Bihar State Co-operative Bank Building, Ashoka Rajpath, Patna-800004 (Ph 2683407) *Hall No 1, 2nd floor, Kendriya Bhawan, Sector-H, Aliganj, Lucknow-226024 (Ph 2325455) *Ambica Complex, 1st Floor, above UCO Bank, Paldi, Ahmedabad-380007 (Ph 26588669) House No. 4, Pension Para Road, Post Office - Silpukhuri, Guwahati -781003 (Ph 2665090)

Kurukshetra seeks to carry the message of Rural Development to all people. It serves as a forum for free, frank and serious discussion on the problems of Rural Development with special focus on Rural Uplift.

The views expressed by the authors in the articles are their own. They do not necessarily reflect the views of the Government or the organisations they work for.

The readers are requested to verify the claims in the advertisements regarding career guidance books/institutions. Kurukshetra does not own responsibility. Maps used are for illustration & study purpose and may not strictly conform to the official map.



FOOD SECURITY IN INDIA: SUSTAINABILITY, CHALLENGES AND OPPORTUNITIES

Jagdeep Saxena

Agricultural research preparedness needs support of strategic framework and supporting policies for maintaining long-term food security, Government policies regarding agricultural pricing, agricultural marketing, land use and investment in subsidies in agriculture need to be reoriented and repositioned to meet the food demand in future. Policy institutions have initiated the proceedings in this direction by deliberating various critical issues among stakeholders. It is hoped that these endeavors will take care of India's concern for national and household nutritional and food security, reducing poverty at a rapid rate, and achieving accelerated growth of agricultural sector, and in turn of the whole economy.

India is a proud nation having attained food security for its 1.3 billion populations despite several odds and challenges. According to Food and Agriculture Organization of United Nations, food security is a situation when all people at all times have sufficient food to meet their dietary and nutritional needs to lead a healthy and productive life. In this sense, food security necessary includes nutritional security. Soon after independence, especially in post-Green Revolution era, India strived for 'Food for All' by developing technological interventions, supporting policies and strategies and a vast network of public distribution system. These initiatives enabled the country to increase the production of food grains by 5-fold, horticultural crops by 6-fold, fish by 12-fold, milk by 8-fold, and eggs by 27-fold since 1950-51. Such steep enhancements improved per capita availability of major food commodities and made a visible impact on national food and nutritional security. Food security also implies food affordability, that is, an individual's capacity to purchase proper, safe, healthy and nutritious food to meet one's dietary needs. Realising the wide-spread poverty as a major threat to food security, Government of India launched several social welfare schemes which ensure food to poor and 'poorest of poor' sections of the society. However, to sustain food security in future, India faces several challenges of varied nature.

Bumper Harvests, Soaring Stocks:

The Indian Council of Agricultural Research, through its vast network, provided leadership to ensure national food and nutritional security by promoting interdisciplinary, system-based, knowledge-intensive and problem-solving research. As a result, India could harvest more than 252 million tonnes of food grains in 2015-16 crop years despite deficient rainfall and its consequences (as per third advance estimate). The estimate includes rice production (103.36 million tonnes, wheat production (94.04 million tonnes) and production of coarse cereals (37.78 million tonnes). Output of pulses and oilseeds are estimated at 17.06 and 25.9 million tonnes respectively. The impressive production figures are mainly attributed to preparedness for facing drought-like conditions and other natural calamities. In addition, various schemes launched by Ministry



of Agriculture and Farmers Welfare recently also contributed significantly by providing and facilitating technical support, agricultural inputs, agricultural credit, marketing support and other interventions for raising productivity and expansion of area under major crops. Schemes such as Pradhan Mantri Fasal Bima Yojana, Pradhan Mantri Krishi Sinchai Yojana, e-NAM, Paramparagat Krishi Vikas Yojana and Kisan Credit Card Yojana are playing a very important role in technological and financial empowerment of small and marginal farmers who are major contributors to national food security. Of the total land holdings in the country, 85 per cent are in marginal and small farm categories of less than two hectares. The small farms though operating only on 44 per cent of land under cultivation, are the main providers of food and nutritional security to the nation. It has been empirically demonstrated that where appropriate institutional alternatives are adopted, small holders are as competitive as large farms. No wonder, with their best contribution, Indian food grain stocks are soaring and surpassing food grains stocking norms. Country had more than 27.50 million tonnes food grains (rice and wheat) in the Central Pool Stock as on December 2016. According to Food Corporation of India, the quantity is more than sufficient to feed the nation and also meet emergencies, if any.

As far as nutritional security is concerned, India has made good progress in fruit and vegetable cultivation by integrating production technologies, input management and policy support. Now, India ranks second in the fruits and vegetable production in the world, after China. During 2014-15, country produced 86.60 million tonnes of fruits and 169.47 million tonnes of vegetables which significantly raised per capita availability and nutritional status of population. India is the global leader in milk production, accounting for 18.5 per cent of world production and achieved an annual out-put of 146.3 million tonnes during 2014-15. The per capita availability of milk has increased from 146 grams per day in 1990-91 to 322 grams per day by 2014-15, which is more than the world average of 294 grams per day (2013). Both egg and fish production, have also registered an increasing trend over the years.

Mission for Millions:

Government of India launched a strategic mission in 2007 for augmenting and sustaining

food grains production to maintain long term food security. Implemented as National Food Security Mission, it envisaged to increase the production of rice, wheat and pulses to the tune of 10 million tonnes, 08 million tonnes and 02 million tonnes respectively during the 11th Five Year Plan period (2007-2012). The mission was implemented in 371 districts of 17 states with an outlay of Rs. 4882.48 crore. Active involvement of all stakeholders with promotion and extension of improved technologies resulted in significant expansion of area and productivity. Overall production of selected crops increased more than the targets. The success story prompted Government to continue the mission during 12th plan period (2012-2017) with revised target of raising the food grains production by 25 million tonnes. Coarse cereals, sugarcane, jute and cotton were included in the mission which now covers all districts of all the states. However, pulses are being given top priority and major allocations due to widening demand and supply gap. Large scale technology demonstrations at farmer's fields are being conducted across the country to promote improved production technologies and improved varieties.

National Food Security Mission provides technology support and financial assistance to farmers for specific activities having potential to raise the productivity. Seed mini-kits are provided free of cost for introduction and popularisation of latest released/pre-released varieties. In addition, seeds of approved varieties are provided at subsidized rates. Panchayats and Zila Parishads play a central role in identification of beneficiaries. Financial assistance is provided for purchase of specific farm implements/machinery for raising and harvesting of specific crops. To support farmers, assistance is provided for purchase of micronutrients, fertilizers, plant protection chemicals and other inputs considered necessary for enhancing the productivity. Mission provides assistance for conducting training of farmers under the Farmers Field School program for imparting first hand information on scientific practices of production and input management. Assistance is also provided to improve irrigation facilities in fields for better productivity.

Food for All:

Vastness of the country having many geographically challenged places and the economic

disparities pose a big challenge in ensuring physical and economic access to all sections of the society, especially the poor ones. But Government of India worked in a dedicated manner to realize the vision of 'Food for All' and launched strategic schemes/ programs to provide food to weaker sections of the society at affordable prices near their households. As a response to the food shortages at the time, Government of India launched well structured Public Distribution System (PDS) during 1960s, which relied mainly on procurement of food grains by Food Corporation of India and their distribution through fair price shops. By the 1970s, PDS had evolved into a universal scheme for the distribution of subsidized food and currently it, is the largest distribution network of its kind in the world. In the 1990s, Government revamped the PDS to improve access of food grains to people in hilly and inaccessible areas and to target the poor. The PDS, in its new 'avatar' is Targeted PDS (TPDS), operates through a multi-level process in which the Centre and States share responsibilities. States such as Chattisgarh and Madhya Pradesh have implemented IT measures to streamline TPDS, through digitization of ration cards, the use of GPS tracking of delivery and SMS based monitoring by beneficiaries. TPDS provides 35 kilogram of food grains to each poor households at subsidized rates. Centre has made special efforts to deliver food grains to remote areas, such as hilly tracts of north-east region and Himalayan areas. Under a special provision, Government of India releases extra food grains, beyond the allocated state quota, to provide relief to states suffering from natural calamities.

While implementing TPDS, Government realized the plight of 'poorest of poor' who are not able to afford food even on subsidized prices. Hence, to ensure their food security, a special scheme, 'Antyoday Ann Yojana' was launched in the year 2000 targeting families having monthly income of less than Rs. 250/-only. Such families were identified and issued a special 'Antyoday Card' which entitles the family to get 35 kilogram of food grains per month (wheat @ Rs. 2/- per kilo and rice @ Rs. 3/- per kilo) from the fair price shop. The scheme is a great success ensuring food security for the 'poorest of poor'.

Moving further, Government has notified the National Food Security Act, 2013 to provide food



and nutritional security to its people as a legal right. However, the Act does not disturb the structure and provisions of the Antyoday Ann Yojana. The Act also has a special focus on the nutritional support to women and children. It provides meals to pregnant women, lactating mothers (upto six month of child birth) and children upto 14 years of age. Nutritional meals are provided to this target group as per the prescribed nutritional standards. So far, the Act has been implemented in 32 States and Union Territories, and out of these, Chandigarh and Puducherry are implementing the Act through cash transfer of food subsidy to the beneficiaries.

Taking an innovative step, Government of India launched an unique 'Mid Day Meal Scheme' in 1995 with a view to encourage enrollment and attendance in primary schools along with improvement in nutritional levels of the children. Initially, the scheme was implemented in 240 blocks of the country, but the overwhelming success and popularity of the scheme prompted Government to cover all blocks by the year 1997-98. Simultaneously, the coverage was also extended to upper-primary schools and the nutritional standards of the meals were also improvised. Now, the meals of students of upper-primary classes have been standardized as 25 to 30 grams pulses, 65 to 75 grams vegetables and a moderate quantity of oil (7.5 gram). The scheme is ensuring nutritional security of 11-12 crore school children along with educational benefits. Government of India is also operating an Integrated Child Development Scheme (ICDS) since 1975 to provide a sound base for overall development of children which includes nutritional security. Target groups of this scheme include children in the age group of 0 to 6 years, pregnant women and lactating

mothers. Services such as health, nutrition and early learning are provided at the village level through Anganwadi Centres across the country. The scheme is providing nutritional support to more than 3.40 crore children and 70 lakh women especially in rural areas.

Challenges and Opportunities:

Indian food and nutritional security is being challenged by many social, economic and environmental factors such as increase in the population, increasing urbanization and increasing demand of food due to rising income. In addition, dietary preferences such as high demand for livestock products and consumption of more processed foods are also creating pressure on the food supply system. The population of India is projected to be 1.65 billion by 2050 with an average income of Rs. 401839/cap, up from the level of Rs. 53331/cap in 2010-11, with 50 per cent people residing in the urban areas. Various studies indicate the demand for food grains will grow by about 50 per cent in 2050, if the growth rate in national GDP sustains at 7 per cent per annum. At the same time, the demand for fruits, vegetables and animal products will be more spectacular (100-300 per cent) due to higher incomes and increased availability of these commodities. It is projected that by 2050, the calorie consumption will reach 3000 kcal/cap, with rise in the share of animal-based calories from the current level of 8 per cent to 16 per cent. To sustain food and nutritional security in this scenario, India will have to raise its food grain productivity from 25000/kcal/ha/day in 2005 to about 46000 kcal/ha/day by 2050. Considering many other factors, it is estimated that the country will require nearly 450 million tonnes of food grains by 2050 to sustain the food security. Corresponding increases in pulses, edible oils, fruits, vegetables, milk, meat and eggs are also indicated. The Indian Council of Agricultural Research has formulated a strategic framework as 'Vision 2050' to promote excellence in agricultural research, education and extension for sustained food and nutritional security. The research initiatives will aim at: zero net land degradation, 20 per cent increase in total food supply-chain efficiency; reducing losses and wastages from field to fork; 20 per cent increase in water and nutrient efficiency in agriculture; more nutrition and crop per drop; and enhancing food safety. However, we will have to address various challenges to attain

these goals.

Challenge of Climate Change:

Global climate change is one of the most impacting challenges to long-term food security as it could lead to dramatic scarcity of fresh water in the northern and peninsular regions of the country. Various estimates suggest that India will experience an increase of 2.2 - 2.9 degree Celsius in average temperature by 2050 affecting overall production of rabi and kharif crops with simultaneous loss in milk, fish and meat production. Rain-fed agriculture which covers 60 per cent of all the cultivated land in the country will be particularly hard hit. Except for the states of Andhra Pradesh, Tamil Nadu and Karnataka, where yield of rain-fed rice is likely to go up by 10-15 per cent, rice yields will go down by 15-17 per cent in Punjab and Haryana and by 6-18 per cent in all other regions. To address this critical issue, ICAR has launched a nationwide project NICRA (National Innovations in Climate Resilient Agriculture), which provides strategic support to farmers and empowers them to adopt climate smart agricultural practices. Scientists have developed new varieties of various major crops, which are tolerant to climatic stresses and perform well under adverse weather conditions. Integrated farming models are being popularized in which livestock are integrated in the cropping patterns as livestock has always acted as insurance during environmental stresses and is more dependable than crops. But it would require technological innovations to make them adapt to climate extremes.

Declining and degrading land resources also pose a serious threat to food security as the availability of per capita land is declining sharply due to increase in population (0.13 ha land/cap in 2010-11 to 0.09 ha/per cap). Further, in some cases, agricultural land is being diverted to other uses such as infrastructure development, urbanization, and industrialization negatively affecting to agricultural production. Land is getting polluted with toxic waste waters and there is a large scale of degradation due to water and air erosions. Growing water scarcity and degradation in its quality are other factors which are creating numerous water management challenges in both reverse and ground water across the country. Biodiversity of plants and livestock, which is very crucial for sustaining long-term productivity, is under threat. The rate of extinction is alarming, as

only four crops provide about 60 per cent of global food, causing declines in genetic diversity among cultivated species. Pandemic pest and diseases in animal population increase the production risks and present a major challenge for ensuring food security in the country.

Way Forward:

The power and potential of science and innovation promises hopes for sustainable food and nutritional security through enhanced production and productivity of crops and livestock including fisheries. Genetic enhancement of plants/animals/fish is considered to be a major option to sustain the food security by increasing productivity. Biotechnological advances in agriculture may improve soil productivity and may provide a safety net to food production through employment of environment friendly tools for insect and pest management. Mechanization of agriculture and food production systems may enhance the overall productivity to save labour and cut down the production cost. Currently, India is lagging behind in food processing sector and consequently, high losses are being registered across supply chains. Therefore, to sustain food security a substantial increase in food processing sector is suggested by

increasing investment, infrastructure and facilities. The issue of energy development and management in agriculture sector requires urgent attention as it is crucial to both food production and processing. A core program in the efforts to secure national food security is the promotion of gene revolution aiming at lowering the net production costs, raising the yields and net farm incomes, reducing the use of pesticides and herbicides, and thereby lowering the consumer prices. Agricultural research preparedness needs support of strategic framework and supporting policies for maintaining long-term food security, Government policies regarding agricultural pricing, agricultural marketing, land use and investment in subsidies in agriculture need to be reoriented and repositioned to meet the food demand in future. Policy institutions have initiated the proceedings in this direction by deliberating various critical issues among stakeholders. It is hoped that these endeavors will take care of India's concern for national and household nutritional and food security, reducing poverty at a rapid rate, and achieving accelerated growth of agricultural sector, and in turn of the whole economy.

(The Author is Former Chief Editor, ICAR-DKMA. Email: jgdsaxena@gmail.com)

Clean Consumer Fora and Clean Market Scheme to Launch from 2017-18

The Department of Consumer Affairs has decided to launch two schemes, namely, Clean Consumer Fora and Clean Market from 2017-18, as a lot of emphasis is being given for setting up of permanent mechanism through new programmes or schemes for sustainability of Swachhta under Swachh Bharat Mission. The salient features of the schemes are as under:

Clean Consumer Fora : A number of consumers visit the Consumer Fora every day in connection with their complaints. There should be adequate facilities for the consumers in each Consumer Forum, including adequate toilets, especially for the differently-abled. Under the scheme, financial assistance will be provided for construction/upgradation of toilets, at least three toilets- one for men, one for women and one for differently-abled, for the use of the consumers visiting the Consumer Fora in connection with their complaints.

Clean Market: Unhygienic conditions at market places pose health hazards to the consumers. Under the scheme, the Voluntary Consumer Organizations (VCO) will be associated and asked to adopt a market place where they can carry out awareness activities on Swachhta and also cleanliness of the market place including provision of sanitation facilities for consumers and street vendors, in association with the market association and local authorities. Financial assistance will be provided to a VCO in each State/UT.

YOUTH TO BE DEPLOYED FOR NAMAMI GANGE

A cadre of 20, 000 thousands of youths will be groomed as volunteers to be deployed in villages along the river to raise clean Ganga consciousness among the local dwellers and visitors, to generate widespread awareness on ails of polluting river Ganga, The step which is being taken under Central Government's flagship *Namami Gange* programme, emphasizes on using the zeal of the young to support of people from all walks of life in conservation of the river, which faces rapid contamination from domestic and industrial effluents.

Nehru Yuva Kendra Sangathan (NYKS), an autonomous organisation under Ministry of Youth Affairs and Sports has been entrusted with the task of building capacities of more than 20, 000 young men and women from Ganga basin states, so that they can represent *Namami Gange* programme as "*Swachhta Doots*".

From over 20,000 informed youth motivators, as many as 50 enthusiastic spearhead campaigners would be identified and trained for a week. These ace campaigners will then be asked to lead this army of the young in their assigned jurisdictions in spreading the message of clean Ganga. All this will be done in consultation with village youth clubs.

The youth, once trained, would exhort and motivate local population and tourists to refrain from polluting river Ganga. They will be the new wheels on which clean Ganga awareness campaign would ride. The *Swachhta Doots* would not only educate the target audience about the adverse consequences of polluting Ganga, but will also be an asset in providing information on existing government activities like construction of toilets, water harvesting and conservation for creation of a comprehensive database in coordination with National Mission for Clean Ganga (NMCG), the implementing arm of *Namami Gange* programme.

The project envisages deployment of the youth in 29 districts in about 2,336 villages along the river in Ganga basin States of Uttarakhand, Uttar Pradesh, Bihar and West Bengal. One project officer will be assigned to each district. The project has been approved at an estimated cost of Rs 10 crore.



FOOD SECURITY ACT: A REVIEW

Mukesh Kumar

There is a special focus in the Act on nutritional support to pregnant women and lactating mothers and children upto 14 years of age by entitling them to nutritious meals. Pregnant women will also be entitled to receive cash maternity benefit of Rs. 6, 000 in order to partly compensate her for the wage loss during the period of pregnancy and also to supplement nutrition. Keeping in view the important role that women play in ensuring food security of the family, the Act contains an important provision for women empowerment by giving status of head of the household to the eldest woman of the household, for the purpose of issuing of ration cards.

In the Indian context, the underpinnings for food security of the people can be found in the Constitution, though there is no explicit provision on right to food. The fundamental right to life enshrined in Article 21 of the Constitution has been interpreted by the Supreme Court and National Human Rights Commission to include right to live with human dignity, which includes the right to food and other basic necessities. Under Directive Principles of State Policy, it is provided under Article 47 that the State shall regard raising the level of nutrition and the standard of living of its people and the improvement of public health as among its primary duties.

To further strengthen the efforts to address the food security of the people, the Government has enacted the National Food Security Act (NFSA), 2013. It marks a paradigm shift in approach to food security – from a welfare to rights based approach. The Act legally entitles upto 75 per cent of the rural population and 50 per cent of the urban population to receive subsidized food grain under Targeted Public Distribution System. About two-thirds of the population therefore, will be covered under the Act to receive highly subsidised food grain. There is a special focus in the Act on nutritional support to pregnant women and lactating mothers and children upto 14 years of age by entitling them to nutritious meals. Pregnant women will also

be entitled to receive cash maternity benefit of Rs. 6, 000 in order to partly compensate her for the wage loss during the period of pregnancy and also to supplement nutrition. Keeping in view the important role that women play in ensuring food security of the family, the Act contains an important provision for women empowerment by giving status of head of the household to the eldest woman of the household, for the purpose of issuing of ration cards.

NFSA provided for a period of one year after the commencement of the Act, i.e. up to 04.07.2014, for identification of eligible households for receiving subsidized foodgrains under Targeted Public Distribution System (TPDS). All 36 states/ UTs implemented the act since November 2016. Aspects which need focused attention of State Governments and UT Administration relate to



beneficiary identification in a fair and transparent manner so as to avoid errors on inclusion and exclusion, delivery of foodgrains up to door-steps of fair price shops computerisation of TPDS operations, strengthening of the mechanism of Vigilance Committees at various levels and effective grievance redressal mechanism. Such reforms measures are crucial to ensure a leakage and diversion free PDS and also to ensure that no needy person is denied benefits.



Challenges of NFSA:

The existing system of foodgrain management is characterized by the dominant presence of the government in all the basic aspects of marketing viz., procurement, storage, transport and distribution, with all these operations being bundled and carried out by the FCI. Currently, FCI's operations are intended to build buffer stocks to meet any exigency, open market purchase/sales to stabilize domestic prices and provide food security requirements through sale of subsidized grain. It procures, mainly wheat and rice, for the Central Pool at the MSP announced by the Government and distributes it through the State managed PDS. In addition, several states procure directly for decentralized procurement and distribution. Over the years, inefficiencies have been observed in the operations of FCI through concentration of procurement operations to a handful of States, an ever increasing central pool of stocks. NFSA throws various operational and financial challenges.

Production and Yield:

The trend in the area, production and yield of food grain during 1952-53 to 2014-15 is described in Table 1. During 1952-53, 102.09

million hectares were covered under foodgrain. The total foodgrain production achieved in 1952-53 was 59.2 million tonnes with a per hectare yield of 580 kilograms/hectare. Between 1952-53 and 2014-15, only 20.01 million hectares were added

Table 1: Area, Production and Yield of foodgrain in India

Year	Area (Million Hectares)	Production (Million Tonnes)	Yield (Kg/Hectare)
1952-53	102.09	59.20	580
1962-63	117.84	80.15	680
1972-73	119.28	97.03	813
1982-83	125.10	129.52	1035
1992-93	123.15	179.48	1457
2002-03	113.86	174.77	1535
2009-10	121.37	218.20	1798
2010-11	126.70	244.50	1930
2011-12	125.00	257.40	2059
2012-13	126.20	264.40	2095
2013-14	126.00	264.80	2101
2014-15	122.10	252.70	2070
2015-16		253.16	

(Source: Directorate of Economics and Statistics, Department of Agriculture, GOI).

Table 2: Average Yields of Major Crops in India (kg/ha)

Crop	1970-71	1980-81	1990-91	2000-01	2010-11	2013-14	2014-15
Rice	1123	1336	1740	1901	2239	2416	2390
Wheat	1307	1630	2281	2708	2989	3145	2872
Pulses	524	473	578	544	691	764	744

(Source: Directorate of Economics and Statistics, Department of Agriculture, GOI).

Table 3: Inflation in WPI Food Groups (in per cent) (Base: 2004-05)

	Weights	2012-13	2013-14	2014-15	2015-16 (April- December)
All Food	24.3	9.3	9.4	4.9	1.9
Food Articles	14.3	9.9	12.8	6.1	3.0
Foodgrains	4.1	14.6	9.1	4.0	6.7
Cereals	3.4	13.4	12.8	3.6	-0.3
Pulses	0.7	19.6	-5.5	5.9	39.5

(Source: Office of Economic Adviser, DIPP)

to the existing area under food grain cultivation. However, due to the impact of Green Revolution and the use of modern agro services, the total production increased from 59.20 million tonnes in 1952-53 to 253.16 million tonnes in 2015-16 and yield increased from 580 kilograms/hectare to 2070 kilograms/hectare in the intervening period. Table 1 also indicates that since 2003-04, the area under foodgrain has remained more or less stagnant with a relatively stagnated yield rate.

The average yields of major crops have shown impressive growth over the decades from 1970-71 to 1990-91 as shown in Table 2 but the percentage change in average yields has been fluctuating. From 2010-11, the percentage changes in average yields of rice, wheat and pulses are showing declining trends, which is a cause for concern. In the absence of a continuous follow upto the green revolution of 1960s and the dearth of a suitable technological breakthrough in Indian agriculture in the post-Green Revolution era, there has been a continuous decline in the total factor productivity of Indian agriculture. Annual rate of growth in GDP in agricultural and allied production reduced from 4.9 per cent in 2007-08 to -0.2 per cent in 2014-15 (RE).

Volatility in Prices:

Because of the low price elasticity of demand for food staples and the thinness of markets, problems in food availability translate into large increase in domestic prices and reductions in real incomes of poor consumers. The affordability

dimension of food security is influenced by the price movement of foodgrains in the country. The food inflation based on Wholesale Price Index (WPI) at 2004-05 prices experiences wide fluctuations during 2012-13 to 2015-16 (Table 3) This volatility in prices creates uncertainty in the 'economic access' pillar of food security.

Access to Public Distribution System :

The long established PDS has played a vital role in partially meeting the essential food and fuel needs of households in India. The operation of the PDS is supplementary in nature and does not meet the entire food requirements of any household. However, it does effectively protect the household by providing a basic entitlement at affordable prices and at convenient locations through its wide network of Fair Price Shops. The proportion of food grains accessed through the PDS in the total household consumption provides an indicator of the effectiveness of the PDS in ensuring food security in India.



Table 5: Rice and Wheat Purchase from PDS (per capita per month)

State	Rice (in kg)		Wheat (in kg)	
	Rural	Urban	Rural	Urban
Assam	3.57	3.29	0.21	0.06
Bihar	2.67	2.27	1.8	1.81
Chhattisgarh	6.49	6.6	1.32	1.59
Karnataka	4.26	3.49	1.43	1.4
Uttar Pradesh	4.56	4.52	1.58	1.53
West Bengal	2.48	2.16	1.01	1.11

(Source: NCAER 2015)

In 2004–05, 100 per cent of the sample BPL cardholders lifted grain from the PDS in Assam and West Bengal, while the proportion was 80 per cent in Karnataka (GOI 2005). The magnitudes were comparatively lower in Bihar (25 per cent) and Uttar Pradesh (54 per cent). In 2011–12, the proportion of AAY and BPL cardholders purchasing grain from the PDS was as high as 90 per cent at the national level. In 2014–15, 100 per cent of the AAY (Antyodaya Anna Yojana) cardholders purchased grain from the PDS in the six selected states, while the proportion ranged from 98 per cent in West Bengal to 100 per cent in Assam and Chhattisgarh among BPL/PHH (Priority Households) cardholders (Table 4).

Table 4: Usage of PDS among Ration Cardholders (in per cent)

State	APL	BPL/PHH	AAY
Assam	93.25	100	100
Bihar	NA	99.65	100
Chhattisgarh	94.38	100	100
Karnataka	NA	99.42	100
Uttar Pradesh	77.08	99.52	100
West Bengal	98.35	97.93	100

(Source: NCAER 2015)

Among the six selected states, Bihar has experienced a significant rise in PDS usage, which can be attributed to two reasons. First, the coverage has increased significantly over the past decade. Second, there has been an improvement in the PDS

delivery programme because the state adopted strict measures in 2011–12 starting with a system for tracking food coupons. The Bihar government also has put in efforts since 2013–14 to cancel old ration cards after new cards were issued under the NFSA. Chhattisgarh and Karnataka, two good performer states in public distribution that allocate food grain from the state's own food security scheme on top of the NFSA entitlement, have adopted a significant change in grain entitlement from May 1, 2015. Chhattisgarh, burdened with a considerable proportion of fake cards and a consequently huge subsidy burden on the state exchequer, has switched from household-based allotment to individual allotment of food grain. Karnataka has made a similar shift from household entitlement to an individual allotment of 5kg of food grain per person.

The average monthly per capita rice and wheat purchase from the PDS is given in Table 5. The average rice purchase is the highest in Chhattisgarh as expected. The state, which is the best performer as far as public distribution of food is concerned, also has the highest relative coverage of beneficiaries. While many other states have stopped allocation for APL households under the NFSA, Chhattisgarh still supplies food grain to this group at prices that are significantly lower than market prices.

However, there are wide interstate variations in the performance of PDS that it has performed much better in meeting household requirements in some states as compared to others. Tamil Nadu follows universal PDS system and the involvement of women-SHG_s has ensured safety, transparency and accessibility in the system along with reduction in transaction costs. The improved functioning of the PDS would become most essential for effective implementation of NFSA.

Centralized Procurement Model:

NFSA mandates Central Government to procure from the Central Pool. State Governments are responsible for further distribution. Decentralized Procurement System (DCP) was introduced in 1997-98 in view of the practical difficulties faced by the Central Government/FCI to procure on its own. Under DCP, States

were invited to assist in the procurement and distribution of foodgrains under the TPDS. This experiment has been quite successful in Madhya Pradesh & Chhattisgarh as far as augmenting the level of procurement is concerned. NFSA seems to be suggesting a retrogressive step of going back to centralized procurement model which was found unsustainable in the first place.

Food Subsidy:

Food subsidy bill represents the basic direct cost incurred by the central government on procurement, stocking and supplying to various food based safety nets such as PDS. During the last ten years, food subsidy has more than quadrupled from Rs. 23071 crore in 2005-06 to Rs crore 105509.41 in 2015-16 at current prices. As a percentage of agriculture GDP, it has increased from 4.5 per cent to 13.2 per cent during the same period (Table 6). Increasing economic costs of handling foodgrains, record procurements in recent years and widening difference between the economic cost of foodgrains and the central issue price have been the major factors leading to the ballooning food subsidy.

Table 6: Food Subsidy in India

Year	Food subsidy (Rs. In crore)
2005-06	23071.00
2006-07	23827.59
2007-08	31259.68
2008-09	43668.08
2009-10	58242.45
2010-11	62929.56
2011-12	72370.90
2012-13	84554.00
2013-14	89740.02
2014-15	113171.16
2015-16	105509.41

(Source: Department of Food and Public Distribution)

Distribution between Centre & States:

The Central Government has limited its responsibility to procure for the central pool and delivery to the State government for distribution through the TPDS. The State Government is



made responsible for collection of foodgrains from FCI depots and further ensure that the legal entitlements are enforced. If the Central Government is unable to provide foodgrains from its Central Pool, it has to provide funds to the extent of short supply of food grains from its central pool to the State Government that also as determined by itself. But if the State Government is unable to provide the entitled grains, then it has to pay a “Food Security Allowance” to the excluded beneficiaries. It would be very difficult for state governments to distribute that cash to ultimate beneficiaries without developing a proper financial structure.

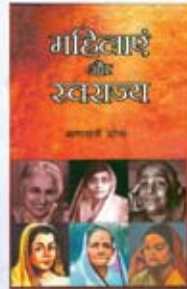
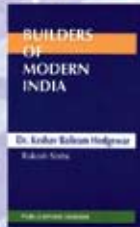
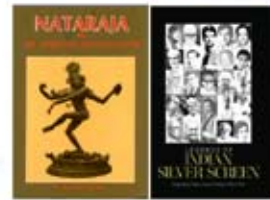
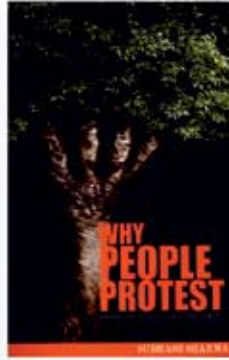
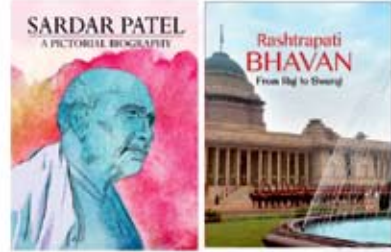
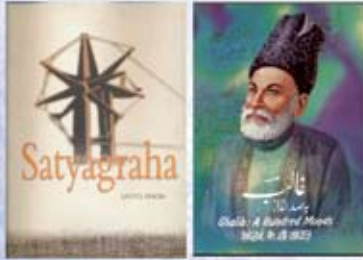
Increased Requirement of Marketing and Processing Infrastructure:

Almost 100 per cent market arrivals of wheat and common paddy are already procured by government in Punjab and Haryana. So growth will have to happen in newer territories especially from Eastern states. Many of these states have a very scanty level of market infrastructure with lower market surpluses and handling per market. The states need much investment in the market infrastructure to facilitate procurement.

Increased Requirement of Storage Capacity:

The increased level of procurement and distribution of the food grains as result of the Act requires higher storage and warehousing capacities. For the effective implementation of NFSA, there is requirement of storage capacity for additional 22-32 million tonnes with cost up to Rs. 8500 crore.

(The author is Assistant Professor, Department of Economics, University of Delhi. Email: mukesh.dse11@gmail.com)



Selected titles now available for sale online

For Books on Freedom Struggle, Builders of Modern India, History,
Art & Culture, Rashtrapati Bhavan Series and many more

visit
Bharatkosh Portal

<https://bharatkosh.gov.in/Product>

or

publicationsdivision.nic.in



Publications Division

Ministry of Information and Broadcasting
Government of India

For your copies and business queries, please contact: 011-24369549,24362927

e-mail: dpdonlinebooks@gmail.com

@DPD_India

@publicationsdivision

NATIONAL FOOD SECURITY ACT, 2013: ENABLING SMALL FARMERS TO PRODUCE MORE FOOD

G K Kalkoti

Massive awareness among S&MFs through print & electronic media involving village panchayats needs to be created about their rights to benefit from a plethora of Government schemes, including MSP, farm-subsidies and institutional credit and insurance cover. Government, NGOs and Banks can build capacity of S&MFs to use technology and credit for sustained food production.

The National Food Security Act (NFSA), 2013 aims at covering overall 67 per cent of population (75 per cent of rural and 50 per cent urban) and promised to give them rice/wheat/coarse cereals at Rs. 3/2/1/ Kg through **Public Distribution System (PDS)**.

The quantity promised is 35kg/month for **Antyodaya** households and 5kg/per person for priority households. At the current average size of the family of around 5, this will work to 25kg/household per month. The total annual requirement of food grains for beneficiaries of PDS and other welfare schemes is estimated to be 61.2 million tons (MT). The cost of handling grain by the Government was about Rs.30/kg for rice and Rs.22/kg for wheat in 2014 (including costs of carrying stocks), again stand Minimum Support Price (MSP) of rice at about Rs.20/kg (converted from paddy) and Rs.14/kg for wheat. The budgeted food subsidy for FY 2014-15 was Rs.1.15lakh crore and there were pending arrears of almost Rs. 500 billion that need to be cleared on account of food subsidy.

Thus, in terms of **FAO's definition** of the **"Food Security"**

- i) Food output in India in any year irrespective of the occurrence of droughts and floods must be enough to meet the needs of every citizen.
- ii) Food must be affordable to everyone. This means that income of poor and particularly those who have income generating economic activities must be enabled to improve their income through various farm and non-farm sectors so that they can access food

from open markets. Those who are below poverty line including landless labourers, tenant farmers, share croppers, oral lessees and those residing in tribal, forest, hilly, desert, drought and flood-prone areas and those who have no source of income can be considered eligible under the **NSFA**.

- iii) Food should be nutritious and provide balanced diet to maintain/improve health (not merely comprising cereals) consisting of adequate quantity of pulses, edible oils, fruits, vegetables, milk, meat, eggs, fish etc.
- iv) Food system must focus on stability of production and prices.

The following chart illustrates the various components of food security as we know it today, along with the variants that influence it.

Food Grain Requirement Projection:

According to NCAP Report, India will require 280.6 million tonnes of food grains by 2020. Demand



for pulses and oil seeds would increase by 140 per cent and 243 per cent respectively. India would require about 130 million tonnes of rice in 2020, while requirement of wheat would reach 110 million tonne in 2020.



Challenges:

Successful implementation of **NFSA** in the present form necessitates efficient system to produce required amount of food in each year (without resorting to imports) irrespective of occurrence of droughts and floods, its procurement, storage, transport and supply/delivery through PDS, among others. In this context, this article briefly highlights the likely implications of the NFSA on **Small And Marginal Farmers (S & MFs)** for food production and suggests the strategic actions to enable S&MFs to significantly increase food output and income.

Implications of NFSA on S&MFs:

Agricultural Census (2010–11) revealed that S&MFs (less than two hectares) account for 85 per cent of total 138.35 million operational holdings and 44.46 per cent of the total area), characterizing India’s agriculture a small-scale-farming. Considering average five members in a farm family S&MFs have 585 family-members of whom (75per cent) 438 members will qualify to be beneficiaries under NFSA. These S&MFs who produce substantial amount of food grains, also consume and use for various purposes a large part of what they produce.

According to the Working Group on Agricultural Marketing Infrastructure and Policy Required for Internal and External trade (Eleventh Plan), S&MFs retain more than 60 per cent for family consumption and less than 40 per cent they set aside for market. Apart for their family consumption, which is in excess of a third of their production, they retain



Some Statistics

States that have food security schemes	
ANDHRA PRADESH	35 kg rice at ₹1 a kg
CHHATTISGARH	35 kg rice at ₹2 a kg
KERALA	Rice at ₹2 a kg for BPL, universal PDS
KARNATAKA	30 kg rice at ₹1
MADHYA PRADESH	30 kg wheat at ₹1
ODISHA	20 kg rice at ₹1 a kg
TAMIL NADU	20 kg free rice a month
WEST BENGAL	Rice at ₹2 a kg in select areas

HUNGER PANGS			
GLOBAL HUNGER INDEX			
Country	1996	2011	2011
India	30.4	24.1	23.7
China	11.7	6.8	5.5
Pakistan	25.7	21.9	20.7

Source: Business Standard, August 27, 2013 Source: Times of India (12th October 2011)

the produce for paying permanent and temporary farm labor in kind; for feeding farm animals and using as seeds; for payment in kind for farm equipment, customary dues, repayment of loan and irrigation charges. They produce food more efficiently than medium and large farmers. While their families consume most of the food grains they produce, they also contribute a significant part of the national kitty of food production for others.

Now, under the NFSA most of their family-members will qualify for subsidized food grains. And they will get grain supply at less than 1/8 of the price at which they produce and sell grains to the Government. If the Government would supply them grains at 1/8 price, it is likely that they will switch over to other crops rather than producing about 40 per cent of national food using 44.46 per cent of the cultivated area, particularly when their cost of cultivation per hectare as compared to medium and large farmers is higher. Perhaps, providing highly subsidized food grains to S&MFs under the NSFA may dissuade them from producing food grains for their families and the nation.

Incentivizing S&MFs to Produce More:

S&MFs contribute more than half the total value of agricultural output in India. They are also actively engaged in raising milch animals and animal husbandry activities. S&MFs have 70 per cent, 55 per cent and 52 per cent share in

total production of vegetables, fruits and cereals respectively against their 44.46 per cent share in area whereas they have lower share in pulses and oilseeds than that of large farmers. Their share is 69 per cent in milk production. They deploy lower capital but make higher use of their family labour and family-owned inputs for intensive cultivation of crops, diversification of agriculture, and optimizing use of small holding.

According to the FAO, the S&MFs supplied as much as 7.2 million tons of food grains to the national grain market as early in 1990. Another FAO publication titled, *Smallholder Farmers in India: Food Security and Agricultural Policy (March 2002)* concluded: “India’s agricultural economy and food security depend vitally on the small-holder farmers...It is socially beneficial to the nation that the number of small-holdings should continue to increase. It is therefore incumbent upon the nation to assist the small-holder families to increase their productivity and to augment their assets and entitlements.” Assist them to produce more and not less, by incentivizing their production and productivity by direct cash subsidies.

The Food Bill is bound to encourage the S&MFs to go for easy alternatives like commercial crops and horticulture. Most States are deficient in food production. If in those States, S&MFs shift away from food grains, the country will face a huge dent in food security. That is precisely what the NFSA is likely to end up achieving by large scale state intervention that threatens to dis-incentivize and turn some 700 million producers of food into consumers of food-dependent Government supplies at subsidized rates.

Government’s Initiatives: Following initiatives can greatly help S&MFs to increase food productivity, output and profitability.

- a) The promotion of **Farmer Producers’ Organizations (FPOs)**, particularly by organizing smallholder producers, has the potential to reduce the costs of marketing of inputs and outputs, and provide a forum for members to share information, coordinate activities and make collective decisions.
- b) The **Small Farmers’ Agribusiness Consortium** has already mobilized 6.79 lakh farmers and

promoted about 700 FPOs, of which 243 have already been registered and the rest are under the process of registration.

- c) NABARD is also supporting producer organizations out of its **Producers Organizations Development Fund**, adopting a flexible approach to meet the needs of producers.
- d) Recently, the RBI has directed Scheduled Commercial Banks to achieve target of 8 per cent lending to S&MFs within the 18 per cent target set for agriculture, to be achieved in a phased manner, 7 per cent by March 2016 and 8 per cent by March 2017.
- e) Other important programs that can substantially benefit S&MFs include Soil Health Card Scheme, Pradhan Mantri Sinchai Yojana, Pradhan Mantri Fasal Bima Yojana, National Agricultural Market, Agricultural Portals, among others.

Need for Strategic Actions:

Following **strategic actions** will enable S&MFs to produce more food under the NSFA, 2013.

- i) **Integration of Technology with Credit and Services:** India can increase wheat production by 30 million tonnes or around 40 per cent and double paddy production at current levels of technology. This can be achieved by bridging the existing gap between the actual crop yields at field level and the potential yields. For achieving the expected level of productivity of wheat and paddy per unit of area and resources and realizing optimum rate of return on investment, S&MFs should be provided technical and financial guidance, based on analysis of farm soil and water, on cropping system, adoption of scientific techniques (when and how) and judicious use (no more, no less) of seeds, fertilizers, pesticides, water, labor and credit. The technology (how and when) of integrated nutrient supply, water and pest management needs wider dissemination among S&MFs through mass scale field demonstrations in coordination with bank staff. Production inputs, equipment and machinery should be of standard quality, reasonably priced and timely delivered. The crop farming must necessarily

be combined with livestock (poultry, dairy, sheep, pig farming) and fish farming to mitigate production, income and financial risk.

- ii) **Seed Replacement:** The hybrids and high-yielding seeds contribute to 20 per cent–25 per cent increase in crop- productivity. Unfortunately, S&MFs have been using their own farm-grown and saved seeds for decades rather than replacing by high-yielding seeds. Hence, timely supply of quality hybrid seeds at affordable prices to S&MFs is necessary for achieving higher agricultural production and productivity.
- iii) **Value Chains involving S&MFs:** Linking S&MFs to integrated market systems can improve economic viability of small holdings. Field studies on value chains indicate that participation of S&MFs make value chains more sustainable and more conducive to enhance their income. Thus, individual S&MFs face problems to access credit and technology to enhance production and are unable to benefit from input and output markets. They need to be facilitated to participate in an established value chain. Innovative business models viz. Amul, Nestlé, Safal, Namdhari, among others, have successfully demonstrated that S&MFs and other resource-poor households pursuing allied activities (dairy, poultry, sheep, goat, fish farming) can significantly benefit in terms of increase in production and income if they are brought together to participate in an established value chain.
- iv) **MSP benefits to S&MFs:** FCI will need to earmark lifting at least 10 per cent of targeted procurement under MSP scheme specifically from S&MFs.
- v) **Minimizing Food Wastage:** India accounts for significant losses due to pre and post-harvest wastages in cereals, pulses, fruits and vegetables. Replying to a parliamentarian's question, Former Agriculture Minister informed Parliament that agriculture produce to the tune of Rs. 50,000 crore i.e. 40 per cent of the total produce, was wasted every year in the country. In terms of overall food wastage, agricultural produce, poultry

and milk, India ranks seventh. India's lower ranking is because most of the countries ranking above it utilize much of their land in raising poultry, while a major chunk of land in India is under agriculture. That is why the highest wastage of cereals, pulses, fruits and vegetables occurs in India. Meat accounts for just four per cent of the food wastage but contributes 20 per cent in the economic cost of the wastage. Wastage of vegetables and fruits is 70 per cent of the total produce, but it translated into only 40 per cent of the economic losses. Programs to establish food processing industries, Mega Food Parks, cold chains, preservation infrastructure need to be intensively expanded to minimize wastage to 10 per cent by 2018-19.

Conclusion:

Massive awareness among S&MFs through print & electronic media involving village panchayats needs to be created about their rights to benefit from a plethora of Government schemes, including MSP, farm-subsidies and institutional credit and insurance cover. Government, NGOs and Banks can build capacity of S&MFs to use technology and credit for sustained food production.

Select References:

1. Chand Ramesh, Policy Brief: Demand for food grains during 11th Plan and towards 2020, NCAP, New Delhi.
2. Datt Gaurav and Mahajan Ashwani, 2013, Indian Economy. National food security mission, Ministry of Agriculture, Government of India.
3. Gulati Ashok, "Food Security Bill could Spark grain crisis", Times of India, March 21, 2013.
4. Gupta S.P., Report of Committee on India Vision 2020, December 2002, Planning commission, GOI., New Delhi, 30-34.
5. Hand book of Indian Economy, 2011-12, RBI.
6. "India's score alarming on hunger map", Times of India, Oct 12, 2012.

(The author is Associate Professor & Head, Dept of Economics, University of Mumbai. Email: gopal_kalkoti@yahoo.com)

NUTRITIONAL SECURITY IN INDIA

Sameera Saurabh

Raising rural income is central to ensuring Food and Nutrition Security for which colossal improvements in rural infrastructure are required. The structure of poverty alleviation programmes should suit the specific needs of poor communities, especially in rural areas. Food & Nutrition Security need to be given high priority and efforts to increase production and economic accessibility needed to be addressed by technological innovations, investments in irrigation, creating rural infrastructure and raising rural employment opportunities.

In the contemporary scenario, our nation is set to emerge as one of the world's most thriving and promising economies. It is imperative that an inclusive approach to resolve the problems facing rural India be undertaken. India is largely an agrarian based rural economy with a predominant unorganized sector. 68.84 per cent of India's population lives in rural areas. Distribution of main workers by industrial category in Census-2011 shows that agriculture sector still employs the largest number of workers. The dependence on agriculture is brought out by the fact that of the 313 million main workers in the country, 166 million (56.6 per cent) have been engaged in 'Agricultural and allied activities'.

'Sustainable Development Goals (2030) aim to end all forms of malnutrition, including achieving by 2025 the internationally agreed targets on stunting and wasting in children under five years of age and address nutritional needs of adolescent girls, pregnant and lactating women and older persons. The United Nations Decade of Action on Nutrition (2016-2025) promotes policy coherence between food systems, nutrition and health to accelerate efforts to reduce malnutrition.'

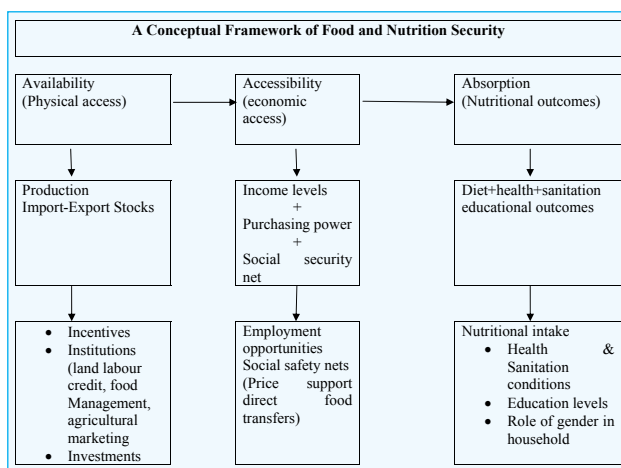
Food Security means availability of sufficient food grains to meet the domestic demand as well as access at the individual level, to adequate quantities of food at affordable prices. This is a paradigm shift from a welfare approach to a rights based approach. About two

thirds, approximately 67 per cent of population will be entitled to receive subsidized food grains under Targeted Public Distribution System. Also Malnutrition is adversely impacting the country's development and health expenditure.

Food Security has evolved over time from 'freedom from hunger' in the early 1940s into broad concept encompassing three determinants: availability of food, access to food and absorption. Food Security concerns can be traced back to the trauma faced during the Bengal Famine in 1943 under British Colonial rule. Revolutionary self-sufficiency in food was achieved with the Green Revolution in the late 1960s and 1970s. The White Revolution (Operation Flood) and structural transformation in agriculture has helped to ensure food security to a large extent.

Ensuring food and nutrition security is a challenge for India even though it is a net





(Source: ADB Sustainable Development Working Paper Series No.16)

agricultural exporter, particularly of milk, fruits, vegetables and cereals. However, food availability is affected by climatic conditions, declining water resources and pests which decrease agricultural output. Despite rapid economic growth in recent years, economic access to food by persons living below poverty line remains problematic. The level of food absorption is also low. About 44 per cent of children under the age of 5 are underweight, 72 per cent of infants and around half of pregnant women are anaemic. Research has conclusively shown that malnutrition during pregnancy causes the child to have increased risk of future diseases like physical retardation and reduced cognitive abilities. India has been ranked 97th in 118 countries in Global Hunger Index in 2016. The GHI is a multidimensional index composed of four indicators – proportion of undernourished, prevalence of child mortality, child stunting and child wasting. The seriousness of hunger is reflected by data which shows that 15.2 per cent Indians are undernourished. The United Nations



annual report for 2014-15 stated that India has the world's highest number of hungry people in the world. Around one-fourth of world's hungry population is in India.

Determinants of Food Security:

- 1. Availability of Food (Physical Access):** Food availability is determined by domestic production, import capacity, food stocks and food aid.

India's Per Capital Availability of Food grains (2009-2013)

Year	Food grains (gms per day)
2009	444.0
2010	437.1
2011	453.6
2012	450.3
2013	510.8

(Source: PIB, Government of India)

Fluctuations in per capita net availability are mainly due to changes in production on account of variations in weather conditions, increasing population, change in stocks etc. Government of India implements various programmes/schemes e.g. Rashtriya Krishi Vikas Yojana, National Food Security Mission etc. with the objective of increasing productivity. In addition, Indian Council of Agricultural Universities have developed a number of improved varieties/hybrids of food grains crops to enhance production and productivity. Government also imports agricultural commodities to augment their domestic availability.

2. Accessibility (Economic Access):

In the post reform period, more than 300 million people continue to live in poverty and food accounts for more than 50 per cent of monthly per capita expenditure in India. To tackle with food security problem, India operates one of the largest food safety nets in the world- the National Food Security Act 2013.

Government of India is implementing this scheme which provides nearly 800 million people (67 per cent of the country's population and 10 per cent of the world's) with subsidized monthly households

rations. India's PDS (Public Distribution System) is the largest distribution network of its kind in the world. In addition, the Antyodaya Anna Yojana was launched in 2000 for the poorest of BPL families. Other measures taken by the Government include providing incentives through higher Minimum Support Prices of agricultural commodities, developing rural infrastructure through MGNREGA, increase in credit flow to agriculture sector, interest subvention on crop loans etc.

3. Absorption (Nutritional Outcomes)

An interrelated aspect which needs immediate address is nutritional security. The Tenth Five Year Plan focused on comprehensive interventions aimed at improving nutrition security. Population needs adequate quantities of balanced diet to remain healthy. This can be supported by encouraging intake of pulses and eggs which remain important protein sources in the Indian diet.

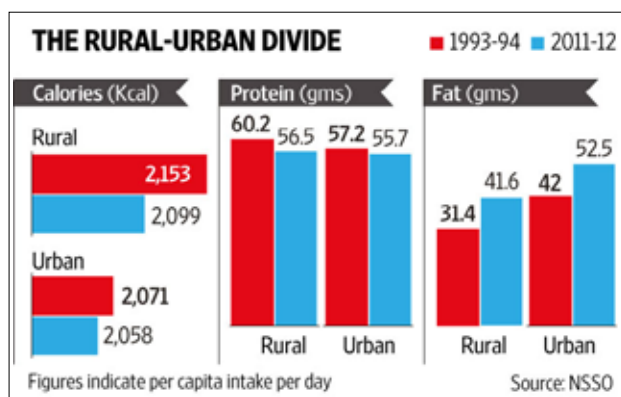
Nutrition Security has evolved over time from Multi-Sectoral Nutrition Planning approach in the 1970s and UNICEF conceptual framework. Body size and physical activity levels are two major determinants of human nutrient requirements. The 1996 World Food Summit provided a comprehensive definition of food security bringing into focus the linkage between food, nutrition and health. Nutrition includes assessment of under five underweight and low BMI in adults. The National Nutrition Monitoring Board and National Family Health Survey provide data on nutritional status using Gomez classification and Bio-Mass Index (BMI).

All India Projections of Households Food Demand

(Million tons per annum)

	2010	2020
Rice	97.99	118.93
Wheat	72.07	92.37
Pulses	14.58	19.53
Milk & Milk Products	106.43	165.84
Meat and Fish	7.25	10.80
Fruits and vegetable	75.21	113.17

(Source: Centre for Economic and Social Studies, Hyderabad)



Nutritional Security requires 'food', 'health' and 'care' simultaneously. Nutrition Security, therefore, cannot be achieved without Food Security at the household level. The nutrition status can be improved even if food insecurity and poverty continues to exist, through improved 'nutrition supportive' decisions and behaviour or measures such as mandatory fortification of carefully chosen food consumed by majority of population to deliver much needed micronutrients. In practice, Food Security is not always understood comprehensively. The term does not give adequate emphasis on importance of food for better nutrition. Nutrition Security encompasses access to adequate food, child care and feeding practices and socio-economic indicators such as health and sanitation.

The two major determinants of human nutrient requirements are body size and physical activity. The revised recommended dietary allowances (RDA) for Indians takes cognizance of the current body weight and physical activity while computing the energy and nutrient requirements. In policy formulation, a distinction should be made between transient and chronic food security. Transient food insecurity is related to risks in either access or availability of food during the off-season, drought or inflationary years. In contrast, chronic food security is associated with poverty and arises due to continuous inadequate diet. Market oriented policies expose the rural poor to the risks of market uncertainties.

The policy guideline to overcome this issue includes intervention by the Government to encourage agricultural production programme and productivity, create sustainable rural infrastructure and providing rural skilling and training to raise the purchasing power of the rural poor. Achieving

long term food security demands that research in production of non-cereal food and technology access to rural small farmers should be improved. Enhancing food quality and improving market access need to be priority goals.

The National Sample Survey Office (NSSO) data for 2011-12 data on Nutritional intake showed that per capita calorie consumption rose to 2099 kilocalories per day in rural areas and 2058 kilocalories per day in urban areas. However, the erstwhile Planning Commission's benchmark was 2400 calories per day. The implications of the per capita calorie intake in India which grew marginally after three decades are unclear. For one, India's most developed States have the lowest average calorie consumption, pointing to the fact that higher calorie intake may not be directly correlated to overall well being. However, calorie consumption is expected to rise steadily with family incomes. The top five per cent of rural Indians consume double the calories as the bottom five per cent. The share of cereals in total calorie intake has steadily declined and is down to 50 per cent in rural India. The average Indian had access to 2455 kilocalories per day with protein and fat availability at 60 gm and 52.1 gm respectively, according to OECD(2014). This is far lower than at least the 3000 kilocalories per day availability for OECD nations. Factors such as wastage of stocks are also to blame for poor availability. For instance, the Food Corporation of India data show 3000 tonnes of food grains were damaged in 2015-16. In 2014-15, quantity of damaged grains stood at 19,000 tonnes. However, per capita food availability does not reveal the whole picture. Data from NSSO shows that both total calories and proteins consumed have fallen in the two decades to 2011-12. The overall nutritional status of half of the population is not very encouraging as there is severe under-nourishment in the bottom 30 per cent of the expenditure class

Conclusion:

As the country's economy grows rapidly, the expected trend is for people to eat less cereals and switch to more costlier nutritious food such as meat, milk, fruits and fish. Indians, including the poor, are now consuming fewer cereals but they are not increasing their intake of calorie-rich food. NSSO data also reveals that, over time, more

and more Indians, despite rising wages, have not been meeting recommended calorie requirements of 2400 calories per person per day in rural areas and 2100 in urban areas. It is important to note that in the past decade, access to and availability of food has increased through the Public Distribution System, Midday Meal Scheme for school children and the Integrated Child Development Services for kids upto the age of six and their mothers. The MGNREGA, which was launched more than a decade back, guarantees at least 100 days of work a year for every rural household, has also improved the purchasing power of the rural poor and has created rural assets which have resulted in better calorie intake in rural areas. Annapurna Scheme under the National Social Assistance Programme (NSAP), under which 10 kg of food grains per month are provided free of cost to those senior citizens who, though eligible under Indira Gandhi National Old Age Pension Scheme (IGNOAPS), are not receiving old age pension scheme under NSAP need to be reviewed with implementation of National Food Security Act, 2013. The Act provides for coverage of up to 75 per cent of the rural population for receiving subsidized food grains under Targeted Public Distribution System (TPDS). Under the Act, the eligible persons are entitled to receive 5 Kgs of food grains per person per month at subsidized prices of Rs.3/2/1 per Kg. for rice/wheat/coarse grains. 2.49 crore Antyodaya Anna Yojana (AAY) families, which constitute the poorest of the poor, continue to receive 35 Kgs of food grains per household per month.

Raising rural income is central to ensuring Food and Nutrition Security for which colossal improvements in rural infrastructure are required. The structure of poverty alleviation programmes should suit the specific needs of poor communities, especially in rural areas. Food & Nutrition Security needs to be given a high priority and efforts to increase production and economic accessibility needed to be addressed by technological innovations, investments in irrigation, creating rural infrastructure and raising rural employment opportunities.

(The Author is IES and Director, Ministry of Rural Development. Email: sameera.saurabh@gmail.com)

SWACHH SWASTH SARVATRA LAUNCHED

'Swachh Swasth Sarvatra' is an inter-ministerial joint initiative between the Ministry of Drinking Water and Sanitation and the Ministry of Health and Family Welfare. It was launched to commemorate the Good Governance Day 2016 in the presence of the Union Minister of Health and Family Welfare, Ministry of Human Resource Development, and Secretary, Ministry of Drinking Water and Sanitation. Another joint initiative, 'Swasth Bacche Swasth Bharat', between Ministry of Health and Family Welfare and the Ministry of Human Resource Development was also launched on the occasion.

The objective of the 'Swachh Swasth Sarvatra' initiative is to build on and leverage achievements of two complementary programmes – Swachh Bharat Mission (SBM) of the Ministry of Drinking Water and Sanitation and Kayakalp – Ministry of Health and Family Welfare. Under this initiative:

Ministry of Drinking Water and Sanitation has declared over 700 blocks as Open Defecation Free (ODF). Community Health Centres (CHCs) in ODF blocks of the country will be allocated Rs 10 lakhs under National Health Mission (NHM) to focus on sanitation and hygiene.



Under Kayakalp, one Primary Health Centre (PHCs) in each district is awarded for meeting quality standards including sanitation and hygiene. Under SBM, the Gram Panchayat in which the PHC which gets awarded under Kayakalp for that district will be noted, and special focus will be given to make it ODF at the earliest.

The Union Minister of Health and Family Welfare said that this initiative would be a very important step towards convergence of various government schemes and programmes. By merging the goals of Swachh Bharat with his Ministry's focus on health, the two will be able to move the needle from hospital-care to healthcare, i.e. from treatment of diseases to prevention of diseases by focussing on improved overall health.

Union Minister of Human Resource Development called the power of children as agents of change. He said that Swachh Bharat focusses on mindset change – which does not need any big technological or infrastructural intervention – but a focussed behaviour change campaign. Educated children will be the best agents to spread the message of sanitation to their parents. By focusing on children, Swachh Swasth Sarvatra will lead to an ODF India by 2019.

Secretary, Ministry of Drinking Water and Sanitation, said that over 70 districts, over 700 blocks, and over 1.3 lakh villages of the country have achieved ODF status so far, and many others are very close to the target. He highlighted convergence across Ministries undertaken to launch Swachh Swasth Sarvatra as the perfect example of the Prime Minister's message to make SBM a *jan aandolan*, i.e. sanitation as everybody's business. He said that another collaboration is underway between Ministry of Drinking Water and Sanitation and the Ministry of Human Resource Development for focused action in the sector of school sanitation.

Secretary, Ministry of Health and Family Welfare, spoke about how, the small cost of focusing on clean, sanitary and hygienic health centres in the country, will lead to huge health benefits in terms of avoidable communicable diseases through the initiative. He also lauded the commitment and dedication shown by SBM and health functionaries at grassroots, who are working on the frontlines to bring about this revolution in the country.

ADDRESSING ISSUES OF FOOD STORAGE MANAGEMENT

Mahendra Patel

Government's initiatives to accept and implement the major recommendations of the Shanta Kumar Committee on restructuring of the FCI will go a long way to streamline and ease the problem of the storage in the light of envisaged recommendations on the procurement and distribution of food grains through Direct Benefit Transfer scheme linked to banks for eligible beneficiaries of the NFSA.

India has the potential and capacity to increase and feed everyone under the National Food Security Act, 2013 if food losses due to huge wastages are substantially minimized and the Food Corporation of India [FCI] is enabled to execute its mandated food management policies efficiently viz. food procurement, storage, transportation and distribution in particular. FCI has to store food grains for sufficient period to meet the requirements of Public Distribution System and Government's other welfare schemes. Now, FCI has a significant responsibility under the NFSA, 2013. Against this background, this article highlights the issues of food storage management that need to be addressed.

Importance of Warehouses:

Warehouses provide scientific storage of food grains to ensure quality-maintenance and prevent losses by protecting them from the vagaries of weather, infestation of rodents, insects and pests. They offer services, viz. disinfections, pest control, fumigation, clearing etc. They help in stabilizing price levels by regulating the supply of goods in the markets as more goods from the buffer are released when supplies are less in the market and less is released when supplies are more in the markets. They, also, offer market intelligence in the form of price, supply and demand information to

facilitate market users to develop selling and buying strategies.

Current Status of Storage Capacity:

The FCI has the largest agricultural warehousing systems providing over 357.89 lakh tons of storage capacity with a network of over 1451 godowns strategically located all over India. This includes owned as well as hired warehouses. FCI has also hired storage capacities from Central Warehousing Corporation [CWC], State Warehousing Corporations [SWC], State Agencies and Private Parties for short term as well as for guaranteed period under Private Entrepreneurs Guarantee Scheme [PEGS]. As on 1-01-2016, CWCs had 464 warehouses with a storage capacity of 114.10 lakh tons. Similarly, as on 30-11-2015, SWCs in 17 States had 1707 warehouses with storage capacity of 288.93 lakh tons. FCI is constructing



Storage Capacity for Central Pool Stocks for the last five Years: [Lakh Tons]

Agency	1-04-2011	1-04-2012	1-04-2013	1-04-2014	1-04-2015	1-04-2016
FCI	316.10	336.04	377.35	368.90	356.63	357.89
Others	291.32	341.35	354.28	379.18	352.59	456.95
Total	607.42	677.39	731.63	748.09	709.22	814.84

(Source: FCI)

additional god owns through Private Participation under PEGS.

Total storage capacity available with FCI and other agencies significantly increased during 2011-16 by 34.15 per cent from 607.42 lakh tons in 2011 to 814.84 lakh tons in 2016. This includes 456.95 lakh tons of storage capacities [both Covered and CAP] available with State Agencies for Central Pool stock of food grains.

Northern zone accounts for as high as 67 per cent of the total storage capacity followed by southern zone [14per cent], western zone [11per cent], eastern zone [07per cent] and north-eastern zone [01per cent]. While 64 per cent storage space is available in five States [Punjab, Haryana, Uttar Pradesh, Chhattisgarh and Andhra Pradesh] 13 per cent is in two States [Rajasthan and Maharashtra] and 23 per cent is shared by 24 States and UTs. To improve the supply chain logistics for TPDS, the Central Government has emphasized upon State Governments to create intermediate storage capacities at Block/ Taluka level to store food grains collected from FCI depots for distribution to fair price shops.

Innovative Approach:

FCI has planned to mechanize and modernize its storage facilities by constructing steel silos in PPP mode through FCI, State Governments and CWC. Construction of steel silos and their utilization for storing and transportation of food grains in bulk would be beneficial to the nation, besides creating an efficient Food Supply Chain Management System. Already FCI has constructed steel silos of 5.5lakh tons capacity. Bulk storage and handling of food grains in steel silos ensures better preservation of food grains and enhances its shelf-life. Losses due to theft and pilferage during transport of food grains can be negligible when

food grains are stored in steel silos and transported in bulk, as compared to food grains stored in bags in conventional warehouses. Substantial benefit of adopting steel silos in a land-scarce India is that it requires approximately 1/3rd land as compared to conventional storage warehouses. Silos can be operated round the clock which brings flexibility and improves overall efficiency.

Challenges:

Following issues need to be addressed to significantly minimize the huge wastage of food grains during storage:

Non-compliance with Procedure:

- Despite the strict policy of First-In-First-Out (FIFO) with respect to the crop year as well as within crop year during which the stocks are accepted, the CAG report of 2013 revealed non-adherence to the policy as a total of 125.99 lakh tons of food grains pertaining to crop years 2008-09 to 2011-11 were lying in the central pool as on 31 March, 2012.
- In absence of covered storage space, food grains are stored under the cover and plinth [CAP] storage [open storage] without following the established procedure which requires that the stack should be turned over every six months and in no case grains be stored for more than a year.
- Normally, storage in open in the form of CAP is supposed to be resorted to during peak procurement seasons but the storage in the CAP should not be more than a year with atleast one turn-over of the stock every 6 months to retain the quality of the food grains. Further, for proper aeration, the cover has to be removed at least 2 to 3 times in a week. Unfortunately, lot of stock is lying in the open



where even the plinths are not available. This exposes grains to moisture, rodents, birds and pests. Unexpected rainstorms and bad weather make matters even worse [iv] during procurement season, for want of adequate CAP storage facilities, stocks are simply dumped and stacked on open spaces wherever feasible and much of these stocks get damaged because of seepage of water from the ground in the absence of proper plinth or due to floods and rains.

Excessive Procurement:

- One of the key challenges for FCI has been to carry buffer stocks far in excess of prescribed norms. During the last five years, on an average, buffer stocks with FCI have been more than double the buffer stocking norms creating unbearable pressure on limited storage capacity. For example, as of April 1, 2012, as against the storage capacity of 34.135 MT, the total food stock reached 62.9 MT as of March 1, 2013.
- The stocks with public agencies have been far exceeding the buffer stock norms, crossing 80 MT on July 1st 2012 against a buffer stock norm of 31.9 MT. The data of past several years revealed that actual stocks with public agencies vis-à-vis buffer stock norms in most of the years, stocks have been much higher than the buffer stock norms. In some years, as in 2002-03 and 2012-13, they have been massive. In the last three years [2011-12 to 2013-14], the actual stocks were consistently more than double the buffer stock norms of 31.9 MT for July 1st, taking into account, the needs of both operational and strategic stocks. On an average, for the three year period, roughly 40

MT of “excessive” grains were kept in public stocks without serving much purpose.

Stock Not Moved out:

- One of the reasons for the wastage of food is that grains are not moved out of the warehouses in time and distributed. Due to this problem, 1.06 lakh tons of wheat in Haryana and Punjab were damaged. Huge quantities of grains pertaining to years 2008-09 were found in the FCI godowns in March 2012.

Allocated Stock not lifted:

- During 2008-09 to 2009-10, procurement increased by six lakh tons and allocations increased substantially by 161 lakh tons. However, the corresponding offtake increased by 104 lakh tons making lesser storage space available for the ensuring season’s stock.
- According to the CAG report of 2013, the aggregate wheat stock available with the State Government Agencies of Punjab and Haryana at the end of each procurement season during 2006-07 to 2011-12 was 609.83 lakh tons against which the aggregate vacant storage space available in the major wheat consuming states was 164.82 lakh tons. As much as 3.52 lakh tons out of a total of 4.62 lakh tons of available silo storage facility was lying unused for a period ranging from eight to 30 years.

Storage Gap:

- Storage policy aims at achieving availability of storage capacity to meet the storage requirements for holding operational stock of foodgrains [four months].
- The CAG report revealed that between 2008 and 2012, the gap in storage capacity with FCI progressively increased from 59.95 to 331.85 lakh tons in food consuming States.

Requirements:

Following aspects need priority attention for efficient storage management of food grains:

Efficient Capacity Utilization:

- For optimum utilization of the capacity, proper planning for timely moving stock from the



major procuring states to the consuming states can make available storage space for ensuring procurements. Use of sophisticated information technology supported by robust monitoring and management information system can help in this regard.

Use of Silo Bags:

- Silo bags are a type of polythene bags with three layers. The first two layers are white in colour to filter ultra violet rays and make the bag weather-proof. The third layer is black to keep out sunlight. This technology developed in Argentina has been successfully used in 32 countries since last 12 years. Madhya Pradesh Government has been using silo bags since almost a year to avoid the wastage of food grains. Few private agro companies in Maharashtra, Punjab and Rajasthan have also started using silo bags for storage. The basic principle is to keep the grain in a modified atmosphere, low in oxygen and with a high concentration of carbon dioxide. Once the bag is filled and sealed, the conditions within the bag control breeding vermin, insects and fungi, requiring no fumigation. Bags are stored in fields with sufficient drainage. All fields are scaled, cleaned and cleared of grass, weeds and rocks to make it suitable for storing bags. Each Bag can hold up to 200 tons of grains and around 10 bags can be stored per acre. Once filled up and sealed, the bags can be left on flat and open land for 18-24 months.

Shanta Kumar Committee: Following specific recommendations need to be implemented:-

Buffer Stock:

- Committee has recommended to continue with only 5 MT in physical stocks, and another 5 MT in the form of foreign exchange reserves that can be used anytime when the need arises.

Storage Reforms:

- Not to store grain in “CAP” godowns. Convert them into “Silos” with Mechanized / robotic assemblies in PPP mode.
- To transport grains in containers, instead of gunny-bags to reduce losses.
- Immediately after the procurement, give 6 months’ ration to poor-beneficiaries, with cheap-grain bins for storage. Thus, FCI will have to store less grain in its godowns.
- Total end-to-end computerization of the entire food management system, starting from procurement from farmers, to stocking, movement, and finally distribution through the TPDS.
- To create a central database with daily updates from all warehouses as to the availability of covered, CAP storages and silos to better manage the stocks.
- Proper integration of all regions with an efficient and robust MIS manned by efficient and competent professionals.
- CAP storage should be gradually phased out with no grain stocks remaining in CAP for more than 3 months and replaced by Silo bags.

Conclusion:

Government’s initiatives to accept and implement the major recommendations of the Shanta Kumar Committee on restructuring of the FCI will go a long way to streamline and ease the problem of the storage in the light of envisaged recommendations on the procurement and distribution of food grains through Direct Benefit Transfer scheme linked to banks for eligible beneficiaries of the NFSA.

(The author is Agriculture and Rural Development Specialist. Email: mahendra_2741@yahoo.com)

TRANSPARENCY IN PUBLIC FOOD DISTRIBUTION THROUGH DIGITIZATION

Dibakar Lenka

Identification of unique individuals and families is the vital element to bring transparency in PDS. The role of data cleaning and management through biometric updation is the most important. Use of this can lead to a high-quality beneficiary database without duplication and perpetration of ghost cards. The UID database can also be used by the PDS system for confirmation of off take by the resident. The efficiency and transparency improvements in the PDS system will make it one of the best-run pro-poor schemes in the country.

State resources are continuously utilized in the name of poverty alleviation and disparity reduction. Even after 69 years of independence, the country is still suffering from poverty and disparities. A series of welfare schemes over the last 60 years failed to end the miseries of the bottom segments of population in the economic ladder. In the past few years, technology has become the tool to bring transparency and effectiveness in welfare measures. Most states have now digitized their PDS to pass on subsidy benefits to targeted group of beneficiaries. The objective is that the Cash transfers can directly improve the economic lives of poor, and raise economic efficiency by reducing leakages and market distortions.

Background:

According to the Economic Survey 2014-15, about 4.2 per cent of the GDP, which works out to roughly Rs 3.78 lakh crore was spent on key subsidies in the Financial Year March 2015. Out of the total subsidies, Rs 1.23 lakh crore was food subsidy (1.14 per cent of GDP). Food subsidy during 2015 -16 was around Rs 1.24 lakh crore . As per an estimate of FAO, during 2010-12 and 2014-16, undernourished population of the country was Rs18.99 crore (15.6 per cent) and 19.46

crore (15.2 per cent) respectively. It is widely accepted that India's welfare system is suffering with leakages. Rampant corruption diverted the benefits intended for the poor to the pockets of middlemen and corrupt officials. Neither the system covers the genuine beneficiaries, nor does it support the recipients with total of benefits. Consequently, nearly 22 per cent of the population is still living below poverty line. Aadhaar based cash transfer, cashless environment, efficiency in communication and administration are different initiatives of Government to pass on direct benefits to the poor.

Public Distribution System (PDS)

PDS was introduced after 2nd World War due



to severe food shortages in the country. Initially, the subsidy was common to all. In 1990's, PDS was restructured to include hilly and inaccessible areas. Finally, the scheme was moved with a targeted approach and is known as Targeted PDS (TPDS). Under Essential Commodities act 2001, Public distribution system order was passed. It governs rules regarding identification of beneficiaries and commodities to be included for PDS. Department of Rural Development through BPL survey decides criteria for inclusion or exclusion of beneficiaries. Finally, individual states identify the beneficiary households. Central govt. allocates food grains as per list prepared by NITI Aayog (erstwhile Planning Commission) based on families of BPL category to each state. Enactment of Food security Act, 2013 has done away with the need for BPL based identification.

What is Food Security?

Food security ensures 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. Food security has three important and closely related components, which are availability of food, access to food, and absorption of food. Food security is thus, a multi-dimensional concept and extends beyond the production, availability and demand for food. Ensuring food security is the basic goal of social justice, apart from development of adequate human resources.

Components of Food Security:

- 1) Production and procurement.
- 2) Storage
- 3) Distribution.

All these functions are performed through the PDS (Public Distribution System). PDS is operated under the joint responsibility of the Central and the State Governments. The Central Government, through Food Corporation of India (FCI), has assumed the responsibility for procurement, storage, transportation and bulk allocation of food grains to the State Governments. The operational responsibility including allocation within State, identification of eligible families, issue of Ration Cards and



supervision of the functioning of Fair Price Shops (FPSs) etc., rest with the State Governments.

Food Security: Issues

Though, the functioning of PDS has ensured the availability of essential commodities to the people, the system is often blamed for:

- Lack of efficiency.
- Discrimination in Rural-urban service delivery.
- Many instances of corruption and black marketing, known as PDS leakages.
- Identification of poor by the states is not fool proof.
- A large number of poor and needy persons are left out.
- Lot of fake and shadow ration cards are available in the market.
- Fair Price Shop owner uses bogus Ration cards and sell the food grains in the open market.
- Many times, good quality food grains are replaced with poor quality food grains.
- Uneven distribution of food grains all over the country.

National food Security Act: Some Provisions

- 1) **Coverage:** 75 per cent of the rural and 50 per cent of the urban population will be covered under targeted PDS, with uniform entitlement of 5 kg food grain per person per month. However, beneficiaries of Antyodaya Anna Yojana (AAY) households will be protected at 35

kg per household per month as they constitute poorest of the poor in the society.

- 2) **Subsidized prices:** Food grains under TPDS are made available at subsidized prices and in future, it will be linked to Minimum Support Price (MSP).
- 3) **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.
- 4) **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.
- 5) **Transportation Cost:** Central Government will provide assistance to States in meeting the expenditure incurred by them on transportation of food grains within the State.
- 6) **Food Security Allowance:** Provision for food security allowance to entitled beneficiaries in case of non-supply of entitled food grains or meals.

under this Scheme are to be utilized under the Integrated Child Development Scheme (ICDS) for providing nutritious food to children below 6 years of age, expected and lactating mother.

- 3) **Annapurna Scheme:** Needy senior citizens of 65 years of age or above who are not getting 'Old Age Pension' are provided 10 kgs of food grains per person per month without any cost.
- 4) **Rajiv Gandhi Scheme for Empowerment of Adolescent Girls (RGSEAG):** The Scheme aims at empowering adolescent girls of 11-18 years by improvement of their nutritional and health status and upgrading various skills. This scheme has provision of 100 grams of grains per beneficiary per day for 300 days in a year.

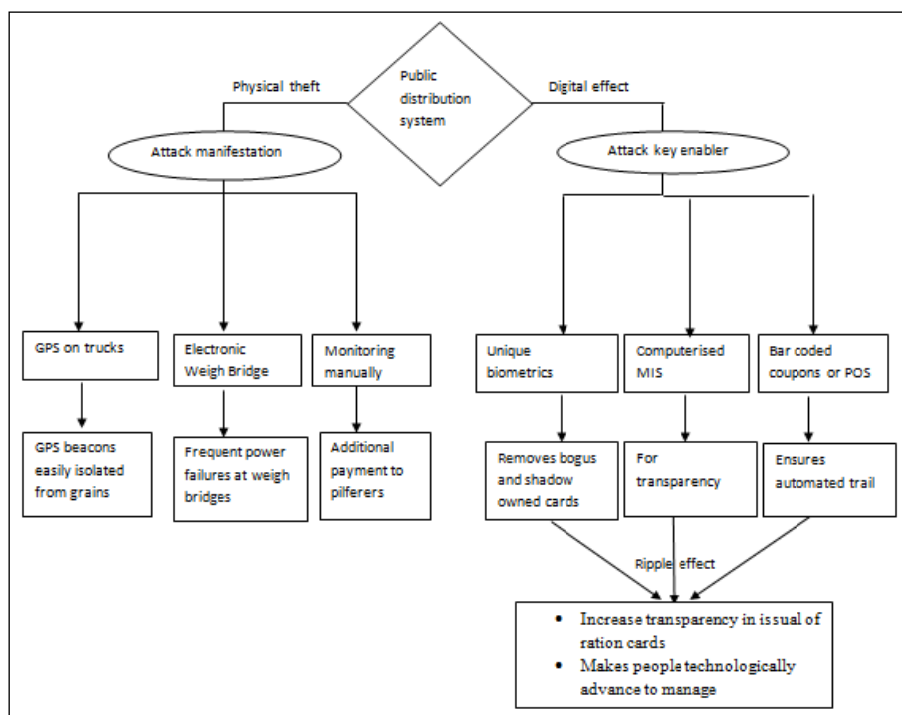
DBT Solution of Food Subsidy:

DBT aims to transfer subsidies directly to the people through their bank accounts, using the Aadhaar Payment Bridge of NPCI. It is hoped that crediting subsidies into bank accounts will reduce leakages, delays, etc. During 2017-18, the Centre's food subsidy bill is expected to go down

Other Welfare Schemes:

Apart from TPDS and Food Security Act, there are number of other schemes. Important among them are:-

- 1) **Mid-Day Meal Scheme:** The Scheme presently covers students of Class I-VIII. It was launched with an objective to improve enrollment, retention, attendance and simultaneously improving nutritional levels among students.
- 2) **Wheat Based Nutrition Program (WBNP):** The food grains allotted



Flow Chart-1: Digital control for better transparency in PDS

by ₹25,000 crore annually, due to the Direct Benefit Transfer arrangement. The Centre's overall subsidy bill is also expected to dip further with the planned extension of the DBT. State governments are expected to automate all the 5.4 lakh fair price shops and install Point of Sale machines for distribution of subsidized food grains. This will be a massive step for systematic identification of beneficiaries and cutting down on leakages.

Digital solution to the problem:

Major challenges in the PDS system emanates from bogus ration cards belonging to fictitious families and shadow ration cards, that is genuine ration cards are being used by someone else. Attempts of preventing physical theft by human monitoring, Global Positioning System (GPS) of truck movement and electronic weigh bridge are inadequate and easily by-passable. Leakages of various forms cannot be avoided through this way. Quality and transparency in beneficiary database, followed by tracking of Individual Beneficiary off take, coupled with a computerized MIS system can effectively improve the PDS system. By leveraging e-governance, initiatives can minimize leakage and pilferage.

Solution: Some Factors

a) Creation of a Beneficiary Database:

The government should create a quality beneficiary database by conducting house-to-house survey and by enrolling each family member into Unique ID program. Information of each family member must be digitized. The digitized database will contain ten finger biometrics and photographic information of all family members. This enrolled data would be sent to Unique Identity Authority of India for printing on the ration card for each member to avoid card duplication.

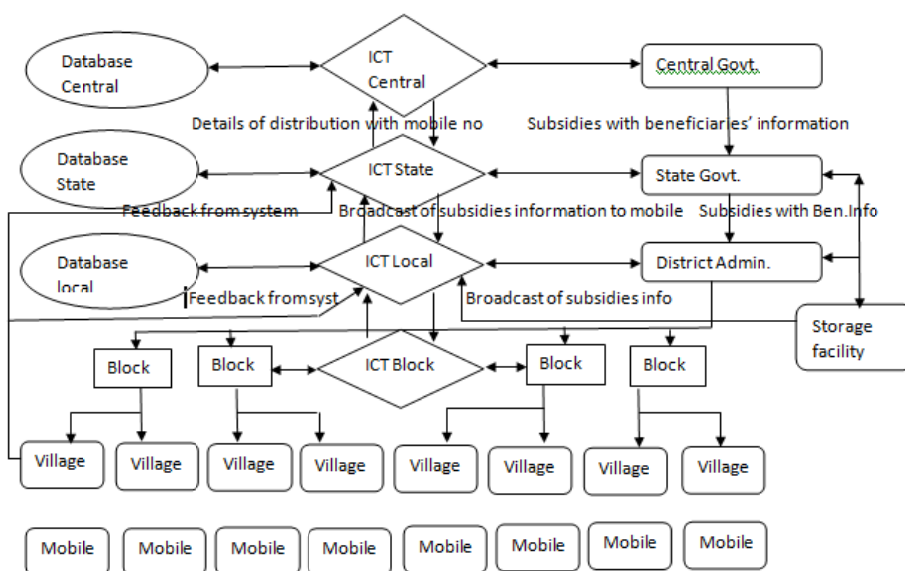
The inclusion of all families in the beneficiary database is important for an effective elimination of Shadow and Bogus cards.

b) Individual Beneficiary Tracking:

Eligible beneficiaries sometimes do not avail of their entire allotment due to immediate unavailability of funds, usage of own farm grains and temporary absence in the locality. But Fair Price Shop owners report a complete off take of allotments. The most ideal option is the deployment of a Point of Sale (POS) system, equipped with a fingerprint reader to identify a beneficiary before an issue is made. The POS system can automate the book keeping and generate receipt. This data can be updated each month in the data base server. As the server data are available and accessible everywhere, it also creates considerable flexibility in the choice of FPS for the consumer and introduces competitiveness between different FPS. (Flow Chart-1)

Information, Communication Technology Infrastructure (ICT) base Solution

Information Communication Technology (ICT) infrastructure needs to be deployed to connect all the key offices of the Food Department including the Secretariat, Commissioner Cell, District Offices, Block offices and Sale Points both horizontally and vertically for transparent



Flow Chart-2: ICT model of PDS for better efficiency and control

communication. Central Government Data Center to host the beneficiary database and all other crucial MIS needs by the Department. The Central Data Center could be linked with the State Data Center (SDC) being setup under the National E-Governance Action Plan (NEGAP) and the State Wide Area Network (SWAN). Software should include a ration card management system, an individual beneficiary offtake analysis system and an automated allotment system etc. A full-featured MIS system is the need of the Departments. Appropriate mechanism and set up for data management and administration to extend the benefits of computerization to the field force are the essential parts of the ICT. This also includes the use of mobile hand set, handheld devices or the POS for managing inspections and other data collection activities. Common Service Centers (CSCs) under the National E-governances Action Plan can be used for Grievance submission and redressal as also for services such as issue of duplicate ration cards and changes to ration cards. There must be horizontal and vertical movement of information by use of beneficiary mobile at last mile to Block, District, State and Centre for better transparency and effective PDS mechanism (Flow Chart-2)

ICT Solution: Major Benefits

- Better Identification of individuals and families leading to better targeting and increased transparency.
- The PDS system can use the database for authentication of beneficiaries during the off take process. A mechanism of verifying the ID of the person at the time of delivery of grains will help in improving the targeting of the grains and beneficiaries.
- Technology specifications and infrastructure to handle enrollment, storage and identity confirmation of all Indian residents. The PDS system can leverage this and rapidly move ahead with the enrollment process.
- Duplicate and Ghost detection becomes easier.
- This data base can be utilized for Direct Benefit Transfer through bank account.

Other Steps to Strengthen PDS:

1. Decentralized of procurement and distribution of locally produce food grain would ensure diversity of food grains requirement.
2. Proper identification and classification of beneficiaries, APL, BPL, or AAY household in a foolproof manner.
3. Incentivizing the Fair Price Shops (FPSs) for extended opening hours and selling commodities not covered under PDS with permission.
4. Computerization and other technology-based reforms to TPDS have succeeded in plugging leakages of food grains. It is important to mention the e-PDS project of Chhattisgarh government which has real time GPS monitoring from depots to the FPSs. has shown an encouraging result.
5. Under coupon system, grains will not be given at a subsidized rate to the PDS stores. Instead, beneficiaries will use the food coupons to purchase food grains from retailers/PDS stores. Retailers take these coupons to the local bank and are reimbursed with money. This coupon comes back to state agency that is then compensated by government as per value of coupon. Food coupons also decrease the scope for corruption since the store owner gets the same price from all buyers.

Conclusion

Identification of unique individuals and families is the vital element to bring transparency in PDS. The role of data cleaning and management through biometric updation is the most important. Use of this can lead to a high-quality beneficiary database without duplication and perpetration of ghost cards. The UID database can also be used by the PDS system for confirmation of off take by the resident. The efficiency and transparency improvements in the PDS system will make it one of the best-run pro-poor schemes in the country.

(The author is Agricultural Specialist. Email: dibakarlenka1960@gmail.com)

GOOD HARVEST, CASH CRUNCH & DEMONETIZATION

Dipak Kumar Dash

Farmers, particularly those engaged in cultivation of vegetables, have always been vulnerable to take the hit because of market condition or good harvest. There is a need to put in place an adequate storage facility so that they can avoid distress sale. Options should be explored how to provide some security to such farmers.

Bracing two years' consecutive draught like situation, farmers across India were hopeful of a good year because of above-normal monsoon, which had pushed the vegetable production during winter. But the sudden decision to call back old Rs 1,000 and Rs 500 notes in November posed a big challenge to them.

The prices of key food items, particularly vegetables produced by farmers, fell to a record low. While government reports of retail prices of key food items were not that depressing in November and December 2016, the ground reports from different districts and states indicated how farmers were facing the worst; selling their produce at throwaway price and in several cases, some of them even preferred the produce to rot in the field. However, prices of rice, wheat, atta and sugar were little more than the previous year.

As such, the prices of vegetables reach the bottom every year during winter because of more availability of green vegetables. But this time, production was much more than usual because of good monsoon and there was less availability of cash to buy the items. This made consumer the "king" even as he had little money in hand. He dictated his terms as it was "buyers' market".

Though it was suspected that the prices of seasonal vegetables and pulses will increase as and when the cash availability improved, it has not happened yet. This is visibly because of more than enough production of vegetables across the country. Trends across mandis showed how despite crashing prices, the arrival of fresh produce was much more than last year.

It indicated how farmer was helpless and had no option but to sell the produce at any price.

It was an open secret that demonetization of high value currency notes was bound to hit farmers and rural economy hard. Nearly 65 per cent of country's population depends on the rural economy and cash is the preferred mode of transaction in rural areas. Vegetable growers had the worst time.

According to National Horticulture Board, around 9.4 million hectares is under vegetable cultivation and 50 per cent of this is utilized for farming of potato, onion and tomato. As expected, scarcity of small denomination notes and newly introduced Rs 2,000 currency notes impacted the arrival at almost all the major mandis across country. For first two weeks after demonetization was announced, there was 20-30 per cent drop in arrivals of fruits and vegetables at Azadpurmandi in Delhi. It was no better in Vashi wholesale market in Mumbai. Azadpur and Vashi together receive more than 18,000 tonnes of fruits and vegetables daily.



Meanwhile, what came as a blessing to consumers was an adequate supply of fruits, vegetables, meat, milk, pulses and other commodities without any disruption. Good supply from local farms also helped meet requirement of consumers.

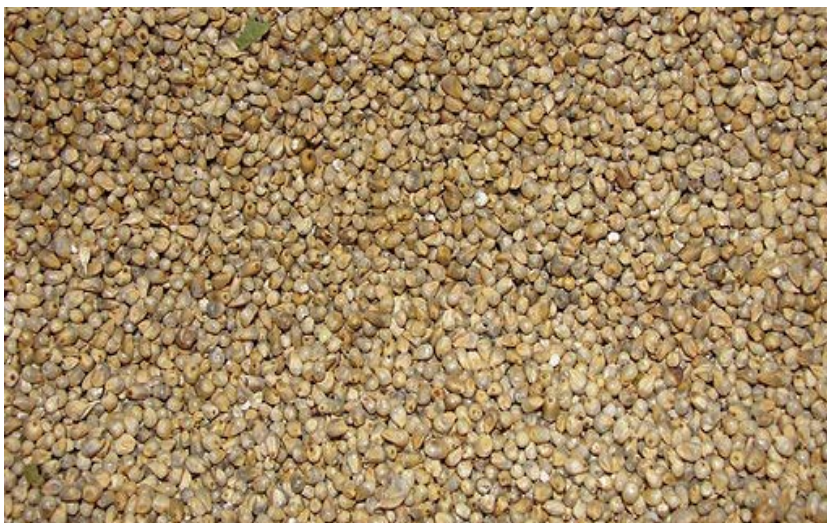
Though, situation has improved so far as adequate arrival of vegetables is concerned, reports are still pouring in from parts of Karnataka, Uttar Pradesh, Andhra Pradesh and West Bengal of how farmers are still selling their produce at a price, which is not enough even to recover their expenses.

There have been several reports of how farmers across the country lost huge investment in farming due to demonetization. Prices of almost all vegetables fell by at least 50 per cent within days after government announced demonetization in rural areas items such as cauliflower, cabbage, tomato almost came as gifts to consumers. Tomato was selling in parts of Karnataka such as Kolar at less than Re 2 a kg, cauliflower at Rs 2 a kg. In some parts, tomato prices crashed to less than a Rupee. There were also reports of farmers in Chhattisgarh dumping nearly 45,000 kg of tomatoes on an NH.

If it was tomato growers in southern states such as Karnataka and Tamil Nadu, in Maharashtra onion growers faced the worst. The price of potatoes also reached the bottom in Uttar Pradesh with retail price going below Rs 10 a kg in many parts of the state.

Farmers were also having problems in selling their produce as the buyers had no new currency notes. Farmers needed cash to repay their loans and also to start cultivation of rabi crops.

For ensuring that rabi crops sowing is not hampered due to cash crunch, the fertilizer companies were directed to continue providing credit facilities to retailers so that farmers got vital agricultural inputs on time. This followed after the fertilizer ministry had asked the cooperative societies, retailers and wholesalers to provide fertilizers to farmers through all modes of payments such as credit or through credit card, debit card, cheque etc.



In the meantime, government also took necessary steps to tide over the crisis. The Department of Animal Husbandry under Agriculture Ministry directed National Dairy Development Board, Delhi Milk Scheme and all the state level dairy federation to ensure direct payment to farmers' bank accounts. The government also directed the country's biggest dairy federation Gujarat Cooperative Milk Marketing Federation, to ensure opening of bank accounts for all its 29 lakh affiliated farmers for payment towards purchase of milk by December end. Similarly, other milk cooperatives were asked to open bank accounts of all 1.6 crore dairy farmers located across the country.

Acknowledging that farmers did face cash crunch when demonetization move was announced, the government allowed farmers to buy seeds using old Rs 500 denomination notes from state-owned companies and the fertilizer companies were asked to give fertilizers on credit to farmers. The Centre had also directed National Bank for Agriculture and Rural development (NABARD) to disburse Rs 21,000 crore to cash-starved farmers, helping them sow winter crops like wheat.

The Consumer Affairs Ministry also went all out to procure pulses from farmers, and government also assured farmers to buy any quantity of pulses at Minimum Support Price (MSP). These were some of the confidence building measures that government took to bring some quick relief to the rural folk.

But a section of experts feel the impact of demonetization will have its ripple effect. Rating and research agency CRISIL in its October 2016 report had projected the upturn in rural incomes should push private consumption above 8 per cent in fiscal 2017 and higher rural income would lead to higher rural sales of durables such as television sets, electric fans, motorcycles and tractors. But now there is little hope of this happening. Because of poor agricultural growth, there was no growth in the sales of such items during 2014-15 and 2015-16.

There are also numerous reports of large number of migrant works moving back to villages from urban areas where they were engaged in the unorganized sector. It remains to be seen how soon new employment opportunities will be created in cities and towns so that they can return to work.

Conclusion:

Farmers, particularly those engaged in cultivation of vegetables, have always been vulnerable to take the hit because of market condition or good harvest. There is a need to put an adequate storage facility in place so that they

Average prices of key food items (retail prices in Rs per kg)

Food item	Nov 15, 2015	Nov 15, 2016	Dec 15, 2015	Dec 15, 2016
Potato	20	20	20	15
Onion	40	15	25	15
Tomato	50	30	20	10
Rice	28	30	30	30
Wheat	18	18	18	22
Atta	22	23.5	22	26

(Source: Consumer Affairs Ministry)

can avoid distress sale. Options should be explored how to provide some security to such farmers. At present, the Price Stabilization Fund set up by the government is only used for procurement of pulses and onion (limited quantity) at minimum assured price to create buffer stock for exigencies and also to protect the farmers from distress selling.

(The Author is a Freelance Journalist. Email: dashreporter@gmail.com)

All Transactions in Ministry of Consumer Affairs 100 per cent Cashless

Union Minister of Consumer Affairs, Food & Public Distribution, has directed the official of his ministry to achieve 100 cashless working in all its transactions within 15 days. the Minister reviewed "Cashless Working" in all transactions being made by Department of Food, Consumer Affairs and PSUs.

It is noteworthy that the food grains procurement operations of FCI are cashless. Payments are being made through cheques and RTGs. Similarly Consumer Affairs Department has procured pulses of Rs 703 crore during current Kharif season by making online payments. Bureau of Indian Standard has also done transaction of Rs 106.98 crore during current financial year and only transactions of Rs 30,000 have been made through cash. Thus, almost 99 per cent transactions in the Ministry are being made cashless, which is expected touch to 100 per cent within 15 days.

All the Ministry officials have been issued an advisory to the State Governments to promote cashless transactions at Ration Shops also by installing card readers in POS machines. Cashless transactions should be made a pre conditions in all contract works for making further payments.

WTO: IMPACT ON FOOD SECURITY IN INDIA

SURESHA. K P

India could take a leadership role in designing new trade disciplines in the WTO that takes advantage of imports and new market access opportunities for its agriculture sector in the developed world to increase its food security and the welfare of its farmers. Removing the need to defend its agriculture subsidies from WTO disciplines could also create space for India to take advantage of 21st century economic opportunities arising from international trade in areas such as services and information technology, where the future of India's economy.

India has seen an impressive economic growth in the recent years. But the country still struggles with widespread poverty and hunger. India's poor population amounts to more than 300 million people, with almost 30 per cent of India's rural population living in poverty. The good news is that poverty has been on the decline in recent years. According to official Government of India estimates, poverty has declined from 37.2 per cent in 2004-05 to 29.8 per cent in 2009-10. Rural poverty declined by 8 percentage points from 41.8 per cent to 33.8 per cent and urban poverty by 4.8 percentage points from 25.7 per cent to 21.9 per cent over the same period (World Bank 2015).

India is home to 25 per cent of the world's hungry population. An estimated 43 per cent of children under the age of five years are malnourished (WFP 2015). India remains an important global agricultural player, despite the fact that agriculture's share in the country's economy is declining. It has the world's largest area under cultivation for wheat, rice, and cotton, and is the world's largest producer of milk, pulses, and spices (World Bank 2015). Nearly three-quarters of India's households are dependent on rural incomes. Agricultural productivity in the country's semi-arid tropical region is impeded by water shortages and recurrent drought, while environmental degradation and vulnerability to weather-related disasters pose challenges to the country as a whole.

India's agriculture policies aimed at improving its food security have received increased scrutiny following the December 2014 World Trade Organization (WTO) Ministerial meeting, where India's position on this issue almost doomed the entire talks. In fact, growing use of agriculture subsidies by India and other developing countries like China are changing the dynamics of the WTO negotiations for new agriculture subsidies commitments, where the focus had previously been on developed country subsidies. India's agriculture subsidies are also very costly and are coming at the expense of addressing other pressing development needs. It has also led India to adopt a defensive stance in the WTO Doha Round, focused on protecting these subsidies. As a result, India has missed the opportunity to shape the international trading system in ways that can strengthen food security in India. **The Prime Minister** provides a key opportunity for India to rationalize its agriculture



subsidies and to shift its focus in the WTO negotiations away from protecting its farmers to realizing the benefits for food security from imports and the opportunities for its agriculture sector from reducing barriers to agriculture exports in developed markets.

Agricultural Issues on Food Security:

The key challenges that India faces in ensuring food security are that of a long – standing demand of civil society groups for a comprehensive legislative framework for ensuring food security in the form of a National Food Security Act (NFSA).

Second, food price inflation has been a cause of concern as it does not match by a commensurate increase in incomes for wage-earning net purchasers of food. Domestically too, food price inflation has posed difficulties for policy-makers.

Third, a renewed focus on corruption, leakages and inefficiencies in the implementation of food-related schemes has encouraged academic economists for a shift towards a system of cash transfers, the dominant view calling for a replacement of the Public Distribution System (PDS) as the challenges are threefold.

The first challenge is the problem of food distribution, which pertains to identifying the best way(s) to ensure food access in an equitable way.

The second can be characterized as an international challenge that will require India to defend its NFSA and its food trade policies to the international trade community, in the wake of the Ninth Ministerial Meeting of the World Trade Organization (WTO) at Bali, even as it maintains its food sovereignty.

These urgent issues present a third larger and persistent challenge of sustainable nutritional security, ensuring that Indian agriculture can provide and support in sustainable ways, diets that are both adequate in quantity and quality. This involves an effort that goes well beyond the food grains.

Challenges of Food Security in India:

The National Food Security Mission has



played a key role in augmenting production in cereals and pulses. Much of this has come from yield increases in the eastern regions in the country where the Green Revolution did not take place. At the same time, there has also been a strong and continuing trend for diversification into non-cereal and high-value commodities such as dairy, fruits and vegetables, which are higher quality diets. Investments in the agricultural sector have been especially strong after 2014-15, both public and private, with private gross capital formation accounting for an increasing share of all investment.

Despite the huge increase in production, access to food continues to be a serious issue especially in the context of extraordinarily high-inflation rates in food commodities in recent years and limited access in large parts of the country to high-quality diets. The imperative that the challenge of food security derives, from recent evidence from India and elsewhere suggests that, the income growth might not always translate fully or quickly enough to improvements in the health nutritional status of children, implying that this issue needs attention. This weak link between income growth and nutritional outcomes implied that food security in the sense defined earlier would require special attention of policy-makers and cannot be presumed to follow as a consequence of growth. This is quite apart from a parallel discourse that argues for a rights-based approach to food security so that primary responsibility rests with the state. In general,

there is broad agreement on the imperative of food security in India, but deep disagreements on how to achieve this.

Article 20 of the AoA commits countries to work towards the objective of substantial progressive reductions in support and protection in agriculture. That Article contains a commitment for the continuation of the reform process in agriculture to be initiated in 1999, taking into account trade and non-trade concerns related to the implementation of commitments under the AoA. The definition of “non-trade concerns” given in the preamble to the AoA includes food security and the need to protect the environment. No further details are provided e.g. about the definition of these terms or how these concerns are to be addressed. This subject is being increasingly debated in the context of international trade in different forum, where other concerns, inter alia, the viability of rural communities and ways of life have also been added. These attributes of agriculture are claimed to be positive externalities and public goods, jointly produced with food and fiber, and hence the argument that agriculture deserves more support and protection as additional payments to these services.

While these other functions of agriculture are clearly all desirable, for the majority of developing countries, food security is the fundamental function of agriculture. It is important to note that developing countries can pursue their food security goals within the scope of the AoA and without recourse to the broader concept of multi-functionality. In this context, it is necessary to identify those provisions of the AoA that may require strengthening in the continuation of the reform process in the sense of allowing more flexibility to developing countries to pursue food security policies.

WTO Role:

The Uruguay Round Agreement on Agriculture mentions food security as a legitimate “non-trade” concern of agricultural policy, but the agreement



focused exclusively on liberalizing trade in agricultural products.

WTO members have constantly been confirming their commitment to the objective of sustainable development. They all are convinced that the aims of upholding and safeguarding an open and non-discriminatory multilateral trading system and acting for the protection of the environment and the promotion of sustainable development can and must be mutually supportive. (Anil-2004). S&DT related to rural development and food security was also specifically identified as an objective of the agriculture negotiations in the Doha Declaration.

There are three dimensions – ecological security; livelihood security and food security are essential elements of an agriculture policy which is sustainable and equitable. Sustainable agriculture is based on sustainable use of natural resources – land, water and agricultural biodiversity (including plants and animals). The current globalization processes of agriculture through WTO threaten to undermine all three dimensions of agriculture policy. They are undermining ecological security by removing all limits on concentration of ownership of natural resources – land, water and biodiversity, and encouraging non-sustainable resource exploitation for short – term profits. The WTO agreement on agriculture combined with TRIPS agreement implies total monopoly over agriculture by a handful of global corporations,

and total vulnerability of farmers to crop failure and indebtedness. (Chandra – 2004).

Multilateral policies:

Government policy is only one influence on entitlements, and the subset described specifically as 'food security policies' represents only one part of the picture. It is, nonetheless, an important part. Entitlements identified can be promoted or protected by a wide range of government inventions. These include measures to promote food production, facilitate the operations of markets, enhance the availability and value of labour entitlements, and provide transfers and safety nets. In addition, enabling macro and sectoral policies will have an indirect effect on food security.

Multilateral trade negotiations may affect this pattern of government action in two ways :

- By introducing change to the policies (of both domestic and foreign governments) that impact directly on entitlements (for example, by altering the food prices paid by consumers or received by producers);
- By making more or less feasible some of the policies that are considered desirable to promote or protect entitlements.

The multilateral policy areas most likely to affect entitlement protection and promotion policies are those on:

- Tariffs (which could affect government revenue and in this way, impact on many policies);
- Domestic subsidies (which could alter the feasibility of policies related to production and transfer entitlements);
- Export subsidies (which could affect the feasibility of transfer and safety net policies).

In addition, multilateral rules on state trading enterprises and export regulation, as well as any new rules on process criteria, could have an impact.

The Next Agricultural Round:

All of the main sources of food security entitlement could be affected by the next agricultural

trade Round, which may:

- Introduce change to the policies (of both domestic and foreign governments) that impact on the level of entitlements
- Make more or less feasible some of the policies that are considered desirable to promote or protect entitlements. Current expectations are that the next agricultural trade Round will cover three main areas – export subsidies, market access and domestic subsidies. All three have the potential to impinge upon food security either: Directly, by establishing new rules on food security policies currently in place or recommended in vulnerable developing countries, or indirectly, by altering absolute and relative agricultural prices which will, in turn, change entitlements.

These three areas have been listed in the order in which most change is anticipated. But in terms of the likely impact on food security, the priority order is different. It is domestic subsidies, tariffs and export subsidies.

Conclusion

Addressing food security issues within the WTO – a setting that seeks to create new market access to opportunities, points to a growing consensus that international trade can enhance food security by increasing access to sources of food, providing an opportunity for India to reform its domestic agriculture subsidy scheme and by focusing on the goal of food security, India could take a leadership role in designing new trade disciplines in the WTO that takes advantage of imports and new market access opportunities for its agriculture sector in the developed world to increase its food security and the welfare of its farmers. Removing the need to defend its agriculture subsidies from WTO disciplines could also create space for India to take advantage of 21st century economic opportunities arising from international trade in areas such as services and information technology, where the future of India's economy.

(The Author is Post Doctoral Fellow, UGC, New Delhi. Email:syndsuresh@yahoo.in)

MINISTRY OF INFORMATION AND BROADCASTING OBSERVES SWACHHTA PAKHWADA

Swachhta Pakhwada is being observed by the Ministry of Information & Broadcasting in the second fortnight of January, 2017. During the cleanliness campaign, intensive drives have been launched at various levels in the Ministry Secretariat as well as its media units and other offices. An Award by the Ministry is to be given to encourage and promote cleanliness in the offices. A committee has been constituted to decide the 'Best Section' award on the basis of cleanliness, progress in recording and reviewing, implementation of e-office. All officers have been asked to ensure putting up waste paper in the Special purpose baskets. An Internal Committee in the Ministry has been formed to look after the Swachhta initiatives which pays surprise visit to take note of the cleanliness drive in the Ministry. An intensive cleanliness drive is also being carried out in the Ministry. All Sections have been asked to ensure old and unused items are not lying in the Sections and to ensure that there are no loose fit wires or cables, broken furniture, etc. and get the same repaired at the earliest. Unused and discarded materials are to be disposed off. Departmental Canteen officials have been advised to take note of the cleanliness initiatives and ensure cleanliness in the Canteen. The Ministry has also put up posters on 'Swachhata' themes at various places.

A new book gallery with modern outlook and facilities is being readied by the Publication Divisions during Swachhta Pakhwada to display its prestigious publications on a variety of subjects including those on Cleanliness. It also plans to bring out a series of books in fifteen languages on Cleanliness during the Pakhwada. These include books for children like "Aise Jungle Swachh Hua". In-situ book exhibitions in Sales Emporia and Sales Units of Yojana offices have been organised during this period with focus on Swachhta related books. The Division is also covering the cleanliness drive observed by various Central Ministries in the weekly job journal "Employment News" and monthly journal 'Kurukshetra' on regular basis.

The Directorate of Field Publicity is using interpersonal communication modes including rallies, film shows, group discussions, public meetings and photo exhibitions to communicate Swachhata messages across the country including remote and far flung rural areas through its 22 regional offices.

Indian Panorama Film Festival, held in Siri Fort Auditorium from 13th-23rd January 2017, showcased the films on Swachh Bharat also and gave wide publicity to this campaign.

The Directorate of Advertising And Visual Publicity launched Audio-visual publicity with 60 sec spots about the ill effects of Open Defecation on behalf of Ministry of Drinking Water and Sanitation. It also released Audio-Visual campaign on Swachhta Sarvekshan & Asli Tarakki on behalf of the Urban Development Ministry. The News Services Division of All India Radio organised a 9 day workshop on Swachhta starting from 17th January, 2017.

It is also providing adequate coverage to various activities of Swachhta Pakhwada in regular news bulletins and news based programmes, including Regional Languages bulletin. Doordarshan News is telecasting Swachhata initiatives by civil society and Ministries and Departments in a fixed slot of 5 minutes in its Swachhta Bulletin every day.

Song And Drama Division is utilizing live folk and traditional art forms including Drama, Composite, Dance-Drama, Musical Programme, Nukkad-Natak, Puppet Shows, Magic Shows, Mythological Recitals, Folk and Traditional Recitals etc in local dialects for greater outreach on Swachha Bharat Mission.

Indian Institute of Mass Communication is spreading the message regarding Swachhta Abhiyaan including through Community Radio of IIMC. The interviews and discussions with environmental experts on related issues are being broadcast.

Photo Division is providing extensive photo coverages of all the initiatives under Swachhta Pakhwada undertaken by various Ministries based on the information provided by Ministries.



SWACHHTA PAKHWADA UPDATE

Successful Swachhta Campaign by Directorate General Defence Estates

Defence Minister Shri Manohar Parrikar appreciated the efforts of Directorate General Defence Estates (DGDE) in translating the concept of Swachh Bharat campaign into reality. On successful conclusion of Swachhta Pakhwada in the cantonments under the aegis of DGDE, the Minister said during the *pakhwada*, DGDE has managed to dispose of nearly 10,800 MT of garbage through Sewage Treatment Plants (STPs) from their cantonments which is itself an achievement. On this occasion, the Minister also released a booklet on the 'Swachh Bharat Abhiyan in cantonments' during the *pakhwada*.

Additional DGDE gave a presentation on the activities of its 62 notified cantonments in the successful implementation of the Swachhta Pakhwada, which was observed from 1st to 15th December, 2016 all over India. He said that the cantonment boards were now trying to introduce Solid Waste Management System in their areas on the lines of the system being operated in Goa. The boards have also introduced modern bio-digester toilets developed by DRDO and all efforts are on to declare all cantonments as 'Open Defecation Free' as per guidelines of the Ministry of Urban Development.

He further said that after checking, it was confirmed that no insanitary latrines were found in any cantonment and 171 toilets were attended to during the *pakhwada*. He also mentioned that approximately 762 kms of drains and sewers were cleaned, intensive cleaning of roads and trimming of roadside trees and management of trenching ground were executed during the exercise. To create more awareness about the Swachhta campaign, DGDE had decided that such activities will be carried out periodically by cantonment boards under the motto 'Swachh Chhavni Swasth Chhavni', to sustain the momentum of the Swachh Bharat Campaign. The message of the campaign will also be spread through a Mini Marathon and a drawing/painting competition, which will be organised by all cantonments on 15th and 22nd January, 2017 as part of the Republic Day celebrations.

Kurukshetra

FORTHCOMING ISSUE

March 2017 : xyz

EMPOWERING WOMEN: A WAY TO FOOD SECURITY

Vishnupriya Pandey

Securing women's human rights is a key strategy in assuring food security for all. Women are involved in a variety of agricultural operations like crops, livestock and fish farming. They often have unique perspectives & understanding of local biodiversity. Also for dietary diversity, women have a decisive role. Poor households headed by women often succeed in providing more nutritional food for their children than those headed by men. There is a strong correlation between a higher level of gender equality and lower level of child mortality.

Poverty and hunger are directly related to each other and that is the reason why both go hand in hand. Hunger is the immediate and the most damaging outcome of poverty. Since the time of colonial rule, a significant proportion of population, in India and other a third world countries, has always been trapped in vicious cycle of poverty. The governments of various countries realized the importance of food security of the masses at the global level way back in 1996 in the World Food Summit (WFS) held in Rome and established firm goals to reduce global hunger by half till 2015. In 2000, during the UN Millennium Summit, 189 countries signed the Millennium Declaration having eight Goals. The first and the foremost Millennium Development Goal was to eradicate extreme hunger and poverty throughout the world.

The status of India in terms of food security has certainly improved over the years but still not satisfactory. The Constitution of India did not recognize the Right to Food as the fundamental right. However, the Right to Food is inherent to a life with dignity guaranteed by Article 21. The Article entitles Protection of life and personal liberty. It says, "No person shall be deprived of his life or personal liberty except according to procedure established by law." Further, Article 39(a) of the Constitution, under the Directive Principles, considered as fundamental in the governance of the country, requires the State to direct

its policy towards securing that the citizens, men and women equally, have the right to an adequate means to livelihood. Moreover, Article 47, also one of the Directive Principles of State Policy, directs the State to raise the level of nutrition and the standard of living of its people and to improve public health. A series of judicial interventions and interpretations have strengthened the Right of Food in India. In September 2013, Government of India notified National Food Security Act, 2013 or Right to Food Act with the objective to provide for food and nutritional security in human life cycle approach, by ensuring access to adequate quantity of quality food at affordable prices to people to live a life with dignity.

Despite of all the landmark decisions in this regard by the governments, the aspect of intra-household gender disparity against women and girl child in terms of food security has always been ignored. In rural India, women and girl children



are often found to be relatively more malnourished within a household. The orthodox social norms, constrained roles to domestic work, limited access to resources, inadequate opportunities of employment are some of the factors behind food insecurity of females in India. This issue remains disguised in most of the studies as our evaluation system provides household level information regarding food availability and hunger and not at the individual level, which provides incomplete picture of food security. Therefore, engendering the issue of food security is necessary to achieve the Sustainable Development Goals related to eradication of extreme hunger and poverty of the entire population. By facing challenges against food security of women, the goal of women empowerment can be fulfilled and different modes of women empowerment may ensure better access of women to food and nutrition. Hence, this will work vice versa.



United Nations Special Report on Right to Food³ says that empowering women & achieving gender equality are the most cost effective ways to ensure food security. According to the report, focusing the lens of social & economic development on women and girls is the most inexpensive and effective tool in the fight against hunger and malnutrition. The UN Food and Agriculture Organization and the Asian Development Bank conducted their study in Asia Pacific region. The study claimed that women's education alone resulted in a 43 per cent reduction in hunger from 1970 to 1995, while women living longer led to an additional 12 per cent decline in hunger levels. There is a strong link between food security, good nutrition and gender. A gender approach to food security can enable shifts in gender power relations and assure that all people, regardless of their gender, can be benefitted and empowered by development policies and practices to improve food security and nutrition. This article gives an overview of why & how to consider the gender aspects in both short-term humanitarian assistance and long term development cooperation that address food security.

People's overall access to food depends to a great extent on the work of rural women. Women provide, on an average, 43 per cent of the agricultural labor force in the developing countries. Hence, keeping this aspect in mind, securing women's human rights is a key strategy in assuring food security for all. Women are involved in a variety of agricultural operations like crops, livestock and fish farming. They often have unique perspectives & understanding of local biodiversity. Also for dietary diversity, women have a decisive role. Poor households headed by women often succeed in providing more nutritional food for their children than those headed by men. There is a strong correlation between a higher level of gender equality and lower level of child mortality. Cultural traditions and social structures often mean that women are more affected by hunger and poverty than men even though women, and in particular expectant and nursing mothers, often need special or increased intake of food.

As rural women often spend a large amount of their time on additional household obligations, they have less time to spend on food production or other income opportunities. Women also have less access to markets than men which hamper their opportunities to earn an income even further, and thus their possibilities to be able to buy food. With fewer assets and heavier burdens, women are more vulnerable to shocks and less well positioned to respond.

Social and economic inequalities between men and women result in higher levels of poverty

and food insecurity for women. If women farmers had the same access to resources as men have, the agricultural yield could have increased by 20 to 30 per cent. This could have raised total agricultural output in developing countries by 2.5 per cent, which could have reduced the number of hungry people in the world by 12 to 17 per cent.

Another emerging challenge in food security and nutrition is to enhance women resilience to climate change; e.g. by diversified production as well as strengthened capacity to respond to challenges related to climate change. Disasters, especially droughts or floods, are the most common causes of food shortages in the world. In humanitarian contexts, discrimination of women and girls may be reinforced, and the occurrence of domestic violence increase during times of food scarcity. Because of women's specific roles and experiences in food production and preparation, it is crucial to include them in emergency-related food security planning and decision making as potential change agents and decision makers, rather than as the "victims" they often are portrayed to be.

Gender dynamics within households must be taken into account in situations of displacement when food aid and other relief items are distributed. This includes men's and women's ability to access and equitably distribute relief items within households. Humanitarian interventions that radically alter gender roles, for example, by giving women greater control over water and food distribution, may impact power dynamics negatively and can also lead to increased gender-based violence.

Food security and agricultural programmes can strengthen human rights and be more effective if they also tackle the constraints around women's access to resources. This is done through addressing the issue of unequal gender roles, responsibilities and workloads. To acknowledge women's role in food security, contributions are needed at all levels in a variety of result areas.

The Government of India has taken several steps in recent past to promote woman's participation in food security. The National Food Security Act has special provisions for woman empowerment. Chapter VI of the act redefines "head of household". It says, the eldest woman



who is not less than eighteen years of age, in every eligible household, shall be head of the household for the purpose of issue of ration cards. It further adds, where a household at any time does not have a woman or a woman of eighteen years of age or above, but has a female member below the age of eighteen years, then, the eldest male member of the household shall be the head of the household for the purpose of issue of ration card and the female member, on attaining the age of eighteen years, shall become the head of the household for such ration cards in place of such male member. These provisions have long term implications for women empowerment.

In his address to the nation on the eve of New Year, Prime Minister announced a nationwide scheme for financial assistance to pregnant women. The scheme named "Maternity Benefit Programme" for pregnant and lactating mothers has been formulated by the Ministry of Women and Child Development in accordance with the provisions of Section 4(b) of National Food Security Act and is a conditional cash transfer scheme. It provides cash incentives to pregnant and lactating women (i) for the wage loss so that the woman can take adequate rest before and after delivery; (ii) to improve her health and nutrition during the period of pregnancy and lactation; and (iii) to breastfeed the child during the first six months of the birth, which is very vital for the development of the child.

However, a lot more remains to be done by the Government on both policy as well as implementation fronts. The following recommendations can be taken into account to ensure woman empowerment with respect to food security:

- Gender Sensitization is interlinked with Gender Empowerment. This can lead to empowerment of each individual by creating an environment where men and women can develop their full potential.
- Mother and child health and nutrition programmes can break gender barriers in childcare by including men and boys in nutrition and health education activities.
- Reforming the laws on tenure, land distribution, land reform, including marital and inheritance laws and most importantly the implementation, of these laws can ensure woman empowerment and can lead to food security.
- Supporting education for women, access to land and property rights can be helpful in food security
- Advocating the creation of mechanisms to monitor the enforcement of policies, targets and laws on women's access and rights to land.
- Promoting women's access and rights to land in customary law e.g. by supporting women's participation in bodies responsible for interpreting customary law.
- Supporting awareness-raising and access to information among women regarding land rights, including information about complaints mechanisms, Women's equal participation in labour markets.
- Bringing legislation that guarantees equitable employment conditions that protect workers in both formal and informal employment.
- Extending the coverage of social protection to all categories of rural workers and ensuring that they incorporate women's special needs.
- Supporting policies and investments in labour-saving technologies and supporting public investments that make it easier for women to participate in the labour market
- Intensifying the provision of better-quality education and vocational training for women to ensure food security for all.

(The author is Research Scholar in Dept of Social Work, JMI, New Delhi. Email: saurabhanand.iis@gmail.com)

Assistance to Farmers for Crop Loss

Government of India is implementing yield based Pradhan Mantri Fasal Bima Yojana (PMFBY) which has replaced the National Agricultural Insurance Scheme (NAIS) & Modified National Agricultural Insurance Scheme (MNAIS), from Kharif 2016 season. Comprehensive risk insurance is provided under PMFBY to cover yield loss due to non-preventable risks viz. natural fire and lightning; Storm, Hailstorm, Cyclone, Typhoon, Tempest, Hurricane, Tornado etc.; Flood, Inundation and Landslide; Drought, Dry Spells; Pests/ Diseases etc. On the other hand, Weather Based Crop Insurance Scheme (WBCIS) provides insurance protection to the farmers against adverse weather incidence, such as deficit and excess rainfall, high or low temperature, humidity etc. Which adversely impact the crop production.

Crop insurance is a financial tool to insure the crop losses on payment of admissible premium to the insurance company. Further, under the crop insurance schemes, claims are paid to those farmers who insure their crops and pay premium under any of the notified crop/area, notified by the concerned State Govt. Admissible claims are worked out and paid as per the provisions of the respective schemes and not on any other basis like by the representation from the State Govt., team sent by the Government of India, declaration of drought/flood etc. by the State/Central Govt.

Financial assistance is also provided to farmers as per the guidelines on the items and norms of assistance from State Disaster Response Fund (SDRF)/ National Disaster Response Fund (NDRF) of Ministry of Home Affairs, where assistance is admissible for crop loss of 33 per cent and above due to notified natural calamities viz. Avalanches, Cyclone, Cloud burst, Drought, Earthquake/Tsunami, Fire, Flood, Hailstorm, Landslides, Pest attack, Frost and Cold wave. The norms of relief under SDRF/NDRF are Rs. 6800/- per ha for rainfed areas, Rs.13500/-per ha for assured irrigated areas and Rs.18000/-per ha for all types of perennial crops. Assistance under SDRF/NDRF provided is for immediate relief and not by way of compensation for the loss suffered.

THREE BOOKS ON RASHTRAPATI BHAWAN RELEASED

Three Books on Rashtrapati Bhawan were released at a function held at Rashtrapati Bhawan on December 11, 2016, by the President of India, Shri Pranab Mukherjee, Vice President of India and the Prime Minister, respectively. The three books have been published by the Publications Division of the Ministry of Information and Broadcasting, Government of India.



Rashtrapati Bhavan: From Raj to Swaraj:

This book, written for children, by Subhadra Sengupta, tells the story of Rashtrapati Bhavan – from its construction as Government House, a symbol of grandeur of the British Empire to its final destiny as the house of the President of India. It takes the readers through the times, introducing the concept of empire, narrating a brief history of the British Empire and telling the tale of how Delhi became the capital of British India, setting thereby the scene for the construction of Rashtrapati Bhavan. The reader is taken to the massive building, through the red sandstone and marble corridors past the busts of former presidents; through its echoing halls and its elegant sitting rooms. The reader is introduced to the flower-lined pathways of the magnificent Mughal Gardens and to its walls and pillars, trees and bushes, carvings and paintings, which have seen nearly a century of history being made and what they will tell us is a fascinating and exciting tale.

Indradhanush Volume I :

Indra Dhanush, the present as also the earlier volume published by DPD in July 2014, embodies the concept of India's cultural heritage being presented before the head of state in his role, albeit informal, as the patron of arts and culture. The present volume is a compendium of music, dance, theatre and cinematic presentations organized at Rashtrapati Bhavan from mid-2014 to September 2016. During this period, a cultural kaleidoscope of extraordinary artistes of

India have been presented at the Rashtrapati Bhavan. The stalwarts featured in this volume include Pandit Chhannulal Mishra, Pandit Ulhas Kashalkar, Ustad Abdul Rashid Khan, Begum Parveen Sultana, Pandit Jasraj and Pandits Rajan and Sajan Mishra to represent different generations and different styles of the Hindustani classical music repertoire. Other genres of music included are Madan Gopal Singh and the Chaar Yaar ensemble (Sufi music) and the Ao Naga Choir (Christmas carols and songs). All the maestros and artistes of ensembles covered in this volume *Indra Dhanush II* considered their performances at the Rashtrapati Bhavan an unforgettable landmark event in their lives. *Indra Dhanush II*, offers readers—who have not had the privilege of attending the performances—a feel of each performance and its memorable moments so that the reader, like the audience, can share the unique experience.

Life at Rashtrapati Bhavan:

The volume titled *Life at Rashtrapati Bhavan*, the final volume of the prestigious Multi-volume documentation project, is an attempt to record the human history of the residents living in the President's Estate. This documents the period under the colonial state right up to the current presidency and brings in the perspectives of past and present residents of the estate, the permanent staff of the household and secretariat as well as the officials who have served under different presidencies. This volume brings together the lives of countless individuals who have been associated with this place since its inception. The chapters help explain the transition of the President's House as the reins of power shifted from the British Empire to a modern republic. The early presidents who occupied office in independent India made sincere attempts to Indianise the colonial building.

The sources come from archival records as well as the accounts of the inhabitants of the presidential home and estate today. The book also documents the significance of the multiple contributions made by President Pranab Mukherjee in transforming the premises of the Rashtrapati Bhavan into the 'smart' city that it is today and the impact of such changes on the lives of the people there. It also documents the commitment and collaboration of the presidential team to usher in this transformation.

UNIQUE APPROACH TO BENEFICIARY PAYMENT IN SITAMARHI

In a bid to make Sitamarhi in Bihar open defecation free (ODF), the district administration has come up with an innovative step to hasten toilet construction and usage in all their villages. Incentives are provided to all beneficiaries of the village at one go rather than one household at a time, once all families have toilets that are being used.

The move has shown a considerable success, as so far, two Gram Panchayats have already been declared ODF following verification. “We gave one Cheque to the bank with a list of beneficiaries and the bank makes electronic transfers (by Real Time Gross Settlement-RTGS) to individual accounts,” explained District Magistrate. The group cheque is of course symbolic.



“The basic concept in this approach is community- led total sanitation, and behaviour change of the community is our prime concern”, he added. Having led this initiative in a mission mode, the DM says that people are coming forward to make their village ODF.

In this regard, the SBM team has been organizing camps in every village where people are made aware of the benefits of good sanitation practices. Thereafter, a timeline is set to complete construction and verification. Needless to say, people are assured of the government incentive of Rs 12,000 per household if they build and use toilets.

“We have earned the trust of the public in the system. They are now aware that if they take the initiative to build and use sanitation facilities, they would get their incentive,” he said. Best of all, the society is working together ‘as a single unit’ as there is peer pressure when a few families have toilets and others do not. Further, those who are financially stronger are helping those who are financially weaker. They have understood that even if one family does not build toilets, their incentive will be withheld.

Fortunately, 70-80 per cent of the people are capable with resources to build their toilets. It is for the remaining 20 per cent, for whom, this incentive mechanism is particularly favourable.

Sitamarhi, which is said to be the birthplace of goddess Sita, is home to 273 Gram Panchayats of which, just 37 GPs are ODF. Of the 3 sub-divisions, Belsand has recently been declared ODF. The local administration has set a target of making this district ODF by October 2, 2017, which is backward in terms of literacy and other development indicators.

According to the DM, community mobilization is the key to the success of the SBM programme. Going by the reactions of the community, he said they were very happy that the administration is visiting every village and offering them incentives. Along the way, there have been several incidents, which have kept the team motivated, of individuals and elderly, who have sold jewellery or animals to finance the construction of toilets.

Publications Division Brings Out Book on Historical Evolution of Courts in India

Publications Division has recently brought out a book on the evolution of the Indian Judicial System. Released on the occasion of Constitution Day by Chief Justice of India Justice T.S. Thakur, in the presence of Shri Ravi Shankar Prasad, Minister for Law & Justice and Electronics & Information Technology the book has been designed as a Coffee Table Book which has several photographs of archival value.

'Courts of India: Past to Present', written by eminent judges, advocates and legal luminaries among others under the expert guidance of an Editorial Board constituted by the Supreme Court is an attempt to trace the historical evolution of courts in India. The book identifies the diverse court systems prevalent in India, maps its historical origins and contextualizes the present system of courts. The book provides an overview of the history of laws and legal institutions in India. Courts of India seeks to introduce the Indian judicial system to citizens, in as lucid a style as possible.

Publications Division is a repository of books on subjects of national importance and India's rich cultural heritage. The mandate is to disseminate information through the production and sale of quality books at affordable prices.



"Courts of India – Past to Present" being released by Chief Justice of India Justice T.S. Thakur on the occasion of constitution Day. Shri Ravi Shankar Prasad, Minister for Law & Justice and Electronics & Information Technology was also present on the occasion.

