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STRATEGIC GAPS IN PROVISION OF UNIVERSAL NUTRITION SECURITY: INDIAN PERSPECTIVE

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Government of India's commitment is reflected in its constitutional provision in raising the level of nutrition of its people. This can be achieved by ensuring nutrition security which goes beyond food security by considering access to essential nutrients not just calorie. Nutrition security involves physical, economical and social access to balanced diet, clean drinking water, sanitation and primary health care for every child, women and men. It provides all citizens an opportunity for healthy and productive life. Universal access to nutrition security implies absence of geographical, financial, organizational, socio cultural and gender based barriers for provision of nutrition security. Since the inception of planning process in the country Government of India initiated several measures for food security as well as for enhancing purchasing power. Green, White and Blue revolutions made perceptible change in the provision of food security at national level. However, it did not percolate to the households and level of chronic food insecurity is still high. In spite of all these efforts under nutrition is a serious problem in the country. Intra familial distribution of food and prevailing dietary practices may exert negative effect on nutrition security of community, region or country. Hoarding and speculation in food grains, leading to high prices, have serious implications for food security even in time of plenty. The prevailing situation calls for critical scrutiny of policies, strategies, programmes and socio cultural barriers for nutrition security. Thus identifying strategic gaps can play significant role in revisiting various approaches to ensure nutrition security.

Keywords: Food security, Purchasing power, Strategic gaps, Universal nutrition security

CONCEPTUAL FRAMEWORK

Food has been recognised as an immediate basic need of human being. Food is needed for growth, development and to lead an active, productive and healthy life. Throughout the history of civilization food has acted as catalyst for societal transformation. Realizing the importance of food security the civilization developed and the development of agriculture marked as significant development in human history. It brought changes in hunter gather tribes; they started domesticating plant and animal to satisfy their hunger. Conceptually the term food security exists when all people, at all times, have physical, social and economic access to sufficient, safe and nutritious food to meet their

dietary needs and food preferences for an active and healthy life (FAO, 2009). The cornerstones of food security are availability of food, access to food, utilization of food (Kapersma, 2007; and World Bank, 2001) and ensuring food security outcomes at an individual level. In addition to this Food and Agriculture Organization (FAO) adds another pillar viz., the stability of the first three dimensions of food security over time which refers to the ability to obtain food over time. Raising the nutritional status of the population has been a major concern of Government of India. This can be achieved by ensuring nutrition security which goes beyond food security by considering access to essential nutrients; macro and micro nutrients, water and sanitation related

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issues not just calories. Therefore there is need for paradigm shift from food security to nutrition security. The term nutrition security implies physical, economic and social access to balanced diet, clean drinking water, safe environment, sanitation and primary health care for every child, women and men (INSA, 2009). Nutrition security should be universal in nature. Universal access is a concept, which implies the absence of geographic, financial, organizational, and socio-cultural and gender based barriers to nutrition security. Conceptually universal access to food implies everyone have an equal opportunity to obtain healthy and nutritious food regardless of their income, race, age, pre existing conditions, gender, wealth or social class, ethnicity background and physical disability. Nutrition security incorporates the idea that access to food includes not just physical availability and affordability but also requires that individuals do not face social barrier in feeding themselves in terms of quality and quantity.

HISTORICAL PERSPECTIVE

In spite of great agricultural country India had to suffer "Food Scarcity" which preceded by malnutrition, starvation, epidemic and increased mortality. Before 1947 Indian history was replete with famines and drought. At least 20 million lives were lost in India in about 20 famines that had stuck since 1850. The first great famine in India (Bengal Famine) began in 1770 is estimated to have taken around 10 million lives. Other notable famines included the great famine of 1876-78 in which 6.1 million to 10.3 million people died and the famine of 1899-90 in which 1.25 to 10 million people died (Mishra and Khanam, 2010). These famines continued until independence due to misplaced colonial policies which aimed to derive maximum economic gain at the cost of human suffering, farmers were encouraged to grow crops that could be exported. The boom in export accompanied by rising prices made farmers shift to cash crops like cotton, indigo, poppy and sugarcane, the area for food grain subsequently shrank. In other words efforts to improve agriculture in colonial India were directly to the needs of British industries.

Soon after the fulfilment of freedom struggle India literally survived on food aid. At the time of Independence the country faced two major nutritional problems. One was the threat of famine and the resultant acute starvation due to low agricultural production and the lack of an appropriate food distribution system. The other was chronic energy deficiency. In 1951 India got ad hoc assistance of 2 million tonnes food grain to tide over crisis arising from severe

drought in several parts of the country. It was the first major food security on a significant scale after independence. The year 1966-67 was reported as critical year of drought which drove India "Ship to mouth" existence; that time India imported 11 million tonnes of food grains which made country as the biggest food importer of the century (Mishra and Khanam, 2010; and Swaminathan and Ayar, 2012). The history of hunger and famine in the post independence era could be failure of the government efforts to boost agricultural production.

INDIAN SCENARIO

Under nutrition is a consequence of multiplicity of factors but food security lies at the very heart of it. At present India is witnessing nutrition transition; on the one hand problems of under nutrition are still prevailing on the other hand obesity, hypertension, diabetes mellitus are emerging as potential threats. Pervasive micro nutrient deficiencies are hidden agenda in ensuring food security. As per NFHS III 45% children < 3 years are stunted and 40% are under weight; 28% men and 33% women are victim of chronic energy deficiency (BMI<18.5 kg/m²). Anaemia is present in 79% children (6-35 months) and in 56% women (IIPS, 2006).

Attempts to assess food and nutrition security faced the challenge of having valid measurement tools and frequency of assessments for valid results. However some exploratory studies on this aspect have been conducted in India. Prevalence of food security is reported to be 44% in West Bengal (Chakraborty, 2004). According to a study conducted in urban Tamil Nadu on house hold food security, food insecurity with hunger was present in 61.5% (52.9-70.0%) households. Food insecurity without hunger prevailed in 13.1% (7.2-19%); prevalence of any form of food insecurity was 74.6% (67%-82.2%) (Gopichandran *et al.*, 2010). Household food insecurity has been to the extent 51% in North India (Agrawal *et al.*, 2009). A study conducted in tribal households of a district of West Bengal only 47.2% households were food secure; as much as 29.6% and 23.3% households were low and very low food secure, respectively (Mukhopadhyay *et al.*, 2010). According to a study conducted in rural Varanasi as much as 25.7% household members slept at night hungry because there was not enough food to eat while 54.3% households had very low food security and in 10.83% households all family members suffered from sleeping hungry at night (Khanam, 2014).

INITIATIVES FOR FOOD SECURITY IN INDIA

India has taken the problem of malnutrition seriously since independence—more so than many other countries—and has developed appropriate policies and major programmes (viz., Land reform, varietal improvement in crops, extension activity for preservation and storage of food, targeted public distribution system, etc.) to address it (Mishra, 2007) and ensuring food security as well as enhancing purchasing power, e.g., IRDP, DWCRA, CITRA, and MNAREGA. These are described below in following sub heads:

Landmark Food Revolutions in India: By the 1960's India was desperate for a breakthrough. The nation's self-confidence was at ebb. Political uncertainty loomed. Food crises were endemic. Marginal increases were only through bringing more land area under cultivation and not through increases in productivity. Food Security was nil. India was just about meeting its deficit with imports. Clearly a quantum leap was needed. There were three major food revolutions as given in Table 1.

Land Reforms in India: Land to tillers and growth with equity were the promises made during freedom struggle. After independence land reform policies in India aimed at restructuring agrarian relation to achieve an egalitarian social structure; elimination of exploitation in land relations. Land reforms were accorded highest significance of as tool of poverty alleviation (Janasatyagraha, 2012).

Agricultural Initiatives: Keeping severity of drought and its adverse impact on agriculture production Government of India has taken several initiatives to ameliorate the situation of food security. In this regard Government conceptualized several schemes for the benefits of agrarian community. (Basu, 2010) as given in Table 2. The Indian Council of Agricultural Research continues to lead the country in the area of Agricultural research, education and extension through its wide network of 98 Research Institutes and 578 Krishi Vigyan Kendras across the country. In addition it supports 45 State Agricultural Universities (Mishra and Khanam, 2010).

Food Storage and Wastage Minimization Efforts at Macro and Micro Level: In order to minimise wastage of food grain at micro level extension education activities have been carried out to equip necessary skills for storage of food. Producers have been also orientated about preservation of various seasonal food items. Equipments have been also provided to the farmers for storage of food. Traders also built godowns to store food items. However, at macro level Food Corporation of India has established network of godowns to keep buffer stocks for disasters and famines. Realizing the fact that wastages of milk and milk products and vegetables are of a serious nature, Government of India has made provisions for cold storage facilities though of limited outreach.

Table 1: Food Revolutions in India

Revolution	Year of Introduction	Objective	Achievements	Fallacies
Green	1960	High yield crops	Improved Country's food security	Widening gap between large marginal and small scale farmers.
				Environmental disaster
White	1965	Wide varieties of milk production	Increased per capita of milk production largest self-sustainable rural employment generator.	Decimation of Indian breeds of cow
				Qualitative deficiencies in products.
Blue	1970	Improved aquaculture	Provide nutrition security and Self employment	Productions from the near-shores water have reached threshold level.

Table 2: Agricultural Initiatives in India

Year	Programme	Objective
1964-65	Intensive agriculture Area Programme	To develop special harvest in agriculture
1966-67	High Yield variety programme	To increase the productivity of grain by adopting varieties of inputs of crops
1966-67	Minimum support prize	To save the farmers from depleting profile
2000-01	Macro management of Agriculture scheme	To maximize agriculture productivity on large scale.
2005-06	National horticulture mission	Enhanced horticulture production to improve nutritional security
2007	Rastriya Krishi Vikas Yojna	Achieve 4% growth in agriculture through development of agriculture and its allied sectors during XI th plan.
2011-12	Rain fed area development programme	To ensure the agriculture growth in rain fed area focuses on integrated farming system for enhancing productivity.

Income Generation and Anti Poverty Measures: Poverty in India is a historical reality. Both poverty and hunger are correlated. Many hungry people are trapped in severe poverty; they grow to live with it by shrinking their stomachs to survive. They may not be dying of hunger but they live their whole lives at the edge of hunger. Realizing poverty as the root cause of many evils Government of India started several anti-poverty and employment generation programmes (Mishra, 2012). Currently Mahatma Gandhi National rural employment guarantee Scheme (2006) has great promise for rural India.

Social Security Measures: Article 41 of the Constitution states that the State should within the limits of its economic capacity make effective provision for securing the right to work, to education and to public assistance in case of unemployment, old age, sickness and disablement (Planning Commission, 2001). Notable security measures are Employee's State Insurance Scheme and National old age Pension Scheme (2011-12).

Initiatives for Food Distribution: While accelerating food production in the country, Government of India realised the fact that food security cannot be ensured without improving food distribution. In this endeavour Public Distribution System (PDS) has initiated on large scale. In fact it has existed before independence and was initially intended to protect consumers from food shortages and producers from

price fluctuations (Tarozzi, 2002). It was originally started at a few urban centres, but was extended in the 1980s as a measure for food security and poverty alleviation (DFPD, 2010). Wheat, rice, sugar and kerosene are provided to a target of 330 million people estimated to be nutritionally at risk through 499,00 'fair price shops'. Central and state government jointly manage PDS with the centre being responsible for procurement, storage, transportation and allocation. The states are responsible for the distribution through fair price shops; as well as for identification of families Below Poverty Line (BPL), issuing cards, supervision and monitoring. The government re-launched PDS as the Targeted Public Distribution Systems (TPDS) in 1997 as its name suggests targets the population in to above and below poverty line categories and aims to reach a target of 60 million families below poverty lines with the BPL price for grain set at 50% of the economic cost (Kattumiri, 2011). Several measures including public distribution system exist to provide food security to the people by ensuring availability of food at affordable prices (Table 3).

Special Programmes for Vulnerable Groups: Protecting the health and nutrition of the vulnerable section of the population had been major concern of Government of India. To translate this in to action Applied Nutrition Programme (ANP), Mid Day Meal Programme and Special Feeding Programmes were initiated. Food production and

Table 3: Schemes Related to Public Distribution Systems in India

Name of Scheme	Year of Introduction	Coverage Target Group	Latest Volume	Issue Price (Rs per KG)	
PDS	Up to 1992	Universal		Wheat: 2.34, Rice: 2.89	
RPDS	1992	Backward blocks	20 kg of food grain	Wheat: 2.80, Rice: 3.77	
TPDS	1997	Poor and non poor	35 kg of food grain	BPL Wheat: 2.5 Rice: 3.5	APL Wheat: 4.5 Rice: 7.0
AA Y	2000	Poorest of the poor	35 kg of food grain	Wheat: 2, Rice: 3	
APS	2000	Indigent senior citizen	10 kg of food grain	Free	

consumption at household level, training and nutrition education were the major components of ANP. Mid day meal programme aimed at providing a diet to primary school children ensuring one third of energy requirement and half of the protein requirement. In order to address the problem of micro nutrient deficiencies Government of India initiated National Goitre Control Programme, National Vitamin A Prophylaxis Programme and National Anaemia Control Programme. For holistic development of children Integrated Child Development of Scheme (ICDS), initiated in 1975 on pilot basis, has been universalised throughout the country. This programme aimed at provisions of health checkup, immunization, referred services, food supplementation, health and nutrition education to children (0-3 years) along with these services children belonging to the age group 3-6 years are being provided non formal education. The scope of the ICDS programme has been extended to adolescent girls, pregnant women and lactating women as well as women of reproductive age group (15-49 years).

Initiatives Related to Safe Water Supply and Sanitation: In India provisions of safe water supply and basic sanitation have been accorded high priority under National Rural Health Mission as Total Sanitation Campaign (TSC).

National Food Security Act (NFSA): Government of India has enacted National Food Security Act in 2013. The NFSA is a historic initiative for ensuring food security to the people. It gives right to the people to receive adequate quantity of food grains at affordable prices. The NFSA envisions a comprehensive legislative framework for protecting an individual's right to food, furthering the vision expressed in the constitution of India. It is conceived as a system of interventions following a life

cycle approach, whereby at every stage of an individual's life a safety net would be provided by the state to ensure food security. This law aims to provide subsidised food grain to approximately two thirds of India's 1.2 billion people. Under the provision of the bill, beneficiaries are to be able to purchase 5 kg per eligible person per month (Narayanan, 2015).

SECTORAL ACHIEVEMENTS

Achievements of different initiatives are discussed under following sub heads:

Achievements Through Food Revolutions: Per-capita net availability of food grains per day was 429.8, 447.5 and 442.5 gram in 6th, 7th and 8th decades; corresponding values during 1981-90, 1991-2000 and 2001-2010 were 446.2, 475.5 and 454.2, respectively (Jadhav, 2013). Currently India accounts for about 12% wheat, 21% paddy, 25% pulses, 10% fruits, 22% sugarcane, and 16% milk of global production. This is being achieved from 2.3% global land, 4.2% of water and little over 11% of arable land having only 50% potential for irrigation to support 18% of world's population (Ayyappan, 2010). It also produces a significant amount of meat and poultry.

Land Reforms: The process of land reform has been very slow in India. *Zamindari* system was not abolished in a manner it should have been done. With the onset of globalization problems of landlessness and exodus of rural population increased due to use of agriculture land for industries, roads and other developmental initiatives. Many marginalised people from rural areas were forced to be land less workers in the cities slums areas and 43% of the people of India are still absolutely and near land less (Janasatyagraha, 2012).

Quality Issues in Agriculture: Till date the focus was on meeting the quantity in agriculture and requirements of macronutrients. However, if we take into the consideration nutrition security then dietary diversification and consumption of green leafy vegetables and protective foods becomes of paramount importance. In India considerable proportion of population is vegetarian and pulses serve important source of protein. Unfortunately pulse production in India has declined and due to hike in the price of pulses its consumption by vulnerable section of population is likely to decline.

Poverty Reduction in India: There has been perceptible decline in the extent of poverty in India (Table 4). However, considerable proportion of people Above Poverty Line (APL) is very close to poverty line and any adverse situation may bring them Below Poverty Line (BPL). The adversities may arise because of crop failure, rising market prices, out of pocket expenditure on health care and financial insecurity further jeopardized by lack of job opportunity in some seasons. Behavioural disorders such as drug addiction, alcoholism, particularly in urban slums, hoarding and speculation in food grain leading to high prices have serious implications for food security even in time of plenty.

Food Distribution Mechanisms: The outreach of food distribution mechanisms including PDS has been far from being satisfactory. According to reports from West Bengal and Tamil Nadu nearly two third beneficiaries have utilized the services of the benefits of PDS (Mukhopadhyay, 2010; and Gopichandran, 2010).

Achievements of Special Inputs for Vulnerable Groups: Special inputs for vulnerable groups have not been commensurate with the expected outcomes.

Achievements in Provision of Safe Water Supply and Sanitation: Although 83% of the habitations in rural areas have been covered with safe water supply there are growing concerns of falling in water table and water quality. As per Census 2011, 46.9% of the population in the country had latrines within/ attached to their houses.

CONSTRAINTS IN PROVISION OF UNIVERSAL NUTRITION SECURITY

The main constraints in provision of universal nutrition security broadly segregate in to three major domains viz., capacity building of existing human resource, material and money issues. In spite of the fact that National Food Security Act 2013 (Table 5) (NFSA, 2013) converts into legal entitlements for existing food security programmes of the Government of India, there is still need of conceptual understanding of nutrition security by providers, stakeholders as well as beneficiaries of the programme. The term nutrition security has been used interchangeably with food security; in fact it is only a part of nutrition security. There is compelling need to operationalise the concept of nutrition security which implies physical, economical, and social access to balance diet, clean drinking water, safe environment and health care because ensuring food security alone will aid in reducing hunger but will not eliminate malnutrition or impact nutrition status largely if other components such as micro nutrients, safe drinking water, disease management and health care are also not envisaged (Upadhyay, 2011). Although having best infrastructure of programme with improving nutrition as its main component is planned in the country but due to lack of coherent monitoring systems or tracking systems along with the absence of intersectoral corporation it is not properly implemented or translated. Furthermore constraints in this context contributed by poor functioning, faulty food Public Distribution System (PDS) such as the issues of identification of poor by the states

Table 4: Estimates of Poverty Ratio in India

Year	Poverty Ratio	
	Rural	Urban
2003-2004	64.1	53.1
2004-2005	61.2	49.6
2005-2006	59.2	46.7
2006-2007	56.2	44.8
2007-2008	53.8	41.2
2008-2009	49.6	37.8
2009-2010	46.5	32.7
2010-2011	43.2	29.3
2011-2012	41.5	26.7
2012-2013	39.6	18.8
2013-2014	25.7	13.7

Source: Veena and Shipla (2015)

Table 5: Strategic Gaps and Possible Solutions

Issues	Strategic Gaps	Possible Solutions
Conceptual issue	Lack of conceptual understanding of nutrition security.	Addressing issues of micronutrient deficiencies, safe water supply, basic sanitation and improved access to health services.
		Special attention has to be paid on small and medium towns which have poor access to safe drinking water and basic sanitation.
	Elected urban local bodies should be encouraged to involve local commodities in promoting hygiene and sanitation.	
	Non acceptance of Food security as basic human right	The core of the food justice movement is the belief that what is lacking is not food but the political will to fairly distribute food regardless of the recipients to pay.
Food production	Technical innovations in agriculture and varietal improvement programmes not up to the mark.	Scientific advancement should be mobilized for enhancing the horizon of productivity without ecological harms.
	Lack of blending of best in traditional knowledge and technology with frontier technologies.	Synergizing best traditional knowledge with frontier technologies.
		Potentialities of urban agriculture should be seriously explored
	In adequate land reform to provide secure access to land for more people and provision of low cost finance to help small farmers.	Legislative approach for land reforms and provision of microfinance.
	R & D in agricultural sciences and technology: not adequately focused.	Translational issues pertaining to agricultural science be adequately addressed.
Gaps in mitigating climatic change	While all attempts should be made to avoid climatic changes, varietal improvement programme should bring out strain capable of withstanding vagaries of climatic changes.	
Organization	High food wastages more so for perishable items.	Expanding storage facility and provision of cold storage facilities for perishable items.
		Indigenous food preservation practices should be promoted in rural and urban areas.
	Lack of efficient mechanisms for procurement for PDS, milk and milk products and fruits and vegetables.	Cooperative movement initiatives be in vogue.
	Systems inadequacies and lack of efficient governance in PDS.	Streamlining governance mechanisms, correct identification of beneficiaries and system reforms with proper implantation frame work.
		Introduction of computerised records, biometrics and smart cards are and be developed for enabling monitoring and evaluation.
e-Public Distribution monitoring system (e-PDMS) should be launched for enhancing transparency, efficiency and accountability.		
	Broaden the food basket by including nutritious millets, legumes and tubers. In addition to basic staples, other nutritious foods should be provided through PDS.	

Table 5 (Cont.)

Geographical issues	Special plans for vulnerable population in terms of geographical inaccessibility, climatic adversities and natural calamities	Advance contingency plan should be in vogue.
Financial	Inadequate awareness and utilization about existing income generation activities and social safety nets	Strengthening Information Education and Communication (IEC) efforts.
	Poor quality and quantity of employment particularly in urban areas.	Enabling expansion of productive and remunerative employment.
		Special assistance to the numerous small and tiny enterprises in the urban economy
		Enhance the incomes of self employed and thereby their access to food
		Enhance both the quality and quantity of wage paid employment.
		Ensure that the workers in the unorganised sector and those in informal employment in the formal sector are provided decent wages and working conditions as well as a modicum of social security.
		Skill development, both for the self employed and those seeking or already in wage employment.
		Urban Employment Guarantee Act should be urgently enacted.
Rigorous implementation of ongoing income generation and antipoverty programmes in India.		
Lack of macroeconomic policies impinging urban areas	Instituting macroeconomic policy frame work and economic reforms and inclusive urban development.	
Programme related issues	Inadequate attention to ongoing nutrition related programmes viz. National Programme of Nutritional Support to Primary Education Integrated Child Development Scheme and Programmes directed for micronutrient deficiencies.	Efficient monitoring mechanisms be instituted for midterm corrections.
	Inefficient and inadequate public health care system particularly in smaller towns and municipalities.	Special focus on the smaller towns and municipalities in the National Urban Health Mission.
Community participation	Lack of involvement of elected urban local bodies in design and implementation of food and nutrition programmes.	Technical and financial support be extended to them in this regard.
Capacity building	Lack of adequate nutrition related information.	A Nutrition Literacy Movement should be mobilized.
		Horticultural remedy for every nutritional malady be promoted.
	Lack of empowerment of women	Empowerment of women through education, employment and equity are prerequisite for eradication of poverty and hunger

Table 5 (Cont.)

Governance	Lack of efficient mechanism to minimise wide gap between wholesale and retail prices.	Consumer cooperatives should supplement fair price shop.
	Immense potential of national food security bill: not fully utilized	Potential support systems and educational approaches are needed
Socio cultural and gender issues	Improper Intra familial distribution of food and prevailing adverse dietary practices.	Community based nutrition education programmes be initiated to remove socio cultural barriers and reverses parental paradox.

is not fool proof. A large number of poor and needy persons are left out, people who are the right candidates for deserving the subsidy are excluded on the basis of non ownership of Below Poverty Line (BPL) status; often inaccurate classification Above Poverty Line (APL) and Below Poverty Line (BPL) categories had resulted in a big decline in the take off the food and due to this a lot of bogus cards have been issued (Athreya, 2011). Diversions of food grains by Fair Price Shop (FPS) owners and middle man was estimated to be around 54% in 2004-05, declining to 41% in 2009-10, but still disturbingly high (Narayanan, 2015), selling of the food grains in the open market, due to lack of transparency in PDS people don't get entitled amount of food grains from the fair price shop as well as an adult needs 14 kg of food grain (FSA, 2014) while NFAS provides only 5 kg per person to priority households which leads to marketing gimmick, many time good quality food grains are replaced with poor quality cheap food grains, PDS covers only few food grains like wheat and rice, it does not fulfil the requirement of complete nutrition due to uneven distribution of food generations, procurement and distribution. In fact nutrition security cannot be ensured without strong political will and optimal financial outlays.

CONCLUSION

Nutrition security should be conceptualized as an integral part of the development process and this should be considered as a basic human right. It helps to create a more positive attitude not just to structural and technological changes but also the changes of the globalization and to its potential benefits in terms of greater efficiency and higher productivity. Considerable progress in provision of food security has taken place both at state and central level. However several strategic gaps are hindering provision of universal nutrition security. Unless corrective measures are instituted for the overcoming these gaps nutrition security will remain a distant goal.

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