



World food security: The way ahead

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ABSTRACT : The world today produces 17 per cent more calories per person than it did 30 years ago, despite a 70 per cent increase in population. This is enough to provide everyone in the world with at least 2,720 kilocalories (kcal) per day (FAO 2010) Food and Agricultural Organization. And yet, some regions in Africa continue to face protracted food crisis. The cost of alleviating world hunger is negligible compared to the trillions of dollars spent on financial institutions and to stimulate economies in the industrialized world. Although for the first time in 15 years the total number of hungry people in the world has dropped about 10 per cent in 2010, 925 million is still a very grim figure. Agriculture and rural economy – both crucial sectors in times of crisis – are denied sufficient aid flows. Food assistance and financial aids towards agricultural and rural development will go hand in hand in addressing the problem of food insecurity. In the face of constraints like climate change and energy insufficiency, the international community will have to work collectively in the common interest of bringing on another Green Revolution and making sure that its benefit trickles down to the poorest of the poor.

KEY WORDS : Food security, Hunger, Climate change, World food programme, National food security mission, National food security bill

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INTRODUCTION

The world is producing enough food for its people, the problem is access to the food. In 2008, number of undernourished people worldwide increased to nearly one billion - 963 million compared to 923 million in 2007 (FAO). The number is likely to increase in the face of rising food prices and global financial downturn aftereffects. The poorest and most vulnerable people in the developing world are at the receiving end of this problem mostly due to fluctuations in prices, under nourishment etc. as many of them spend sixty per cent or more of their income on food. Ninety eight per cent of the world's hunger population lives in developing countries, sixty five per cent of whom live in only seven countries: India, China, the democratic Republic of Congo, Bangladesh, Indonesia,

: Pakistan and Ethiopia (FAO, 2010). There is such a huge
: variation in the distribution of food across the globe that people
: in some regions have to deal with acute hunger.

: As per FAO definition 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. Thus,
: hurdles in the path of attaining global food security are manifold.
: First section of this paper looks into the challenges that need
: to be addressed in order to overcome the problem of hunger.
: The second section analyses ongoing global efforts in this
: direction, while the later part discusses the measures India is
: taking to curb hunger and food insufficiency. Some gaps are
: then presented in the conclusion.

The challenges ahead:

: Importance of achieving food security for all can be
: gauged from the unanimous adoption of declaration pledging
: renewed commitment to eradicate hunger from the earth
: sustainably and at the earliest date in FAO world summit on
: food security in 2009. The problem of world food crisis needs
: to be addressed properly which faces multi-faceted challenges
: (Fig 1).

: The challenges in the way of producing enough food

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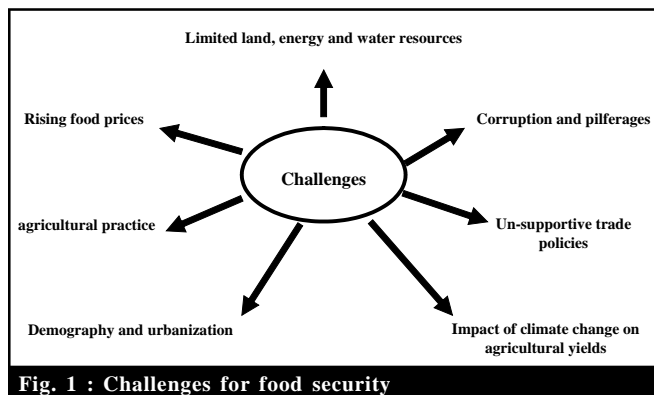
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and making it accessible to the world's hungry are:

Demography and urbanization:

As the population of the world moves toward 9.2 billion by 2050, the demand for food also rises sharply. By 2030 worldwide demand for food will increase by 50 per cent, and for meat by 85 per cent. Plus, there is an increase in the number of people concentrated in urban areas. According to FAO, the exploding population also means that while one acre of land was enough to feed two people in 1960, by 2025 the same area will be needed to feed five people. Growing awareness about nutrients and balanced diet among the urban population is creating more demand not only for cereals but also for meat and dairy products, which means more animal feed crops are going to be needed.

Limited land, energy and water resources:

Population explosion coupled with industrialization of urbanization has resulted in diversification of land usage pattern. Land is increasingly also being used for timber, biofuels, forest conservation, carbon sequestration, and expansion of cities. A large area of land being used for agriculture is no more at its fertile best. A UN report published in October, 2010, reported that the combination of environmental degradation, urbanization and large-scale land acquisitions by foreign investors form an explosive cocktail and that the pressure on land suitable for agriculture is increasing at an unprecedented rate. A lot of energy resources too go into food production. In addition to land and energy security, there is a dire need to conserve and secure our water resources. With growing population and rising per capita consumption of water resulting in water table going down, agriculture is going to be particularly affected since it accounts for 70 per cent of global fresh-water usage.

Corruption and pilferage:

These two factors directly affect the scale and quality of support government provides to the rural poor. Especially in developing countries like India, Indonesia, Pakistan, etc.,

subsidy programmes on food grains, rural employment schemes, grassroot-level development programmes and poverty alleviation programmes are particularly vulnerable to corruption.

Rising food prices:

Recent declines in food and fuel prices in international markets have not yet filtered down to many local markets. Prices are still high and could start rising again - in some of the poorest parts of the world. The mechanics of pricing - fertilizer prices, fuel and electricity costs, transport costs - all affect food prices in many ways.

Impact of climate change on agricultural yields:

The impact of climate change on agricultural production in developing countries and on the volatility of markets is now well documented. The Intergovernmental Panel on Climate Change (IPCC) has estimated that in Southern Africa, yields from rain-fed agriculture could be reduced up to 50 per cent between 2000 and 2020 and that of arid and semi-arid areas could increase by 60-90 million hectares before 2080. At that time, 600 million additional people could be at risk of hunger as a direct result of climate change.

Old agricultural practices:

A remarkable shift in agricultural practices has occurred over the past century in response to new technologies, but there are still many parts of the world where farmers are yet to adopt newer technologies on lands they cultivate. Agricultural practices such as irrigation, crop rotation, fertilizers and pesticides were developed long ago. New technologies have given rise to innovations like conservation tillage, a farming process which helps prevent land loss to erosion, water pollution and enhances carbon sequestration

Un-supportive trade policies:

Probably the most important contribution of the WTO to food security is to keep farm and non-farm trade barriers falling, to encourage the secure flow of international investments, and to improve access to low-cost food markets by the world's poor

Ongoing global effort towards food security:

Global efforts to increase food production and provide accessibility of food to the hungry need to be strengthened for meeting out the food demand of over one billion hunger people. While the objective to increase world food production is vital, it is equally important to work upon world food production and distribution systems, so as to make them more sustainable and equitable. Keeping these points in view, the following efforts in the direction of ensuring food security at global level are noteworthy :

FAO:

The Food and Agriculture Organization of the United Nations leads international efforts to defeat hunger. Apart from its many initiatives, like the World Food Summit in Rome (16-18 November, 2009), the Comprehensive Framework for Action, the Global Information and Early Warning and Information System (GIEWS), that monitors world's food supply/demand), the promotion of Integrated Pest Management for rice production in Asia, the Codex/Alimentarius Commission (to develop food standards and guidelines), the FAOSTAT (online multi-lingual database), an Investment Centre for more investment in agriculture, the Goodwill Ambassadors Programme (to attract public and media attention towards world hunger), and an online campaign against hunger, called The 1 billion hungry Project, the FAO has undertaken the following significant initiatives to address the issue of world food security

SPFS (Special programme for food security):

Special Programme for Food Security is FAO's initiative taken in 1994 to halve the number of hungry people in the world by 2015. Its projects running in over 100 countries conduct programmes to alleviate hunger and poverty at the national as well as regional level

IPPC (International plant protection convention):

The international plant protection convention is a treaty created by FAO in 1952. It maintains a list of plant pests, tracks pest outbreaks, and coordinates technical assistance between over 170 member nations to prevent the spread of pests and plant diseases

CFS (Committee on world food security):

The committee on world food security is a United Nations establishment that reviews and follows up on policies concerning world food security, covering both food production as well as physical and economic access to food. It was formed upon recommendations of the 1974 World Food Conference, which was called after the food crisis of the 1970s. In the committee's 35th and 36th session held in October, 2009, in Rome, 123 governmental delegates, 46 international NGOs, and 11 international agencies agreed on a wide-ranging reform that aims to make CFS the foremost inclusive international and intergovernmental platform dealing with food security and nutrition and to be a central component in the evolving Global Partnership for Agriculture, Food Security and Nutrition. The CFS also discussed the achievements of four countries – Bangladesh, Rwanda, Haiti and Jordan – in improving food security, and addressed the situation of countries in protracted crisis – such as the 22 countries identified in the recently released State of Food Insecurity (SOFI) in the World report of the FAO. These countries were recommended to adopt a comprehensive approach to food security linking the

emergency response to support to sustainable livelihoods in a longer-term perspective, particularly through better coordinated multi-stakeholder participation in the development and implementation of country led, comprehensive plans of action.

World food programme (WFP):

The world food programme, a United Nations agency that is voluntarily funded, has been in operation since 1962 and is the world's largest humanitarian organization addressing hunger worldwide. It works for five objectives: (1) Save lives and protect livelihoods in emergencies; (2) Prepare for emergencies; (3) Restore and rebuild lives after emergencies; (4) Reduce chronic hunger and under nutrition everywhere; and (5) Strengthen the capacity of countries to reduce hunger. The WFP works to eradicate hunger and malnutrition with the ultimate goal of eliminating the need for food aid itself. Its fast information technology and telecommunications emergency and support team (FITTEST) of the IT division provides IT, telecommunications and electricity infrastructure for the humanitarian aid operations worldwide. In 2009, WFP provided food for 101.8 million people in 75 countries.

International fund for agricultural development (IFAD):

It is a specialized agency of the United Nations established as an international financial institution in 1977 post the 1974 World Food Conference. It works to eradicate rural poverty in developing countries. Seventy-five per cent of the world's poor live in rural areas and depend on agriculture, and IFAD works with governments to develop and finance projects that aim to help rural poor out of poverty. IFAD's Rural Poverty Report 2011 says that, during the past decade, the overall rate of extreme poverty in rural areas of developing countries has dropped from 48 per cent to 34 per cent, lead by dramatic gains in East Asia. But it also points to the persistence of poverty in rural areas of Sub-Saharan Africa and South Asia

CGIAR:

The consultative group on international agricultural research (CGIAR) is a global partnership that unites organizations engaged in research for sustainable development with the funders of this work. The funders include developing and industrialized country governments, foundations, and international and regional organizations. The work they support is carried out by 15 members of the Consortium of International Agricultural Research Centers, in close collaboration with hundreds of partner organizations, including national and regional research institutes, civil society organizations, academia, and the private sector.

Global crop diversity trust (GCDDT):

It is an independent international organization which works to ensure the conservation and availability of crop

diversity for food security worldwide. It was formed through a partnership between UN's FAO and the consultative group on international agricultural research (CGIAR).

Global seed vault:

The Svalbard Global Seed Vault, a secure seed bank located in Norway, preserves duplicates of seeds of a wide variety of plants from around the globe in an underground facility. The idea behind establishing a global seed bank was to ensure that the genetic diversity of the world's food crops is preserved for future generations. The establishment of the Global Seed Vault was facilitated by the International Treaty on Plant Genetic Resources for Food and Agriculture, a global legal framework for conserving and accessing crop diversity, adopted by FAO member countries. It was officially opened on February 26, 2008, to serve as the ultimate safety net for one of the world's most important natural resources

Genetically modified (GM) foods:

Many scientists believe that in order to meet the increasing demand for food and to adapt to climate change, a second green revolution with increased use of GM crops is needed. Although it has been argued by some that the risks associated with the intake of GM foods outweigh their benefits. While GM foods are widely adopted in the US, they have remained under speculation in many other countries. Zambia, in 2002, banned GM Maize from UN's World Food Programme. Venezuela imposed a ban on GM seeds in 2004. Hungary has stopped importing and planting GM Maize seeds since 2005. Despite the controversy, future advances in GM foods are diverse.

How is India dealing with it?:

In the Global Hunger Index released in October, 2010, by the International Food Policy Research Institute, India was ranked 67, way below neighbouring countries like China and Pakistan. Although India achieved self-sufficiency in food grains in the 1970s and has sustained it since, it is home to 42 per cent of the world's underweight children (GHI, 2010). Since the beginning of planning, food security has been a major developmental objective in India. The concern now is towards an approach to percolate food grains down to the household level. The production of crops depends on not just variations in monsoons and other climatic fluctuations, but also on the availability of various inputs like fertilizers, credit support, irrigation, etc. Some of the initiatives taken by the government of India to improve agricultural output and food distribution system are

Accelerated irrigation benefit programme (AIBP):

The accelerated irrigation benefit programme (AIBP) was launched during 1996 – 1997 to give loan assistance to the

States to help them complete some of the incomplete major/medium irrigation projects which were at an advanced stage of completion and to create additional irrigation potential in the country. Initial budget allocation for AIBP for the year 2008-09 was of 4,300 crores. Under PM's stimulus package, an additional allocation of 2300 crores was provided for AIBP. Thus, total allocation was of 6,600 crores. Against this allocation, the actual expenditure during the year was about 7,598 crores. For the year 2009-10, budget allocation was 8,000 crore.

Kisan credit cards (KCC):

Started in 1998 – 99, by the government of India, Reserve Bank of India (RBI), and National Bank for Agricultural and Rural Development (NABARD), Kisan credit card enables farmers to get timely cash credit without the credit screening process. Repayment can be rescheduled if there is a bad crop season, and extensions are offered for up to 4 years. The card is valid for 3 years and subject to annual renewals. The KCC scheme covers short-term/medium-term credit and long term credit, and a reasonable component of consumption credit within the overall limit sanctioned to the borrowers.

National agricultural insurance scheme (NAIS):

The National Agricultural Insurance Scheme was introduced in the *Rabi* season of 1999-2000 with the following aims (1) To provide insurance coverage and financial support to the farmers in the event of failure of any of the notified crop as a result of natural calamities, pests and diseases; (2) To encourage the farmers to adopt progressive farming practices, high value in-puts and higher technology in agriculture; and (3) To help stabilize farm incomes, particularly in disaster years. The scheme is available to all farmers – loanee and non-loanee – irrespective of the size of their holding. Under the scheme, Small and marginal farmers are provided subsidy of 50% of premium charged from them.

Rehabilitation package for distressed farmers:

The government of India in 2006 – 07 approved a rehabilitation package of rupees 16978.69 crore for 31 suicide-prone districts in the states of Andhra Pradesh, Maharashtra, Karnataka, and Kerala. The rehabilitation package aims at establishing a sustainable and viable farming and livelihood support system through debt relief to farmers, improved supply of institutional credit, a crop-centric approach to agriculture, assured irrigation facilities, watershed management, better extension and farming support services, and subsidiary income opportunities through horticulture, livestock, dairying, fisheries, etc.

National food security mission (NFSM):

National food security mission (NFSM), a centrally sponsored scheme, was launched from 2007 – 08, after it was

proposed in the 53rd meeting of the National Development Council (NDC) that a food security mission comprising rice, wheat, and pulses be initiated. NFSM has three components: rice, wheat, and pulses, and the mission aims at increasing the production of rice by 10 million tonnes, wheat by 8 million tonnes, and pulses by 2 million tonnes by the end of the Eleventh Plan (2011 – 12). 136 districts of 14 states are covered under NFSM – Rice; 141 districts of 9 states are covered under NFSM-Wheat; and 171 districts of 14 states are covered under NFSM – Pulses. 20 million hectares of rice, 13 million hectares of wheat and 4.5 million hectares of pulses are included in these districts that roughly constitute 50% of cropped area for wheat and rice. For pulses, an additional 20% cropped area would be created.

National Rural Employment Guarantee Act (NREGA), 2005:

The National Rural Employment Guarantee Act, 2005, better known as NREGA, is perhaps the first of its kind in the world when the government has adopted a revolutionary step by providing an economic safety net to 2/3 of the country's population or 71.9 per cent India's rural poor. The act aims at enhancing the livelihood security of people in rural areas by guaranteeing hundred days of wage-employment in a financial year to a rural household whose adult members volunteer to do unskilled manual work. NREGA can be well taken as an innovative policy to boost (1) the rural economy, (2) stabilize agricultural production, and (3) reduce the population pressure on urban areas for employment and thereby transform the geography of poverty. The scheme, by providing legal guarantee to work, marks a paradigm shift from all earlier and existing wage employment programs because it is an Act and not just a scheme.

Rashtriya Krishi Vikas Yojana (RKVY), 2007:

Sponsored by both central and state governments, Rashtriya Krishi Vikas Yojana (RKVY) is a scheme launched in 2007 with the aim to achieve 4 per cent annual growth in the agricultural sector during the Eleventh Five Year Plan. RKVY ensures a holistic development of agriculture and allied sectors by focusing on the following main objectives :

- To provide incentive to the states so as to increase public investment in Agriculture and allied sectors.
- To provide flexibility and autonomy to states in the process of planning and executing agriculture and allied sector schemes.
- To ensure the preparation of agriculture plans for the districts and the states based on agro-climatic conditions, availability of technology and natural resources.
- To ensure that the local needs/crops/ priorities are better reflected in the agricultural plans of the states.
- To achieve the goal of reducing the yield gaps in important crops, through focussed interventions.

- To maximize returns to the farmers in agriculture and allied sectors.
- To bring about quantifiable changes in the production and productivity of various components of agriculture and allied sectors by addressing them in a holistic manner

National policy for farmers, 2007:

The Government had constituted National Commission on Farmers in 2004 under the chairmanship of Dr. M.S. Swaminathan. The terms of reference of the commission included, inter alia, methods of enhancing productivity, profitability and sustainability of the major farming systems in different agro-climatic regions of the country and suggesting measures to attract and retain educated youth in farming and working out a comprehensive medium-term strategy for food and nutrition security. The National policy for farmers was formulated in 2007 on the basis of the recommendations made by the commission in its final report and the suggestions received from various central ministries and departments of state governments. The policy aims to improve economic viability of farming by substantially increasing the net income of farmers, protect and improve land, water, bio-diversity and genetic resources, develop support services, provide appropriate price, trade policy mechanisms, and suitable risk management measures, and develop a social security system for farmers, among other goals.

National food security bill, 2011:

The first part of the draft food bill was presented on 20th January, 2011, by the National Advisory Council (NAC). The proposed act seeks to provide legal food entitlements to 75 per cent households: providing 35 kg food grains – rice, wheat, millets – at 3, 2 and 1 per kg, respectively, for 'priority group'. This group covers 46 per cent households in rural areas and 28 per cent in urban areas. Besides, it also recommends 20 kg food grains at half the price of the minimum support price for the 'General category', which covers 44 per cent households in rural areas and 22 per cent in urban areas.

Conclusion:

Investments in large scale have been side-lined for many years by both developed and developing countries in the agricultural sector. The proportion of foreign aid that goes to agriculture has disastrously declined, from 17 per cent in 1980 to 3 per cent in 2006. Though there is increasing realization about the need for prioritizing the agricultural sector, a lot more needs to be done.

The physical and chemical characteristics of the soil, the quantity, periodicity and distribution of rainfall and/or irrigation facilities, and the range of temperature, are factors important for a healthy crop life. These factors, which vary from country to country and even within a country from region to region, are

very critical to successful agriculture. Taking all such relevant factors together, several agro-climatic zones, each characterized by a set of soil, rainfall (or irrigation facilities), and temperature parameters, are identified in countries with diverse geographical features. A new, improved, agricultural model that is not just input-intensive, but knowledge-intensive, needs to be built. Farmers around the globe must have access to information about the agro-climatic zone they are cultivating, and the kind of inputs that best suit farming in the region. Farmers, especially in the developing countries, need access to five key resources: assets (land, machinery, etc.), markets, credit, knowledge, and risk management tools. Summing up, more focus is required on the following counts:

- Increasing spending on agriculture
- Ensuring that the schemes and acts are being implemented properly
- Rectifying the public distribution system
- Strengthening and streamlining
- Agricultural extension services
- Spending more on R&D
- Focusing on small & marginal holder farming
- Integrating natural biological and ecological

approaches like soil regeneration, predation, and parasitism into food production

In addition, the trade policies must be revised and new policies formulated in the light of rural upliftment and common good. All global and country-level efforts need to be synchronized to meet the common goal.

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