An alarming 805 million people go hungry and malnutrition affects one in two people.

Poor diet, disease, impaired absorption and increased micronutrient needs during certain life stages such as pregnancy, lactation, and infancy, are among the causes of hidden hunger, which may ‘invisibly’ affect the health and development of a population.

Some 165 million children under the age of five suffer from stunting, while two billion people are deficient in one or more essential micronutrients, such as vitamin A, zinc and iron. Around 19 million pregnant women are affected with vitamin A deficiency. This shortage in essential vitamins and minerals can have long-term, irreversible health effects and socioeconomic consequences that can erode a person’s well-being and development. People’s productivity and country economies are affected as well.

Achieving food and nutrition security requires addressing aspects of availability, access, affordability, absorbability and adequacy.

Technological breakthroughs and addressing cross-sectoral issues have increased agricultural productivity and availability and accessibility of food in India. Efforts to address undernutrition have begun to bear fruit.

The journey offers lessons for others grappling with issues for which India has found some answers through policies, programmes, institutional frameworks and legislation for a Right to Food.

VEHICLES FOR KNOWLEDGE TRANSFER

<table>
<thead>
<tr>
<th>Government</th>
<th>Non-government</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Indian Technical and Cooperation Programme (ITEC)</td>
<td>- Civil society organisations and their networks</td>
</tr>
<tr>
<td>- South Asian Association for Regional Cooperation (SAARC)</td>
<td>- Chambers of Commerce and Industry (Confederation of</td>
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<tr>
<td>- African Union</td>
<td>Indian Industry and Federation of Indian Chambers</td>
</tr>
<tr>
<td>- Bay of Bengal Initiative for Multi-sectoral Technical and</td>
<td>of Commerce and Industry)</td>
</tr>
<tr>
<td>- Economic Cooperation (BIMSTEC)</td>
<td>- Indo African Chambers of Commerce and Industry</td>
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<tr>
<td>- New Partnership for Africa’s Development (NEPAD)</td>
<td>- AGRA (Alliance for a Green Revolution in Africa)</td>
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<td></td>
<td>- FARA (Forum for Agricultural Research in Africa)</td>
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<tr>
<td></td>
<td>- Afro-Asian Rural Development Organisation</td>
</tr>
</tbody>
</table>

1: This paper is based on scoping studies on (a) food and nutrition security and the (b) food energy and water nexus supported under the KPP
THE GLOBAL HUNGER CHALLENGE

By 2050, the world population is expected to reach 9.1 billion. World food production will need to rise by 70 percent, and food production in the developing world will need to double. This will require 30 per cent more water and 50 per cent more energy. The pressure on resources will be further stressed through climate change acting as a stress multiplier. Already, an alarming 805 million people go hungry and malnutrition affects one in two people.

Gender and Hunger
Inadequate access to food and nutrition by women has serious inter-generational health implications, thus affecting their own well-being and that of their off-spring. Anemic women often give birth to low birth weight children and subsequent stunting. In Western Africa and Middle Africa, respectively 50 per cent and 47 per cent of the women in the reproductive age are anemic. The figure for South Asia is 46 per cent. These are the highest figures in the world.

PROGRESS, YET MILES TO GO

According to the Global Hunger Index (GHI) Report released by the IFPRI in Nov 2014, the state of hunger in developing countries has improved since 1990, falling by 39 per cent.

From the 1990 GHI to the 2014 GHI,

- 26 countries reduced their scores by 50 per cent or more. Angola, Bangladesh, Cambodia, Chad, Ghana, Malawi, Niger, Rwanda, Thailand, and Vietnam saw the biggest improvements in scores.

However,

- Levels of hunger are ‘extremely alarming’ or ‘alarming’ in 16 countries, with Burundi and Eritrea both classified as ‘extremely alarming.’

- Most of the countries with ‘alarming’ GHI scores are in Africa south of the Sahara. Unlike many other countries south of the Sahara, where hunger has been decreasing, Swaziland is an exception. It suffered the biggest increase in a GHI score between the 1990 GHI and the 2014 GHI.

- India is no longer in the category with ‘alarming’ hunger and has moved to ‘serious.’
FOOD AND NUTRITION SECURITY FRAMEWORK

The framework below addresses various components to enable adequate, affordable and accessible food and nutrition that can be absorbed. This framework could be useful for developing countries interested in addressing food and nutrition security.

RESONATING WITH INDIA

Some of the fastest growing economies are in Africa, which has also led to poverty reduction. However, as important growth is, according to the UNDP Africa Human Development Report 2012, this growth has not brought with it the commensurate food security for a large population still grappling with hunger and hidden hunger.

Since 2000, Africa has experienced several episodes of acute food insecurity with immense loss of livelihoods and lives, in the Sahel region or the Horn of Africa for example.

Drought, crop failure and a lack of food often trigger these crises, but other factors such as uneven access to food also play a role. The silent crises of malnutrition also plague the region.

Around half a century ago, the green revolution in India through the introduction of scientific and technological breakthroughs helped conquer famine. Further interventions helped reduce hunger. Some of the multi-dimensional approaches that India took to achieve food security can help prepare the roadmap for developing countries.
Several developing countries are in the position today that India was some decades ago and knowledge sharing on the appropriate policy, programme, institutional and financial interventions could help these countries to leapfrog. For instance, on the nutrition front, India has been able to:

- Reduce the number of stunted children – those who are too short for their age – under five year of age by 9.1 percentage points in the last eight years.
- Dramatically increase the number of infants under six months of age who are exclusively breastfed from 46.4 per cent in 2005-06 to 71.6 per cent in 2013-14.
- Reduce wasting of children under five by 5 percentage points to 15 per cent.
- There is 31% decline in the under nutrition of women from the year 1975-9 to 2004-5.

This improvement has been possible through government roll-out and expansion of several programmes that directly target food production and causes of under nutrition. The appointment of Commissioners to monitor the delivery of food-based programmes by the Supreme Court has also helped.

Indirect factors to lessen hunger, such as the Mahatma Gandhi National Rural Employment Guarantee act (MGNREGA) and reforms in the public distribution system that distributes food to the poor have contributed as well (See Table 1).

### Table 1: India’s Approach to Addressing Food and Nutrition Security

<table>
<thead>
<tr>
<th>Component</th>
<th>Approach</th>
</tr>
</thead>
<tbody>
<tr>
<td>Availability of food</td>
<td>Availability of water for irrigation, soil and water conservation measures, improved seeds, use of IT, agriculture TV shows, extension system through Krishi Vigyan Kendras and farmers’ gatherings, innovation, civil society models, predicting resource requirements to meet food demand, access to loans and credit, agricultural information and monitoring systems</td>
</tr>
<tr>
<td>Accessibility</td>
<td>Procurement and public distribution system, local food production for local consumption</td>
</tr>
<tr>
<td>Affordability or provisioning</td>
<td>Generating employment through MGNREGA, National Food Security Act, Mid-day Meal Scheme, Integrated Child Development Services</td>
</tr>
<tr>
<td>Absorption</td>
<td>Programmes for safe drinking water and sanitation, launch of the National Rural Health Mission</td>
</tr>
<tr>
<td>Adequacy (nutrition security)</td>
<td>Infant and young child feeding (IYCF) Community based programmes to address under nutrition in states Prevention and management of Severe Acute Malnutrition (SAM) programmes Food fortification and universal salt iodisation Launch of national and state level nutrition rehabilitation centres to address acute malnutrition</td>
</tr>
</tbody>
</table>
SNAPSHOT OF INTERVENTIONS

Some of the interventions are directly related to food and nutrition while the others have an indirect impact on affordability, accessibility, absorption and adequacy.

Direct Impact

**Right to Food:** Constitutional right that provides for cheap food grain for poor households, school meals to all school children in government schools, universal infant feeding and near universal maternity entitlements. Food commissioners have been appointed to monitor enactment.

**Public Distribution System (PDS):** This programme provides food and non-food items to the poor at subsidized prices.

**Integrated Child Development Scheme (ICDS):** Aims at providing services to pre-school children to ensure proper growth and development of children in rural, tribal and slum areas.

**Mid-day meal (MDM):** Largest government-supported school feeding programme reaching out to children in schools and education guarantee centres across the country, with the purpose of improving the nutritional status of school going children by providing hot cooked and nutritious food. In 2013-14, 145 million children benefitted from hot cooked nutrition food across 1.16 million schools.

**Infant and Young Child Feeding (IYCF) Practices:** For promoting early breastfeeding with the involvement of civil society organisations and pediatric associations.

**Management of Severe Acute Malnutrition (SAM):** Through referral of cases to Nutrition Rehabilitation Centres and a protocol for the treatment of SAM cases. There are 800 plus such centres in the country, but evaluations indicate that parents – especially mothers – are unwilling to stay at the Centres for the required 10-15 days since they lose out on their daily wages and incentive may be required.

**Food Fortification and Universal Salt Iodisation:** Fortification of staple foods such as oils, wheat flour, rice, and dairy products. Iodisation of edible salt is mandatory by law. Flour fortified with iron and folic acid is supplied through the PDS. Fortification of rice with micronutrients and oil with Vitamin A is being experimented in some states.

Indirect impact

**The Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA):** A right that ensures 100 days of employment to the unemployed. This programme allows for the creation of natural assets and helps address availability and affordability aspects.

**National Rural Health Mission (NRHM):** Addresses the health needs of the population by establishing a fully functional, community owned, decentralised health delivery system with inter-sectoral convergence at all levels to ensure simultaneous action on the multiple health determinants such as drinking water, sanitation, education, nutrition an social and gender equality. This Mission helps address access and absorption aspects.

**National Rural Livelihood Mission (NRLM):** A Central government poverty alleviation programme focused on promoting self-employment and organization of rural poor into self-help groups. This programme helps address affordability and access issues.

**National Rural Drinking Water Programme (NRDWP):** Offers technical and financial support to state governments to provide adequate and safe drinking water in rural areas. This programme helps address absorption issues.

**Swachh Bharat Abhiyan (SBA):** Offers technical and financial support to state governments to address sanitation issues through constructing and using toilets, inculcating handwashing practices and for solid and liquid waste management. This programme helps address absorption issues.
COUNTRIES (IN GREEN) WHICH COULD LEARN FROM INDIA

REFERENCES

- http://climate.org/topics/agriculture.html

KPP is a South-South cooperation programme promoting knowledge sharing in the areas of Food Security, Resource Scarcity and Climate Change; Health and Disease Control; Trade and Investment; and Women and Girls. KPP is funded by the Government of UK’s Department for International Development (DFID) and managed by a consortium led by IPE Global Private Limited under its Knowledge Initiative. The main objective of KPP is ‘Gathering and uptake of evidence on issues central to India’s national development that have potential for replication in LICs and impact on global poverty’.

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