



## Food and Nutrition Security Community



# Solution Exchange for the Food and Nutrition Security Community E-Discussion Summary

## *Mainstreaming Food and Nutrition Security*

Compiled by [Gopi N Ghosh](#), Resource Person, [N P Y Raman](#), Consultant and [T N Anuradha](#), Research Associate

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From [Maarten Immink](#), Food and Agriculture Organization of the United Nations (FAO), Rome

Posted 10 June 2008

Under the FAO-Netherlands Partnership Programme (FNPP) at FAO Headquarters, support has been provided to a number of countries to mainstream food and nutrition security in overarching policy platforms, such as poverty reduction strategies, as well as in national sector policies. Food security is typically viewed as a major concern of the agricultural sector, with a focus on improving productivity in food production, and increasing the efficiency of food marketing. Nutrition is seen as a concern of the health sector. Much less often adequate attention is given to a twin-track approach to food security, which also emphasises food access and social protection measures (food and non-food safety nets) as important components of food security strategies. Poverty-food and nutrition security linkages are often overlooked in national policy statements. Even when a food security and nutrition policy is in place, little attention is given to harmonising relevant sector policies with the food security and nutrition policy, or to policy implementation by mainstreaming food and nutrition security in local level development plans.

We are currently attempting to synthesise lessons learned from the country experiences supported by FNPP (Bhutan, Cambodia, Kenya, Mozambique and Zanzibar- United Republic of Tanzania), which is coming to an end. The idea is to externalise the experiences, hopefully for the benefit of other stakeholders and other countries. Since the number of countries involved is small, we would like to add other similar documented experiences so that certain lessons are more generalisable. Therefore, we would be most grateful for any indication of similar country level experiences. Specifically of interest are the following.

- Case studies of initiatives towards mainstreaming food and nutrition security in poverty reduction strategies, development plans or national policies in India or elsewhere
- Opportunities, challenges and lessons learned in implementing such initiatives with positive outcomes
- What kind of policy assistance is available or required to overcome constraints to mainstreaming food and nutrition security at local levels (like in district or municipal plans)

The information and insights that may be provided by participants in this online community will be used to enrich the lessons learned reports. Syntheses of the lessons learned reports can be

shared in this online community when they become available. The reports themselves will be made available by FAO for wide distribution.

Any insights and thoughts would most certainly be welcome, and hopefully this issue will stimulate a lively discussion.

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### **Responses were received, with thanks, from Food and Nutrition Security Community of Solution Exchange**

1. [R T Patil](#), Central Institute of Post Harvest Engineering and Technology, Ludhiana
2. [Sarwat Hussain Naqvi](#), Chattisgarh State AIDS Control Society (CGSACS), Raipur
3. [Rahul Banerjee](#), Khedut Mazdoor Chetna Sangath, Indore
4. [Poonam Pande](#), German Agency for Technical Cooperation (GTZ), New Delhi
5. [P. K. Thampan](#), Peekay Tree Crops Development Foundation, Kochi
6. Maroti Upare, Independent Consultant, Mumbai ([Response 1](#); [Response 2](#))
7. [K D Singh](#), Independent Consultant, New Delhi
8. [Sarala Gopalan](#), All India Women's Funds Association, New Delhi
9. [Biplab Nandi](#), Food and Agriculture Organization of the United Nations (FAO), Bangkok
10. [Abha Mishra](#), United Nations Development Programme (UNDP), New Delhi
11. [Pradip K Patnaik](#), Atragamee, Bhubaneswar
12. [Indira Chakravarty](#), All India Institute of Hygiene and Public Health, Ministry of Health & Family Welfare, Kolkata
13. [S K Roy](#), Centre for Health and Population Research, International Centre for Diarrhoeal Disease Research, Bangladesh (ICDDR,B), Dhaka
14. [Vanisha Nambiar](#), The M S University of Baroda, Vaddodara
15. K S Karnic, Independent Consultant, Bangalore ([Response 1](#); [Response 2](#))
16. [Nagesh Tekale](#), Navdrushti, Mumbai
17. [B. P. Gangadhara Swamy](#), Christian Children's Fund-India (CCF-India), Raichur
18. [Deeksha Sharma, Aradhana Srivastava and Vani Sethi](#), Urban Health Resource Centre, New Delhi
19. [Susanta Roy](#), Chief Consultant-National Horticulture Mission, New Delhi
20. [K V Peter](#), World Noni Research Foundations, Chennai
21. [Prema Ramachandran](#), Nutrition Foundation of India, New Delhi
22. [Raj Ganguly](#), Independent Consultant, New Delhi

### **Responses were received, with thanks, from Global Forum on Food Security and Nutrition Policies Strategies**

1. [Joseph Opio-Odongo](#), UNDP Regional Service Centre for Eastern and Southern Africa, Sudan
2. [Ardanti Y.C Sutarto](#), Food and Agriculture Organization of the United Nations (UN-FAO) Yogyakarta Office, Indonesia
3. [Brian Thompson](#), FAO's Nutrition and Consumer Protection Division
4. [O P Rupela](#), ICRISAT, Hyderabad
5. George Kent, University of Hawaii'I, United States of America ([Response 1](#); [Response 2\\*](#))
6. [Judith Appleton](#), Independent Consultant

*\*Offline Contribution*

***Further contributions are welcome!***

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## Summary of Responses

Achieving food and nutrition security for the marginalized and food insecure population requires mainstreaming of food and nutrition in general policies and programmes. The discussion looked into various convergence programmes, identified challenges and issues in implementing them and suggested ways of achieving this.

Members initiated the discussion by providing an overview of the various convergence programmes designed and implemented by the national and state governments towards mainstreaming food and nutrition security. They referred to the growing awareness in India that mere self-sufficiency in food production, improvement in per capita income or reduction in poverty ratio do not necessarily translate into reduction in undernutrition or micronutrient deficiencies. They recalled that India's Tenth Five Year Plan clearly articulated focused and comprehensive strategies for intervention by all concerned sectors – agriculture, public distribution, health and nutrition - to improve the nutritional and health status of individuals.

Discussants referred to the Government of India's initiatives like the [National Horticultural Mission](#) and [National Food Security Mission](#) that seek to address the production side, and the [National Rural Health Mission](#) that seeks to focus on nutrition as an element essential for primary health care. The Ministry of Women and Child Development's emphasis on convergence between the health care and food supplementation programmes on the one hand and that between the mid-day meal and school health programmes on the other, are attempts to mainstream food and nutrition. They cited the case of [Karnataka](#) where the midday meal implementation has been successful in addressing the food security needs of children.

In spite of various initiatives at the policy and programme level, members felt much remains to be achieved. They looked at various **challenges and concerns** relating to mainstreaming food and nutrition security. They pointed out that India is a leading producer of several agricultural commodities, yet about 900 million of its people survive on less than 2 dollar a day and 43% of its children under five are undernourished. Members considered poverty as the main impediment in achieving food and nutrition security. Food security of the low-income group is threatened owing to inadequate supply of food grains, higher costs and low purchasing power. Another issue was the inability of small farmers to sustain agriculture due to small land holdings (less than 2 hectares) poor soil, low fertility and lack of remunerative price for their produce. In interior tribal areas, geographic accessibility together with non-sustainable farm practices like slash and burn pose limiting factors for poverty alleviation efforts.

Highlighting the operational issues, members drew attention to the substantial variation in the progress of implementation of nutrition and poverty reduction programmes between the states and even between the districts in the same state. At the national level, they felt the absence of an integrated approach to food and nutrition security, with different departments - agriculture, food, public distribution, and health - dealing with the issues independent of one another. Food security and nutrition security viewed as the responsibilities of agriculture and health sectors respectively.

Agriculture is primarily regarded as an economic activity for improving the livelihood of farmers, where the choice of food stuffs produced, processed and provided to the population or the issues concerning health and nutrition receive much less attention. A case in point is the midday meal scheme that seeks to uplift the nutritional status of school going children. The emphasis is more on quantity rather than quality. The implementing personnel poorly informed about the importance of nutrition, the nutrient contents of the foodstuffs served or of the ways of preserving nutrition while cooking highlighted. Nor are they properly informed of the advantages of incorporation of locally grown leafy vegetables or of nutritional recipes from locally available food grains.

Referring to the urban context, members mentioned that more than half of the under-five children suffer from chronic undernutrition. Due to long delays in updating official slum lists, many slums often remain unlisted/unrecognized for entitlements to basic health and nutrition services. Irregular incomes leading to irregular food consumption, frequent episodes of infections due to poor living conditions, hygiene and sanitation, air and water pollution, poor coverage of PDS and ICDS identified as the reasons for poor food and nutrition security in urban areas.

Elaborating on various **approaches** towards ensuring food and nutritional security, members advocated the need to develop proper understanding of the outcome of mainstreaming food security and nutrition, of the contribution of different stakeholders, and of the communication strategies and the monitoring mechanisms required to gauge progress. They also emphasised on the need to develop vital links between poverty alleviation and policy planning, control of malnutrition, improving health, water and environmental sanitation, rural development schemes and policies, micro-enterprises, rural agro processing units and [employment generation schemes](#). Respondents stressed that the issue of safety net i.e. food, nutrition and health is important in pro-poor planning and poverty reduction and requires an integrated approach to address unemployment, alternative and sustainable livelihoods and economic empowerment.

Members reiterated the need for a sustainable agriculture policy. Farmers at grassroots level need to be organised and oriented towards sustainable agriculture practices and food security. [Joint Forest Management](#) committees (JFMC) can impart training and information on land and water conservation to groups of small landholders. Community storages for foodgrains can be refined to take care of food security for a whole year for the community with a system for replenishment. Natural resource-based livelihood promotion could be another alternative towards mainstreaming of food and nutrition security at all levels. Post harvest loss prevention is essential to capitalize on the existing level of production. Members cited the examples of Integrated Post Harvest Management (IPHM), [Jai Vigyan project](#) and [Integrated Rural Development](#) of fishing villages in **Sierra Leone**, which besides enhancing income and livelihoods have improved household food and nutritional security.

Sharing international experiences, discussants cautioned policy makers to avoid pitfalls. In this context, they cited the case of **Zambia**, where as part of education, efforts made to sensitize students to work out local initiatives to coordinate with health, agriculture and education, which largely remained only on paper. Another example was from **Sudan** with a large number of national policies that were little more than checklists with no internal priorities or mapping for implementation. The Government of Indonesia's policy became counter-productive as it forced the people to change product and consumption patterns resulting in food and nutrition insecurity.

Members came out with several suggestions. They wanted cultivation of proper knowledge and understanding among the local people about the sources of calories to which households have access. Quoting the example of **Kerala** where rice is consistently in short supply, people have access to diverse non-cereal food sources, which form part of the daily diet contributing to a

significant proportion of the calorie intake. They also cited the example from [Orissa](#) where changing production and consumption patterns are replacing the local diet of Mandia (minor millet) and maize seeds with rice, onion and chili. Considering the cost of disease burden particularly in least developed countries, which adversely affects food supply, health, nutrition, and productivity, they advocated mainstreaming food and nutrition security with disaster risk reduction as well. They also wanted preservation and propagation of traditional knowledge and local wisdom, as these help in building up community resilience, better coping strategies and hence food security as was seen in [East Nusa Tenggara](#).

Other recommendations of members included improving and strengthening the midday meal programme, ensuring quality and nutritional value of food with more local and seasonal vegetables and fruits, enhanced role for municipalities in mapping, implementing and monitoring food security and health schemes in slums and other urban areas inhabited by the poor. There is also an urgent need to revamp the public distribution system with focus on the most needy.

Food and nutrition security measures become effective when people have adequate opportunities for employment and earning income. Members saw a ray hope in safety net programmes like the employment guarantee scheme. They also noted that the 11th Five Year plan emphasizes on convergence and coordination of poverty, food, nutrition and employment programmes and greater integration of poverty reduction initiatives with food and nutritional programmes through the [Backward Regions Grant Fund](#) (BRGF).

Overall members felt that an integrated approach is necessary to mainstreaming food and nutrition security in the development paradigm.

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## Comparative Experiences

### National

#### Meghalaya, Nagaland, Mizoram and Jharkhand

##### **Dual Purpose of Livelihoods and Nutrition Security** (from [R T Patil](#), Central Institute of Post Harvest Engineering and Technology, Ludhiana)

Development programme on piggery was undertaken in 35 villages of four states. Fattening units (269), breeding units (31) and farm families (302) were covered. The biggest impact of the project was development of self-help group for sustained piggery production by establishing "Breeding Unit" and "Fattening Unit". This helped in developing sustainable livestock systems of higher monetary return that not only provided life support system but also nutritional security. Read [more](#)

### Orissa

##### **Changing Cultivation Practices Depleting Nutritional Status** (from [Abha Misra](#), UNDP, New Delhi)

As per the tradition among Kutia Kondh tribals Minor millets are harvested immediately after the monsoon till late April end with maize and also cultivate different variety of leafy products, tubers mushrooms. But the long production time, reduction in cultivation area, smaller return period and introduction of many high yielding crops not native to their eating habit is resulting in Mandia (minor millet) and maize seeds being supplemented with rice, onion and chilli.

### Maharashtra

**Ensuring Food and Nutrition Security through Mid Day Meal (MDM)** (from [Nagesh Tekale](#), Navdrushti, Mumbai)

As a part of the initiative to improve the quality of MDM, local schools were motivated to develop nutrition garden with the help of students and produce was used for preparing the meals. Tribal families holding irrigated land were encouraged to grow dark green leafy vegetables and fruits and divert this produce to schools under entrepreneurship. Women self help groups are able to manage the entire programme with great success.

**Karnataka**

**MDM help Improve Food Security of Children, Chamarajnagar and Mysore District of Karnataka** (from [B. P. Gangadhara Swamy](#), Christian Children's Fund (CCF-India), Raichur)

Before the introduction of MDM, children from lower income group after a morning meal with parents who would go off for labour work, either ate from the little money parents left for them buying fried grams or rice flakes or even not eat anything. After the introduction of MDM children are getting food and feeling better, energetic and are able concentrate on to teachers' lessons in the class, health conditions of most of the children are improved.

**International**

**Indonesia**

**Food Security and Livelihood through Community Based Disaster Risk Management, East Nusa Tenggara** (from [Ardanti Y.C. Sutarto](#), FAO, Indonesia)

Community has been able to develop its own food early warning system to overcome food shortage during drought season. This shortage was mainly due to lack of climate-related knowledge and information within the local population often leading to crop failure. A Community-Based Disaster Risk Management (CBDRM) initiative to address the issue has helped building monitoring system for food security and livelihood. Read [more](#)

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**Related Resources**

**Recommended Documentation**

**The Jai Vigyan Project on Household and Nutritional Security for Tribal** (from [R T Patil](#), Central Institute of Post Harvest Engineering and Technology, Ludhiana)

DARE/ICAR Annual Report; Department of Agricultural Research and Education and Indian Council of Agricultural Research; New Delhi; 2002-2003

Available at <http://www.icar.org.in/anrep/anrep0203.pdf> (PDF Size: 5.3 MB)

*Page 129 provides details of project implemented for improved livestock productivity in Tribal hilly areas serving as life support system and improved nutritional security*

**National Nutrition Policy** (from [Sarwat Hussain Naqvi](#), CGSACS, Raipur)

Policy Document; Department of Women and Child Development; New Delhi; 1993

Available at <http://wcd.nic.in/nnp.pdf> (PDF Size: 8.4 MB)

*States mere economic development, or even the adequacy of food at household levels, are no guarantees for a stable and satisfactory nutritional status*

**Sustainable Agriculture** (from [Poonam Pande](#), GTZ, New Delhi)

Book; by Author's title. Name; GTZ Sustainet; 2006

Available at [http://www.mamud.com/sustainet\\_india.htm](http://www.mamud.com/sustainet_india.htm)

*Details examples of how sustainable development initiatives have helped farmers break out of the cycle of poverty, improve livelihoods and their food and nutrition security*

**Integrated Development in Shenge** (from [Maroti Upare](#), Independent Consultant, Mumbai, [response 1](#))

Project Evaluation Summary; United Nations Capital Development Fund; 1993

Available at [http://www.uncdf.org/english/evaluations/sil85co3\\_midterm.php](http://www.uncdf.org/english/evaluations/sil85co3_midterm.php)

*Project implemented to increase fish production and daily intake of animal protein; aimed at improving the standard of living and nutritional security of the local rural population*

**Joint Forest Management (JFM)** (from [Sarala Gopalan](#), All India Women's Fund Association, New Delhi)

Study; Ministry of Environment and Forests

Available at <http://envfor.nic.in/divisions/forprt/terijfm.html>

*Reviews institutional framework for JFM, technology for increasing productivity through participation of local communities, thereby helping improve food security*

**Mid-Day Meal Scheme (MDM)** (from [Vanisha Nambiar](#), The M S University of Baroda, Vadodara)

Guidelines; Ministry of Human Resource Development; 2006

Available at [http://education.nic.in/mdm/FINAL\\_Guidelines\\_MDM\\_19\\_sept.pdf](http://education.nic.in/mdm/FINAL_Guidelines_MDM_19_sept.pdf) (PDF Size: 1.33 MB)

*Provides norms for nutritional intake and supply of food grains under the MDM scheme implemented towards improving the nutritional status of children*

From [O P Rupela](#), ICRISAT, Hyderabad

**Nutritional Quality of Organic Versus Conventional Fruits, Vegetables, and Grains**

Survey Findings; by Virginia Worthington,; The Journal of Alternative and Complementary Medicine, Volume 7, Number 2,; 2001

Available at [http://journeytoforever.org/farm\\_library/worthington-organic.pdf](http://journeytoforever.org/farm_library/worthington-organic.pdf) (PDF Size: 180 KB)

*Compares nutrient content of organic and conventional crops using statistical methods to identify significant differences and trends in the data affecting nutritional security.*

**Nutritive Value of Food Produced with and Without Fertilizers**

References; Food and Agriculture Organization of the United Nations (FAO)

Available at [http://km.fao.org/fileadmin/user\\_upload/fsn/docs/OF\\_nutrition\\_lit.doc](http://km.fao.org/fileadmin/user_upload/fsn/docs/OF_nutrition_lit.doc) (Document Size: 41 KB)

*List 25 publications in scientific journals referring to food produced using organic farming practices provide more nutritional content*

**ICDS and Right to Food** (from [George Kent](#), University of Hawai'I, United States of America)

Article; by George Kent; Economic and Political Weekly; 11 November 2006

Available at <http://www2.hawaii.edu/~kent/ICDS%20and%20Right%20to%20Food.pdf> (PDF Size: 107 KB)

*Suggests establishing institutional arrangements to assure nutritional security of the intended beneficiaries of ICDS and other schemes to get what they are entitled for*

**Health of the Urban Poor in India Key Results from the National Family Health Survey, 2005-06** (from [Deeksha Sharma](#), [Aradhana Srivastava](#) and [Vani Seth](#), Urban Health Resource Centre, New Delhi)

Report; Ministry of Health and Family Welfare

Available at <http://www.uhrc.in/downloads/wall-chart.pdf> (PDF Size: 347 KB)

*Reports that the health and nutritional status of the urban poor is considerably worse off than the non poor in urban area and is comparable to the rural figures*

**All Slums are Not Equal: Child Health Conditions Among the Urban Poor**

Article; by Siddharth Agarwal and Shivani Taneja; Indian Pediatrics, Volume 42; 17 March 2005;  
Available at <http://medind.nic.in/ibv/t05/i3/ibvt05i3p233.pdf> (PDF Size: 113 KB)

*Suggests urban child health program should build in context appropriate and community-need-responsive approaches to improve children's health and nutrition security*

**Designing Rights Based School Feeding Programs** (from George Kent, Department of Political Science, University of Hawai'i, USA, [response 2](#))

Essay; by George Kent; 24 October 2007

Available at [http://www2.hawaii.edu/~kent/Designing\\_Revision\\_2.doc](http://www2.hawaii.edu/~kent/Designing_Revision_2.doc) (Document Size: 139 KB)

*Emphasises rights-based school feeding programs yield better nutritional and educational results, when compared with school feeding programs that are not rights-based*

**National Food Security Mission** (from [Prema Ramachandran](#), Nutrition Foundation of India, New Delhi)

Operational Guidelines; Department of Agriculture and Co-operation, Ministry of Agriculture; August 2007

Available at <http://www.indg.in/agriculture/rural-employment-schemes/nfsm-operationalguidelines.pdf> (PDF Size: 667 KB)

*Major objective of the scheme is to increase production and productivity of wheat, rice and pulses on a sustainable basis so as to ensure food security of the country*

**Building Disaster Resilient Communities** (from [Ardanti Y.C. Sutarto](#), FAO, Indonesia)

Report; United Nations; Global Network of NGOs" for Disaster Risk Reduction; Geneva; 2007

Available at [http://www.unisdr.org/eng/about\\_isdr/isdr-publications/06-ngos-good-practices/ngos-good-practices.pdf](http://www.unisdr.org/eng/about_isdr/isdr-publications/06-ngos-good-practices/ngos-good-practices.pdf) (PDF Size: 1.7 MB)

*Page 36 explains on the initiative that seeks to build a monitoring system for food security and livelihood with the aim of preventing the food shortage.*

From [T N Anuradha](#), Research Associate

**Food and Nutrition Policy: Challenges for the 1990s**

Article; by Sushma Palmer; Health Affairs

Available at <http://content.healthaffairs.org/cgi/reprint/9/2/94.pdf> (PDF Size: 164 KB)

*Examines federal food and nutrition policies from a historical perspective and proposes challenges for the next decade*

**Planning for Food and Nutrition Security in Egypt**

Study; by Aida El-Asfahani and Ibrahim Soliman; United Nations University Press; March 1989;

Available at <http://www.unu.edu/unupress/food/8F111e/8F111E0a.htm>

*Tests hypothesis for developing agricultural production guided by the nutritional requirements of the Egyptian population for the major food products.*

**Achieving Food and Nutrition Security**

Book; by Georg Bokeloh, Göttingen, Maria Gerster-Bentaya, Stuttgart, Lioba Weingärtner, RottenburgKlaus Klennert (Editor); InWEnt – Internationale Weiterbildung und Entwicklung gGmbH and Capacity Building International, Germany; 2005

Available at [http://www.inwent.org/imperia/md/content/unternehmenskommunikation-intranet/internet/publikationen/food\\_reader\\_engl.pdf](http://www.inwent.org/imperia/md/content/unternehmenskommunikation-intranet/internet/publikationen/food_reader_engl.pdf) (PDF Size: 2.64 MB)

*Provides an overview on the current Food and Nutrition situation worldwide, and tackles the various dimensions and levels, thus describing the holistic approach.*

### ***Recommended Organisations and Programmes***

**National Horticulture Mission , New Delhi** (from [Prema Ramachandran](#), Nutrition Foundation of India, New Delhi)

Government of NCT of Delhi, 5/9 Under Hill Road, Delhi-110054; Tel: 91-11-23930783 ; Fax: 91-1123957289 [dev.com@nic.in](mailto:dev.com@nic.in); <http://nhm.nic.in/>

*An end-to-end holistic approach is followed to ensure food security covering production, post harvest management and marketing for fare returns to growers/producers*

### ***Recommended Portals and Information Bases***

**Backward Regions Grant Fund (BRGF), Ministry of Panchayati Raj** (from [Sarwat Hussain Naqvi](#), Chattisgarh State AIDS Control Society, Raipur)

<http://www.brgf.gov.in/>

*Provides programme design details implemented by Panchayati Raj Institutions from planning to implementation, considers food and nutrition security aspects.*

**National Rural Employment Guarantee Act 2005, Ministry of Rural Development** (from [Sarala Gopalan](#), All Indian Women's Funds Association, New Delhi)

<http://www.nrega.nic.in/>

*Provides livelihoods security for households in rural areas of the country, suggested as an avenue for improving food security by including jobs like creation of small godowns etc.*

From [Prema Ramachandran](#), Nutrition Foundation of India, New Delhi

**Tenth Five Year Plans, Planning Commission, Government of India, New Delhi**

<http://planningcommission.nic.in/plans/planrel/fiveyr/welcome.html>

*Provides links to section of plan documents that articulate focussed and comprehensive interventions aimed at improving the nutritional and health status of individuals.*

**Publications of Nutrition Foundation of India (NFI)**

[http://www.nutritionfoundationofindia.res.in/publication\\_others.asp](http://www.nutritionfoundationofindia.res.in/publication_others.asp)

*Lists various publications that provides details of various programmes and their progress being implemented towards improving the nutritional security of populace*

**Fresh Fruits and Vegetables, Agriculture and Processed Food Products Export Development Authority, New Delhi** (from [Raj Ganguly](#), Independent Consultant, New Delhi)

[http://www.apeda.com/apedawebsite/six\\_head\\_product/FFV.htm](http://www.apeda.com/apedawebsite/six_head_product/FFV.htm)

*Provides details of food production and quantum of export of various fruits and vegetables across the globe*

**National Rural Health Mission, Ministry of Health and Family Welfare**

<http://mohfw.nic.in/NRHM.htm>

*Provides operational and technical details of the mission that determinants of good health to segments of nutrition, sanitation, hygiene and safe drinking water*

### ***Related Consolidated Replies***

**Indices for measuring nutritional status in children, from Prema Ramachandran, NFI New Delhi (Advice). Food and Nutrition Security Community and Maternal and Child Health community,**

Issued 10 January 2006. Available at <http://www.solutionexchange-un.net.in/food/cr/cr-se-food-26100501.pdf> (PDF,Size: 136 KB )

*Discusses issues in anthropometry to find the most suited indices for measuring nutritional status in children in India*

**Food Security through Panchayats, from B Rajaraman, Civil Supplies & Consumer Protection Department, Chennai (Advice; Experiences). Decentralization Community and Food and Nutrition Security Community,**

Issued 10 January 2006. Available at <http://www.solutionexchange-un.net.in/decn/cr/cr-se-decn-food-07010601.pdf> (PDF,Size: 152 KB)

*Attempts to explore possible strategies for involving PRIs in food security administration, and models/best practices in these areas.*

**Implementation of Right to Food, from Rebecca Kik, Right to Food Volunteer, Food and Agriculture Organization of United Nations, New Delhi (Experiences). Food and Nutrition Security Community,**

Issued 18 November 2007. Available at <http://www.solutionexchange-un.net.in/food/cr/cr-se-food-17100701.pdf> (PDF,Size: 130 KB)

*Looks into ways to improve implementation of 'right to food' efforts, shares successful initiatives and outlines possible strategies for its realization*

**E- Discussion: Food Security for Vulnerable Groups through Panchayats Rajwant Sandhu, Ministry of Panchayati Raj, New Delhi. Decentralization Community and Food and Nutrition Security Community,**

Issued 9 October 2007. Available at <http://www.solutionexchange-un.net.in/decn/cr/cr-se-decn-10100701.pdf> (PDF,Size: 193 KB)

*Discusses role currently assigned to community based organizations and panchayats to enhance food security of vulnerable groups, role of Governments in improving PDS*

**Locating Best Practices in ICDS, Tripti P. Joshi, The Micronutrient Initiative, New Delhi (Examples). Maternal and Child Health Community and Food and Nutrition Security Community**

Issued 6 March 2007. Available at <http://www.solutionexchange-un.net.in/health/cr/cr-se-mch-food-21020701.htm>

*Examples of various feasible and practical strategies used in ICDS across various states and some assessment studies and reports on "best" ICDS practices.*

**Designing of Grain Banks for Enhanced Food Security, from Sejal Dand, Anandi, Gujarat (Examples; Experiences). Food and Nutrition Security Community**

Issued 4 January 2006. Available at <http://www.solutionexchange-un.net.in/food/cr/cr-se-food-04010601.pdf> (PDF,Size: 160 KB)

*Practical examples for designing community-managed grain banks, including a variety of models and approaches.*

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## Responses in Full

**R T Patil, Central Institute of Post Harvest Engineering and Technology, Ludhiana**

One of the most important aspect of improving the food and nutritional security to the poor is to find out the sustainable method of increasing their daily income. This could be done by providing

those guaranteed jobs in road construction, land development as well soil and water conservation activities and other developmental activities which will necessitate their involvement. At the same time it is necessary that distribution of subsidized food is proper and up to their work place. Another approach is developing entrepreneurship among these people for micro enterprises based on local resources. Like raising milch and meat animals and some processing of meat and milk, growing fruits and vegetables either in kitchen garden or small holding and their processing and preservation with proper forward linkages.

The projects implemented by ICAR under Jai Vigyan-NATP (<http://pib.nic.in/feature/fe0699/f0806991.html>) for ensuring Household food and nutritional security in tribal, hilly and backward areas during 2000-2005 has done very good work in this direction and shows promise of replicating in other places too.

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**Sarwat Hussain Naqvi, Chattisgarh State AIDS Control Society (CGSACS), Raipur**

Yes I do agree that the 'Mainstreaming Food and Nutrition Security' is a global concern and ofcourse most of the time Poverty-food and nutrition security linkages are overlooked in national policy statements.

Now a day's things are changing gradually and lots of paradigm shift is taking place at the planning, policy and execution level. I am happy to share with you few of the initiatives. In the 11th Five Year plan the integration, convergence and coordinated efforts on the Poverty-food and nutrition security amalgamation is proposed.

Backward Regions Grant Fund (BRGF) is a need base fund which is essentially used for the regional poverty alleviation activities and designed to redress regional imbalances in development. The fund provides financial resources for supplementing and converging existing developmental inflows in our state plan (PIP), we have proposed the rational and logical use of the fund especially integration of poverty initiatives with the Food and Nutritional Security. More information can be obtain from <http://www.brgf.gov.in>

National and State Nutrition policy provides a strategic frame work to 'Mainstreaming Food and Nutrition Security' it also talks about the role of various government department, Institution, project and programme.

In fact crop cycle rotation should be clubbed with the Dietary diversification and Food Fortification along with the regional and seasonal variation in food habits. Poverty alleviation efforts needs to be planned in line with the "Food for Work" or National Rural Employment Guarantee Act (NREGA) Sum Vikas or SGSY (Swarnjayanti Gram Swarozgar Yojana) Government of India Schemes

To have a multi sectoral response to the Mainstreaming Food and Nutrition Security and convergence with the Agriculture and Health Department National Rural Health Mission decentralize planning is a good forum where this integration could be done because Nutrition is also a part of NRHM.

Food Availability, Accessibility and Affordability could be link with the Income Generating activities of Self-Help Group or could be integrated with the organic farming etc.

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**Rahul Banerjee, Khedut Mazdoor Chetna Sangath, Indore**

I would like to address the last query regarding the policy assistance available for mainstreaming food and nutrition security in India, which in my opinion is minimal.

The problem of food and nutrition security in India arises from the fact that a majority of farmers are small holders tilling less than 2 hectares of land of low fertility, poor soil depth and large gradients. These lands are unsuitable for flood irrigation even if such irrigation were available.

The application of fertilisers for production of high yielding varieties further aggravates the condition of these lands. The optimum use of these lands can be made only by ensuring the conservation of soil moisture for longer periods for subsistence production of indigenous cereals and pulses through water and soil conservation measures such as farm bunding, farm ponding, nulla plugging etc. Simultaneously the adjoining wastelands have to be treated for the sustainable production of bio-mass which can be used for fuel and for manure through composting. All this requires a lot of communitarian labour.

Unfortunately the stress laid on flood irrigation either from surface water with dams and canals or through lifts with pumps or from the shallow and deep ground water aquifers and the use of high yielding varieties, chemical fertilisers and pesticides have turned the small holder farmer away from sustainable, labour intensive subsistence agriculture.

The only way out is to organise a massive counter campaign among small holders in favour of soil and moisture conservation and sustainable organic agriculture in dry land areas duly aided by research and market support. There are very good guidelines in this regard. But except in a few pockets here and there, these are not seriously implemented on a large scale. The NREGA was supposed to fund this kind of a change, however, in reality this is yet to be seen.

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**Poonam Pande, GTZ, New Delhi**

I agree with the statement given by [Rahul](#) for the small farmers. Due to increasing costs of the inputs in the agriculture whether its is chemical fertilizers, pesticides or irrigation, small farmers are facing a lots of problems to sustain the agriculture. As we are talking about food security issues and we also know that through small bio-diverse farms we should be able to secure the food crisis. The time is to organize the small land holders for the organized Sustainable Agriculture.

We have a publication on "Sustainable Agriculture: a pathway out of poverty for India's rural poor" ([http://www.mamud.com/sustainet\\_india.htm](http://www.mamud.com/sustainet_india.htm)) which depicts the success of Sustainable Agriculture for food security and other issues also.

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**P. K. Thampan, Peekay Tree Crops Development Foundation, Kochi**

My observations on the third point in the query on food and nutrition security issues are furnished below:

In many states in India particularly in the tribal belts poverty is rampant. In some states where social sector development has recorded significant progress, food security of the low-income group of people is threatened owing to inadequate availability of food grains, the major food source. Generally, food security is subject to influence by the changes in the per capita availability of food grains and the price factor. In the poverty stricken areas and in states where the local availability of food grains is in short supply coupled with the price rise propelled by the periodical increase in the procurement prices and the related inflationary pressure, there could be

an increase in the proportion of both rural and urban households with inadequate income to satisfy the minimum per capita daily intake of 2,400 calories in villages and 2,100 calories in cities. In this scenario what is more important is energy security and not nutrition security, though the latter has its own significance.

One limitation in the present food security estimates is the failure to take into account all the sources of calories to which the households have access. In Kerala where rice is consistently in short supply people have access to diverse non-cereal food sources, which form part of the daily diet contributing to a significant proportion of the calorie intake. The common non-cereal foods to which the people have ready access are coconut; tapioca, yam and other tubers; jack and banana including other plantains. The combined contribution of dietary energy from these sources is more than that derived from the domestic output of cereals. However, the total contribution of all the food sources produced in the state falls short by over 30% of the daily calorie requirement, which is made good through the procurement of rice from other states.

Nutrition security measures become effective when people have adequate energy sources to consume and opportunities for higher income and employment. In this scenario people become more conscious of the importance of better nutrition for sustaining healthy life and a slow change in the food habits takes place. When the income level improves, there is a corresponding increase in the consumption of protective foods as well as protein foods and proportionate reduction in the intake of cereal foods. It is possible to integrate food and nutrition security initiatives provided such integrated approaches are well conceived and implemented as a peoples programme through local self-government institutions and community-based organizations.

In states like Kerala separate departments handle agriculture, animal husbandry and fisheries. Integrated approach to food and nutrition security issues is lacking at panchayat and district levels. Because the line departments are controlled by different political groups in a coalition, practical difficulties are encountered with when integrated approach is conceived for implementation at field level. For effective food and nutrition security initiatives what is needed is national/state level integrated plan with operational flexibility for the PRIs to introduce in accordance with the local situations. The thrust of the plan may be promotion of intensive integrated agriculture in farm-households comprising arable crops, livestock components including poultry and pisciculture in the same operational units. Through this approach it is possible to generate and make available protective and protein foods, enhanced employment and income.

Food production has to be diversified with the objective of enhancing biological productivity from each operational holding by adopting ecologically sustainable farming systems and practices. Biological productivity relates to foods of plant and non-plant origin. The holdings of small farmers in most of the states in India are dominated by active agricultural population. In these holdings integrated farming system has to be promoted to generate multiple sources of food and income to the dependent families. Arable crops, fruit trees, cattle, goat, poultry, inland fish, honey bees etc. could be compatible components of the system. Along with this approach, employment oriented rural development projects have to receive emphasis to strengthen rural economy and purchasing power of the poor.

There shall be a special drive to popularize area specific agro techniques devoted to resource conservation and production of foods appropriate to local conditions and needs. Water conservation strategies and priority for the production of coarse grains are more relevant in dry farming belts than in other areas. Likewise, many food crops enjoy area specific importance or distribution. By giving priority to the production of these foods in potential areas, locally available resources could be effectively harnessed without allowing them to get dissipated over inappropriate programmes.

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**Maroti Upare, Independent Consultant, Mumbai (response 1)**

The issue of safety net i.e food, nutrition and health is important in pro-poor planning for poverty reduction. The access to these three factors are responsible for poverty hence it should be addressed in integrated manner. I am happy to share my experience of executing the project 'Integrated Rural Development of Fishing villages in Sierra Leone' (West Africa) funded by UNDP, UNCDF and implemented by FAO

The objective of project was holistic (integrated approach) for development of 11 fishing villages. The project supported following investments.

- Strengthening of institutions -formation of primary fisheries cooperatives in 11 villages and federation of them, support to schools and hospital.
- Infrastructure development - roads, communications etc.
- Training and exposure visits for livelihood improvements
- Supply of equipments and credit for production and marketing products

The mainstreaming idea was to provide training for improving livelihoods, organise them for preparing village plan and mechanism of development through village cooperatives, supply necessary inputs on credit and manage revolving funds, market produce by taking it to bigger markets in district level to realise higher price. Avail health facilities.

The project transformed the area (Shenge region) through this project. At the end of the project the strong Federation was established and able to provide all services to their members i.e daily need of food items can be purchased from cooperative store, assistance for technical matters for livelihoods, equipments, credit and ambulance for taking patients to district hospitals which can not be treated in village hospital. Nutritional food was also given to expected mothers.

The learning experience of this project and similar nature of projects gives basis to planning process for integrating or mainstreaming the safety net policies (i.e food, nutrition and health) in poverty reduction plans and programmes. There is need to emphasise planners at all levels to give adequate fund allocation for food and nutrition security to communities and it is more relevant when prices of agriculture commodities are rising beyond the purchasing power of poor and affecting livelihoods of millions poor in developing countries.

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**K D Singh, Independent Consultant, New Delhi**

I am working mostly in tribal areas of the country including the Central and North Eastern Zones. In these areas, geographic accessibility is the main limiting factor, which has to be internalized in all planning. This is also promoting non-sustainable agriculture expansion such as by slash and burn. In these area choice of crops, agriculture extension and food security must keep into account the location specific variables. In one of research States, for example, Mizoram, almost half of villages are inaccessible and can be reached by public transport, one day per week, if it plies at all.

I have also done some time series study to observe, how local communities are trying to add to future wealth and not only live on a day to day basis. Building assets for the future is most important basis for the food security. Wild Collection forms almost 50% of the food security. But, forests are fast depleting due to need for more land for non-sustainable agriculture. Thus, there is diminishing trend of food security.

An integrated view of total livelihood sources and its future development on a geographic basis is called for, specially in tribal areas.

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**Sarala Gopalan, All India Women's Funds Association, New Delhi**

The subject is very interesting and urgent in the current context. I have two suggestions to offer.

First, is about optimising the use of land and water with better soil and water conservation. We in India have several successful experiments which should now be applied appropriately to different regions. In my personal visits I have found the forest villages with invariably poor agriculture, due to their remoteness. If the Joint Forest Management committees (JFMC) could be used for imparting training and information on land and water conservation several small land holders in these areas will benefit. This requires coordination between agriculture and forest departments and specialised NGOs to impart new appropriate technologies.

Second, is a practice already started in some of these areas, to build community storages for foodgrains. If this can be refined to take care of food security for a whole year for the community, and a system put in place to replenish stocks after every harvest, by compensating the farmers, distress sales after harvest, and famine subsequently avoided. The local Panchayat and the relevant JFMCs along with the Agriculture Department should work out a programme with proper cash flows and financial support by using funds from various schemes of the Government for poverty eradication.

Example, NREGA can help in creating the small godowns, Employment and credit programmes can create resources for cultivation and stock of produce, and civil supplies programmes take of the distribution, as would be appropriate for each community. We could do it on a pilot basis and then share it with all communities.

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**Biplab Nandi, Food and Agriculture Organization of the United Nations (FAO), Bangkok**

My experience suggests that we need to show solid ground level evidence that agriculture sector can indeed contribute to improving nutrition (Food) security. This approach is being advocated very strongly by Dr. M S Swaminathan and also by Dr. C. Gopalan in India. Attempts to address nutrition concerns through health sectors have had enough evidence on its own but not really in the context of achieving nutrition security where access to food has been a problem. Now the soaring food price has added oil in the fire. Biofuel is another controversy. It will really be useful to see some evidence based agricultural intervention to show that agriculture contributes well in addressing the concerns of household food insecurity. It is unfortunate that in most developing countries nutrition considerations are either absent or grossly inadequate in the development policies and programmes at the national level and therefore, at the local level. We all need to act in a more coherent way to inject nutrition agenda into the agriculture domain.

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**Abha Mishra, United Nations Development Programme (UNDP), New Delhi**

It is an interesting point about the slash and burn practices mentioned by [K D Singh](#). One may need to explore it further as these practices have a long production period of crops e.g. Kutia Kondh of Orissa start harvesting minor millets immediately after the monsoon till late April ending with maize while during the monsoon they may have different variety of leafy products, tubers mushrooms etc from their fields, but today due to reduction of area and smaller return period to the same fields the produce is less besides we have introduced many crops that may be high

yielding not native to their eating habit. So rice with onion and chilli has supplemented Mandia (minor millet) and maize seeds.

Thus what K D Singh has said is very important that "An integrated view of total livelihood sources and its future development on a geographic basis is called for, specially in tribal areas" to ensure Food and Nutrition Security.

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**Pradip K Patnaik, Agramee, Bhubaneswar**

Mainstreaming Food and Nutrition Security is a key issue for everyone living in urban and rural areas now a days.

If it is a concern for mainstreaming, first of all I would suggest for bringing Sustainable Agriculture Policy in the line of people's perspective both at country and state level. Farmers at grassroots level need to be organised and oriented towards sustainable agriculture practices and food security. It is necessary to enhance the knowledge base of common mass about food and nutrition security and also ensuring of the same. How people have access and control over resources to have their food rights and nutritional security.

Natural Resource based Livelihood promotion could be one more alternative towards mainstreaming of Food and Nutrition Security at all level. In this connection, sustainable management of micro watersheds for ensuring of sustainable agriculture and promotion of livelihood is one more milestone for food and nutrition security. Hence, it is necessary to integrate sustainable watershed development with sustainable agriculture practices. Though, we do work with people living in remote tribal locations, so it is pertinent that people should have access and control over such components for their sustainable agriculture practices. Sustainable agriculture practices leading to sustainable production of food and nutrition crops shall definitely help to mainstreaming food & nutrition security.

So strong policy dialogue and advocacy are very much necessary for bringing Sustainable Agriculture Policy both at state and country level which will ultimately lead to Food and Nutrition security.

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**Indira Chakravarty, All India Institute of Hygiene and Public Health, Ministry of Health & Family Welfare, Kolkata**

Mainstreaming of food security with links to poverty alleviation, policy planning, control of malnutrition, improving health, water and environmental sanitation inputs etc are extremely essential. Unless this integrated approach is made, malnutrition can never be overcome in the developing countries, particularly - India.

Studies conducted by us in collaboration with FAO of the United Nations, WHO as well as several Ministries of Government of India like, Health and Family welfare, Food Processing, Panchayati Raj, Rural Development etc have clearly indicated that interventions like - Home, School and backyard gardening; Development of local nurseries for fruits and vegetable growing plants and seeds; Local level food processing; Trainings on these to women and self help groups; and involvement of the local panchayat members at every step has lead to following

- Inclusion of recommendations in Government plans and budget allocations
- Enhancement of income of local community
- Improvement in nutrient intake status
- Availability of a balanced diet in lean seasons and finally
- Overall improvement of health related behaviour

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**[S K Roy](#), Centre for Health and Population Research, International Centre for Diarrhoeal Disease Research, Bangladesh (ICDDR,B), Dhaka**

Thanks to [Biplab Nandi](#) for brining up the food security or agriculture sector showing solid evidence for improving nutrition.

We actually do not live in a society where we could show a model showing relationship of linearity of food intake and nutritional status and not increasing the proportion of overweight and obesity and increasing risk of non-communicable diseases. The national food intake data and nutrition survey shows that more food insecure homes are hosting more malnourished children and has been shown in National Nutrition Project of Bangladesh the fact of 27% adolescents having only two meals where 50% are having BMI less than 18.5. We have enough proof for role of food. But Infectious disease is a big burden when the health sector comes into the play.

We have to have the food security but world is dying to address MDG 1 where recently Bangladesh added 8% more ultra poor to existing 40%. The cost of disease burden in LDCs has to be calculated in terms of health, nutrition, mortality, productivity, Disability adjusted life years (DALY) and economic return of the country. Therefore we should nationally and globally make strong efforts to bring FAO and WHO in one table and likewise Health Sector and Food sector in same concern. How to do that effective to better nutrition is a challenge. If you know any where it is working nicely, please share with us and move the process.

Bad Governance of LDCs is making the largest harm. Without addressing that what resource will be well utilized. Policy corrections, improvements are needed to ensure that resources are available, allocated and utilized to the benefits of the lower socioeconomic and vulnerable groups. Let there be such investments that poor people do not stay poor by just making reallocation of budgets towards them in sectors of food, health, education and technologies.

Health scientists have to talk on social development issues and public health nutrition without delay.

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**Joseph Opio-Odongo, UNDP Regional Service Centre for Eastern and Southern Africa, Sudan**

This certainly is a worthwhile exercise given the centrality of food and security issues to human development. Lessons emerging from the completed mainstreaming efforts will be instructive to future mainstreaming initiatives.

In the interest of having a more systematic synthesis of the lessons learnt so far, I suggest that we consider using a **set of common issues around which we narrate the country experiences**: The following issues come to mind:

- The kinds of results that were being sought through mainstreaming food security and nutrition
- The different stakeholders (domestic and external) who were involved and how they were individually and collectively expected to contribute to the realization of the results ; and whether or not those expectations were met
- The communication strategies used in enhancing the prospects of getting food security and nutrition issues on the policy agenda. And how the strategies helped to enhance the salience of food security/nutrition both as a public policy concern and a human development concerns

- The mainstreaming strategies put in place by the agency that was primarily responsible for promoting mainstreaming
  - Whether the methods used combined "paper mainstreaming" (getting the food security and nutrition issues embedded in the national or sector policies) with the difficult task of getting increased budget allocations for food security and nutrition
  - The extent to which what got mainstreamed were effectively implemented
  - The monitoring mechanisms used to gauge progress towards the desired mainstreaming outcomes
  - Positive and negative surprises on process and products of mainstreaming as a cross-portfolio priority issue
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**Ardanti Y.C Sutarto, Food and Agriculture Organization of the United Nations (UN-FAO) Yogyakarta Office, Indonesia**

I will discuss this issue related to Disaster Risk Reduction (DRR) in Indonesia. To mainstream food and nutrition security within disaster risk reduction into development, we'd better considering local wisdom and traditional knowledge (Indonesia National Action Plan 2006-2009). It will build community resilience when disasters happen. For example, PIKUL (a local NGO in East Nusa Tenggara, Indonesia) has a food security program related to DRR. Unfortunately, only a few institutions have this program.

The Government of Indonesia (GoI) has policy nonalignment on agriculture (Government forced people to change product pattern and consumption), resulting in food and nutrition insecurity. Farmers have no control on the price and they can't get adequate daily food. Insufficient of food impacted nutrient intake. Please check on: <http://pikul.or.id>.

We need to keep in mind local communities and local conditions to ensure food and nutrition security when disasters happens.

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**Brian Thompson, FAO's Nutrition and Consumer Protection Division**

Biplab Nandi said "*we need to show solid ground level evidence that agriculture sector can indeed contribute to improving nutrition*" and that "*We all need to act in a more coherent way to inject nutrition agenda into the agriculture domain*". FAO's Nutrition Division is currently preparing a publication intended to document the benefits of food based approaches (FBAs), particularly of dietary improvement and diversification interventions, in controlling and preventing micronutrient deficiencies. The publication is to focus on practical actions for overcoming micronutrient deficiencies through increased access to and consumption of adequate quantities and variety of safe, good quality food. It will also gather a variety of relevant advocacy and technical material under one cover to encourage and promote further attention to and investment in such activities.

Anyone interested in submitting a paper for inclusion in this publication may contact us directly. Brian Thompson ([Brian.Thompson@fao.org](mailto:Brian.Thompson@fao.org))

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**[Vanisha Nambiar](#), The M S University of Baroda, Vaddodara**

The Government of India has several programmes on paper to combat malnutrition and enhance the Food Security of the vulnerable groups. I would like to share my experiences with mid-day meal programme concerned with the school children.

Mid-day meal scheme fights hunger among the poorest children and helps them get into school, and thus provide them with an important key to a better future – education. It is generally seen as another welfare scheme through which some benefits may trickle down to the poor. In Gujarat the Mid Day Meal (MDM) program covers school children from Standard 1-VII, in all the Government aided schools in the 25 districts of the state for mitigating malnutrition among the vulnerable groups. Increasingly activists and researchers are trying to draw attention to the lack of food security and are mounting campaigns for the Right to Food.

Statistics reveal that children suffer from Iron Deficiency Anemia (IDA), Vitamin A Deficiency (VAD), Iodine Deficiency Disorders (IDD) and Protein-Calorie Malnutrition (PCM). In order to assess whether the problem of under nutrition and food security is really addressed through the school feeding programmes, a small attempt was initiated by our team to study the largest such programme in India in Vadodara, Gujarat using Health Systems Research (HSR) methodology.

This involved obtaining permissions from several agencies for investigation and research, namely the administrative officer of Vadodara Mahanagar Seva Sadan (VMSS), Deputy Collector, MDMS, Vadodara and the state Education Department, besides the school principals concerned. This necessitated repeated visits particularly to the Education Department where a lot of explanation and justification were required to persuade them to see our point. This itself was demotivating for many. Convincing the school principals was another Herculean task. The point to be underlined is that the personnel of these agencies and departments need to be properly motivated through training and other information campaigns in this national mission of ensuring food security and nutrition to children who are the future of our country.

We have since set about the task of evaluation of MDMS as per the Nutrition Support for Primary Education 2006 guidelines. We segregated the issues into three segments. 1) *Managerial issues* pertaining to understanding the planning and administration of the scheme by the central, state and local governments; 2) *Technical issues covering* nutritional and food safety concerns; and 3) *Logistical issues* pertaining to actual day-to-day running of the scheme in government schools, such as procurement, storage, preparation, and serving of food. An Action Project of augmenting micronutrient/ vegetables in the mid-day meal, within the budget allocations of the MDM was initiated in the all the 124 schools offering MDMS of Urban Vadodara. Nutrition Health Education materials and Behavior Change Communication (BCC) strategies were used for the entire project. While the results of the project are under publication, we found the HSR methodology as a useful tool for health decision makers at all levels - middle and higher level managers, health workers and health-related staff, as well as interested researchers.

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**[K S Karnic](#), Independent Consultant, Bangalore**

Mid day meal programme although provides food security to lakhs of children across the country. But the people involved in implementation do not have the knowledge on the objectives of the programme. No effort has been made to sensitize the personnel involved in implementation about the importance of nutrition in mid meal programme. Neither any effort made to supply such produce containing important nutrients in reasonable quantity. Supply of Vegetables and fruits at least twice or thrice week would go a long way in achieving the nutritional security as well. Provision for local purchase of Fruits and vegetables grown by local farmers would as well encourage the locals to involve in mid day meal programme.

Once the locals are involved the aims of the programme could be achieved without much hassles.

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**O P Rupela, ICRISAT, Hyderabad**

I wish to address queries raised by Biplab Nandi. As I understand he is looking for evidences that agriculture sector can indeed contribute to improving nutrition (Food) security. My response follows.

Food is a matter of choice. Non-vegetarian diet is not essential for a healthy body. All the nutrients needed for growth and health of a person are available in a vegetarian diet. Majority people in developing countries, at least of Asia, depend on crops grown by farmers. Evidences suggest that food items produced using alternative sources of crop nutrients (i.e. without fertilizers e.g. by organic farming practices) foods were more nutritious than those produced conventionally (Worthington 2001). A copy of the paper by Worthington is also provided at [http://km.fao.org/fsn/resources/fsn\\_viewresdet.html?r=333](http://km.fao.org/fsn/resources/fsn_viewresdet.html?r=333) for perusal of all interested. In addition, I am referring to another link [http://km.fao.org/fileadmin/user\\_upload/fsn/docs/OF%20nutrit\\_ion%20lit.doc](http://km.fao.org/fileadmin/user_upload/fsn/docs/OF%20nutrit_ion%20lit.doc) which lists about 25 more publications in scientific journals that will strengthen this point further. Food produced using organic farming practices generally had more of vitamins, minerals and less of nitrates than those grown conventionally. This aspect therefore contributes to the nutrition security of a nation and equally to its food security.

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**George Kent, University of Hawai'i, United States of America**

Vanisha Nambiar describes operational problems that are encountered in many different kinds of nutrition programs. It may be possible to cut through them by recognizing the roles of the rights holders and duty bearers more explicitly.

By adapting the Health Systems Approach that is already employed, imagine that it was possible for students themselves, and their parents, to know the students iron, vitamin A, and iodine status, and to know when they were deficient in any of these nutrients. Imagine that students had clear rights to have adequate levels of iron, vitamin A, and iodine.

Imagine that the Mid Day Meals program were assigned specific legal obligations for remedying deficiencies in these nutrients. Imagine further that the students and their parents had specific mechanisms through which they could complain when their rights were not realized, and when the Mid Day Meals program did not carry out its duties.

I have described an application of these ideas in ICDS and Right to Food, *Economic and Political Weekly*. Vol. 41, No. 45 (November 11, 2006). <http://www2.hawaii.edu/~kent/ICDS%20and%20Right%20to%20Food.pdf> (PDF, Size: 107 KB). They could be adapted to the Mid Day Meals program.

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**Judith Appleton, Independent Consultant**

First, do review the work done in East Africa in the 80's, funded by SIDA. For example in Zambia, where growth monitoring, surveillance, supplementation, weaning food preparation et al were specialities of some of the students at the NRDC (National Rural Development College), where they shared courses with others aiming for jobs in agriculture and other rural development roles. Those with the nutrition focus were employed as district nutritionists, and in their roles were well-placed to work out local initiatives coordinating with their colleagues in health, agriculture and education, with whom they shared a training background. The idea was good, but implementation was eroded as the Zambian economy collapsed.

Secondly, when I was asked to work on nutrition policy for Sudan, I reviewed a disappointingly large number of national policies which were little more than checklists with no internal priorities

or mapping of implementation. A policy which is not specific to the country or area in question is only going to gather dust.

In Sudan I worked with national consultants to tease out national and many local issues beyond the agriculture-health-education triad. In addition to identifying work required in those sectors, the priorities, and who could or would be needed to do it, we added many others in the strategies we worked through, assigning key roles also to the media, and to the food industry. Despite objections from the emergencies caucus, we categorised the crises in Darfur, Kassala and elsewhere as failures of a system which should be protecting the poor in the ways described in the main policy, and outlined further political and peace steps to be taken alongside extra support for those populations.

I am happy to share my draft of the full policy and strategy document. In Sudan only selections from it have been carved out for use by the current regime. You can write to me at [judith.appleton@zen.co.uk](mailto:judith.appleton@zen.co.uk)

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**Nagesh Tekale, Navdrushti, Mumbai**

I do agree that mid meal programme play a critical role in uplifting the nutritional status, learning abilities and IQ of a school going child along with health protection. I also agree that there is non-availability of nutritional experts the mid meal programme carried by government. In tribal belts where I am working on nutritional aspects of malnourished tribal children is simply monotonous, rich in carbohydrates that to of inferior qualities. The importance is given only to quantity and not to quality. In most of the schools located in interior parts, such diet is usually rejected and becomes the waste of money. I have done several experiments to make the mid meal programme popular which includes fermented food rich in minerals and vitamins, Incorporation of locally grown leafy vegetables, modified nutritional recipe from locally available food grains etc. First time we motivated local schools (Ashram schools) to develop nutrition garden with the help of students itself and produce was utilized for mid meal programme. We also encouraged some tribal families holding irrigated land to grow dark green leafy vegetables and fruits and divert this produce to mid meal programme under entrepreneurship. The entire programme is in progress under women self help group also. The mid day meal programme can be a grand success provided quality of meal is maintained and this can be achieved by supporting the women SHG to grow vegetables and fruits.

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**B. P. Gangadhara Swamy, Christian Children's Fund (CCF-India), Raichur**

A year back, I had an opportunity to work in cluster of villages in Chamarajnagar and Mysore District of Karnataka. During that time, I was regularly interacting with students of different classes and teachers.

Before implementation of the midday meal program, in most villages, people from lower income group used to go for labour work in the early morning hours and were eating whatever left in the previous night along with their children, (Most of labour families do cooking in the evening time, when they are back from work). They used give some money (1 or 2 rupees) to their children to take something available in the nearby shops around their school in the afternoon. The children were buying fried grams or rice flakes and were eating it. Some people even didn't give anything to their children. During that time children used to starve in the afternoon or drinking only water. Most of children were supposed to travel 2-3 Kms back to their villages in empty stomach and in very tired condition.

Most of children from these categories shared that now

- Now they are getting food and feeling better

- Now they are feeling energetic in the afternoon classes and now they are able concentrate on to teachers' lessons in the class.
- Health conditions of most of the children are improved.
- Some children are telling to other drop out children to attend the classes as now they are getting food in the school.

Hence, it is really a successful program to address the food security of rural area. Suggestions for the improvement of midday meal program

- Most of teachers are spending their time in the meal preparation, so separate staff should be appointed for food preparation and management.
- Introducing quality instant foods, this will take less time for preparation.
- Ensuring quality food with more seasonal vegetables and fruits.
- Now they are depending on LPG for fuel, alternative arrangement like solar cooker or any environment friendly methods to cook food.
- Collective cooking for nearby schools with limited human resource.
- A study can be taken to assess the impacts on the performance of children in school and to know their health status (with the support of any donor agency)

**Deeksha Sharma, Aradhana Srivastava and Vani Sethi, Urban Health Resource Centre, New Delhi**

More than half of the under-five children suffer from chronic undernutrition (Stunting):

Apparent urban prosperity and usage of indicators providing data for the urban average and not specific to the urban poor has masked the poor health conditions of India's swelling urban poor population, which comprise atleast one-third of urban India. In reality the urban poor are perhaps at an equal disadvantage compared to their rural poor counterparts and much worse than their wealthy urban neighbours in terms of food insecurity and undernutrition. For instance, as per a NFHS-3 (2005-06) re-analysis Stunting in under-fives, a result of chronic and long-term dietary deprivation and frequent infections in childhood, is much higher amongst urban poor under-fives compared to urban-non-poor (54.2% vs. 33.2%) and 4 percentage points higher than the rural average (50.7%) (<http://uhrc.in/name-CmodsDownload-index-req-viewsingledownload-lid-84.html>)

**Urban Food insecurity is multifactorial:**

1. Due to long delays in updating official slum lists many slums often remain unlisted/unrecognized. Being unrecognized they are not even entitled to even basic health and nutrition services
2. Irregular incomes leading to irregular food consumption.
3. Frequent episodes of infections due to poor living conditions, poor hygiene and sanitation, and air and water pollution.
4. Poor coverage of PDS and ICDS in slums due to rampant corruption and lack of awareness among the poor. In Agra, for example, a survey of 513 slums with 90,000 population showed that these slums were served by only 95 Anganwadi Centres under ICDS, leaving large slum clusters outside the scheme coverage (Agarwal S, Taneja S. All Slums are Not Equal: Child Health Conditions among the Urban Poor. Indian Pediatr 2005; 42:233-44) (<http://medind.nic.in/ibv/t05/i3/ibvt05i3p233.pdf> - PDF, Size: 113 KB)

**Some suggestions to improve the urban food security scenario:-**

1. *Municipalities to play a pivotal role in locating vulnerable slum pockets* through mapping and implementation of food security schemes. Mapping of existing fair price shops and ICDS centres will help in ensuring equitable spatial distribution of such facilities. Municipalities can allocate locations for setting up new fair price shops in vulnerable slums devoid of these facilities. Alternatively mobile fair price shops can be explored.

2. *Formation of city-level monitoring and review committees* to ensure optimal functioning of PDS.
  3. *Formation of ward coordination committees*, involving all stakeholders (elected representatives, civil society, with special preference to genuine representatives of slum poor including women). Similar role can also be performed by Area Sabhas (part of urban reforms mandated under Jawaharlal Nehru National Urban Renewal Mission These teams/committees can undertake the following tasks:
    - a. Ensure identification and inclusion of most vulnerable groups as beneficiaries (Ration cards/PDS cards).
    - b. Assist the poor in accessing their entitlements (maintaining copy of ration cards, filing RTI applications in case of irregularities).
  4. *Advocate for locally/ culturally compatible food grains* to be included in the existing list of food grains available under PDS.
  5. *Slum-level SHGs and community groups to be encouraged* and trained to establish and manage fair price shops, and assist and aid the ICDS workers to promote appropriate dietary practices at household and community-level.
  6. *Facilitating skill upgradation, training, linkages with potential employers and access to fair credit.*
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**Susanta Roy, Chief Consultant-National Horticulture Mission, New Delhi**

The topic of discussion is very important and needs urgent attention. It has been rightly pointed out that a little attention is given to harmonizing relevant sector policies with the food security and nutrition policy by mainstreaming food and nutrition security in local level development plans. Herewith I am expressing my views.

Horticulture is an important segment of the agriculture sector. The production of horticulture produce will have significance only when they reach the consumer in good condition and at a reasonable price. Fruits and vegetables play a significant role in our daily diet. A considerable amount of these nutritious fruits and vegetables produced in developing countries is lost due to improper post harvest operations and lack of infrastructure facilities in post harvest management; as a result there is a considerable gap between gross production and net availability.

Post harvest loss prevention is essential to make available more fruits and vegetable from the existing level of production. The success of production lies in the proper distribution of the produce and its subsequent utilization by the consumer. In this process nothing should go waste i.e. 100% utilization of the production in one form or the other should be the motto. Therefore we should adopt and promote Integrated Post Harvest Management (IPHM), which can provide adequate income enhancement to remove poverty as well as food and nutritional security. In addition this can bring out symbiotic effect between rural and urban community.

I am citing part of my emeritus scientist's project work on integrated post harvest management (IPHM) of horticultural crops. Cauliflower produces about 60% leafy parts and 40% edible curd; leaves that go as waste are found to be rich in carotene and hence are a good source of vitamin-A in addition to minerals and dietary fibre. This could be utilized as a value-added product such as food for human being and feed for cattle. The present practice of transporting cauliflower results in shipment of 60% inedible parts, which ultimately end up as city garbage. By adopting the technique of primary/minimal processing the inedible parts can be removed before sending the cauliflower to city markets in 100% edible form. Cauliflower leaves contain a very thick midrib (stem). In a laboratory experiment the leafy portion was separated from the stem, blanched in boiling water before drying. Finally dried leaves were converted into cauliflower leaf powder. This is a potential source of fortification that could solve the acute problem of vitamin-A

deficiency. Wheat flour fortified with cauliflower leaf powder can be supplied through public distribution system for combating blindness in the country. Similarly left out stems could be dried and used as animal feed in time of shortage or crisis.

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**K V Peter, World Noni Research Foundations, Chennai**

Insurance against drastic fall in prices and damage due to biotic factors is realised by farmers of high humid tropics by multiple cropping. Price of agricultural commodity is a critical factor to the farmers more so their livelihood depends on farming only. High production without remunerative price has no meaning to them. It may benefit the urban consumer as they get agricultural commodity at throwaway prices. The multiple cropping system so prevalent in major parts of Kerala, Tamil Nadu and Karnataka and also in North East is a case for study. In an acre of land the farmer has perennials like coconut, arecanut, blackpepper, ginger and turmeric, vegetables and tubers on the ground layer. They also maintain a few poultry birds both for egg and meat, one or two goat for milk and cash in need, ornamental birds for happiness and clean air. The system insures against sudden fall in price of one or two commodities. The disadvantage of lack of scale to harvest the benefit of value addition can be sorted out by collective farming. Collective farming was envisioned by Communists while land reforms were brought out by the historic land reform act. Food security without financial security to producer farmer is an urban clique to deliberate over. We have to pay the price for the urban luxuries created and the outflow of farm workers to the cities in search of mystic comforts ultimately ending in urban slums so dehumanising and demeaning. Let us not disturb existing farm lands in the name of development in what ever names it appears.

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**Maroti Upare, Independent Consultant, Mumbai (response 2)**

Undernutrition and malnutrition is more economic issue and a cause of poverty. This issue need to be addressed under poverty reduction programme of Millennium Development Goals.

The policy focus is more on providing infrastructure to urban poor which is priority since they are migrant from rural area. In this connection the programme `Wada Pava`launched earlier in Mumbai was good beginning but it did not survive due to lacunae in execution. What is needed is committed organisation to implement such programmes.

The involvement of Anganwadi staff is not feasible solution since the objective of formation of Anganwadi will be deviated. They should be supported by SHGs in the area which will help to provide employment to women and a new cost effective system can be established.

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**K S Karnic, Independent Consultant, Bangalore**

The rich experiences shared by members are really enlightening. Although mid day meal programme has been largely successful in providing food security, not much importance is attached to the nutritional aspect of food. This is because:

- personnel involved in implementation have not been sensitized about providing nutritious mid day meal
- food articles are supplied either on contract or purchased depending the availability of funds
- interference by external forces

Involvement of locals and parents, providing funds and permitting local procurement of vegetables/fruits and frequent sensitization workshops would be helpful in enhancing the nutritional quality of mid day meals.

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**Prema Ramachandran, Nutrition Foundation of India, New Delhi**

All countries in the world face problems in mainstreaming food and nutrition security in overarching national policy frameworks covering economic growth, poverty reduction, food production, distribution and health. Food security and nutrition security are generally viewed as the responsibilities of agriculture and health sectors respectively. For too long policy makers had succumbed to the temptation of regarding agriculture as an economic activity and focusing primarily on improving the livelihood of the farming community. Concerns of the nutrition and health sectors on choices food stuffs produced, processed and provided to the population were often not well articulated and even when articulated did not receive adequate attention.

It is only in the last decade that there has been a growing awareness in India that

- mere self sufficiency in food production, improvement in per capita income and reduction in poverty ratio does not result in steep reduction in undernutrition and micronutrient deficiencies
- increasing incomes and urbanization may result in changes in lifestyle, dietary habits and steep reduction in physical activity and emergence of overnutrition.

In India over the last decade specific efforts were made to break these barriers and sensitise

- the agriculture sector about the nutritional needs of the population e.g. need to produce more pulses, vegetables and fruits,
- government and entrepreneurs to invest in food processing, storage and transport of perishable commodities, so that the vegetables are available at affordable cost through out the year
- the people that sustainable prevention of micronutrient deficiencies is through food based approach and balanced meal and adequate exercise hold the key for prevention of overnutrition and associated health hazards.

India's Tenth Five Year Plan clearly articulated these with the statement: "There will be focused and comprehensive interventions aimed at improving the nutritional and health status of the individuals.

There will be a paradigm shift from:

- household food security and freedom from hunger to *nutrition security for the family and the individual;*
- untargeted food supplementation to *screening of all the persons from vulnerable groups, identification of those with various grades of under-nutrition and appropriate management;*
- lack of focused interventions on the prevention of over-nutrition to *the promotion of appropriate lifestyles and dietary intakes for the prevention and management of over-nutrition and obesity.*

The Plan document then articulated the strategies and intervention programmes by all concerned sectors ranging from agriculture, public distribution system, food supplementation programmes and health and nutrition intervention (<http://planningcommission.nic.in/plans/planrel/fiveyr/welcome.html>)

There has been a positive response to this policy pronouncement during the last five years. The National Horticultural Mission and National Food Security Mission have been set up to address the production side. The Ministry of Health and Family Welfare has initiated the National Rural Health Mission and its urban counterpart which incorporate nutrition as one of the elements of essential primary health care. The Ministry of Women and Child Development has emphasized on convergence between the health care and food supplementation programmes to vulnerable groups. Convergence between Mid Day Meal programme of the Department of Schools and

School health programmes under the Department of Health is being attempted in many states. Civil society organizations and local self government (Panchayati Raj) institutions are increasingly involved in area specific planning of the interventions, convergence between related sectors and monitoring implementation of the programmes aimed at improving health and nutritional status of vulnerable groups.

Given the vast and varied subcontinent, there are substantial differences in progress between states and even between districts in the large states. The states segments of population desperately needing effective programmes are often farthest away and lack access. However it is hoped that the with policy directions and increasing convergence in programme implementation, the progress to wards food and nutrition security will get accelerated .

Some of the details of the programmes and progress can be accessed in the [http://www.nutritionfoundationofindia.res.in/publication\\_others.asp](http://www.nutritionfoundationofindia.res.in/publication_others.asp)

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### **Raj Ganguly, Independent Consultant, New Delhi**

Let us have a quick look into the agriculture situation of India. (Source data-[http://www.apeda.com/apedawebsite/six\\_head\\_product/FFV.htm](http://www.apeda.com/apedawebsite/six_head_product/FFV.htm))

#### One side of Agricultural situation in India -

- India is the fruit and vegetable basket of the world. India is the second largest producer of Vegetables that account about 16 per cent of the world production. India ranks fifth in the world in cropped area under cultivation and production of potatoes. India produces 41% of world's mangoes, 23% bananas, 24% cashew nuts, 36% green peas and 10% onion. India is 2<sup>nd</sup> largest onion growing country in the world.
- India is a world leader in the production of Dairy Animal Products.
- India retained its rank as the largest milk producer in the world with a total production of 100 million tonnes.
- India is the second largest rice producer in the world. India is today the second largest wheat producer in the whole world. India has the largest area in the world under wheat.

#### The other side of Agricultural situation in India -

- India is one of the leading exporter of fresh table grapes to the global market. India's Export of Fresh Fruits has increased from Rs. 225.67 Crores (USD Million 50.98). In 2005-06 to 256.43 Crores (USD Million 56.88) in 2006-07. India exported 79,060.88 MT of fresh mangoes with the value of Rs. 141.93 Crores (USD Million 31.48) in 2006-07. India's Export of Walnut has Increased from Rs. 114.47 Crores (USD Million 25.86) in 2005-06 to Rs. 118.03 Crores (USD Million 36.18) in 2006-07. India's export of other vegetable has increased from Rs. 267.69 Crores (USD Million 60.47) in 2005-06 to Rs. 430.02 Crores (USD Million 95.39) in 2006-07. India's Export of Onion has increased from Rs. 708.15 Crores (USD Million 159.96) in 2005-06 to Rs.1163.30 Crores (USD Million 258.05) in 2006-07.
- India's exports of Fresh Fruit and Vegetable has increased from Rs. 1658.72 Crores (USD Million 374.68) in 2005-06 to Rs. 2411.66 Crores (USD Million 534.97) in 2006-07. India's exports of Processed Fruit and Vegetable has increased from Rs. 2454.61 Crores (USD Million 554.46) in 2005-06 to Rs. 2502.28 Crores (USD Million 555.07) in 2006-07.
- India which is the second largest rice producer in the world, has exported 51.02 lakh tons of non-basmati rice till January 2008..India's export of non basmati rice has increased from Rs. 3178.16 Crores (USD Million 717.90) in 2005-06 to Rs. 4243.07 Crores (USD Million 941.23) in 2006-07. India is also a major exporter of Wheat in the world.
- Pulses are sometimes called "poor man's meat". India's Export of Pulses has increased from Rs. 589.85 Crores (USD Million 131.46) in 2004-05 to Rs. 770.64 Crores (USD Million 170.95) in 2006-07. India's export of other cereals like Bajra, Barley, Buck Wheat, Canary Seed, Grain

Sorghum, Jowar, Maize Seed, Oats, Other Cereals, Other Maize, Ragi and rye etc has increased from Rs. 453.82 Crores (USD Million 102.51) in 2005-06 to Rs. 599.25 Crores (USD Million 132.93) in 2006-07.

- India's exports of Animal products 1257261.07 MT with the value of Rs. 4063.03 Crores (USD Million 901.29) in 2006-07.

#### The hard facts

- 900 million Indians survive on less than \$2 a day (Also 400 million live on <\$1)
- 43% of children under five are under nourished. (compared to 29% in Sub-Saharan Africa)

Repeatedly we focus productivity, production levels, research and extension and what not. Then we focus exports and then followed by food security, nutrition security and poverty alleviation.

To me "Poverty & Food security" is a 'chicken and egg' story and the vicious circle is difficult to be broken, unless otherwise it is approached with an integrated, holistic and sustainable solution framework. It is beyond any doubt that 'Agriculture and Animal Husbandry' assumes the key role for ensuring Food and Nutrition security, noting that about two thirds of world's poor live in rural areas. However, the agriculture productivity and increased production can only ensure Food security of the country and not that at individual or more precisely household level, which assumes a complex function of various socio-economic-environment factors. Poverty is the main hurdle. With money in hand food will be not far away. Yes nutrition security is a challenge which may require more clinical and systematic approach and as rightly being discussed should go hand in hand with food security rather than taking a back seat.

Policy focus to agriculture is important as it creates employment, wealth in rural areas and activates subsidiary engines of economic growth. But the access to food and good nutrition is largely governed by socio-economic factors and thus needs an integrated approach to address unemployment, targeting alternate and sustainable livelihood and economic empowerment. Rural development schemes and policies, micro-enterprises, rural agro processing units, employment generation schemes (NREGS of GoI) etc., are all vital links to ensure food security at household level in rural areas. This approach together with economical agricultural productivity helps checks migration of rural population to urban areas thus helping to mitigate urban food security challenges to certain extent. Affordability to food by 'Below Poverty Line' (BPL) households is taken care by 'Public Distribution System'. However, wider coverage, distribution efficiency, quality and safety, non-discrimination and controlling pilferage and corruption are immediate challenges towards an effective PDS. Mid Day Meal scheme is also a significant step towards partial fulfilment of nutrition security of school going children. The role played by religious institutions towards food security also cannot be ignored in India. The Gurudwaras, temples and mosques take a very silent steps to provide food to millions on daily basis and often during natural disasters.

Subsistence farming system, rainfed farming system, small and marginal farmers, geographical remoteness and access to market are some critical situations in which agriculture and livestock based intervention can ensure food/nutrition security on one hand and mitigate poverty levels on the other. And for that watershed based approach to agri-horti-sylvi-pastoral systems well integrated with livestock intervention can ensure food and nutrition security. However this can impact a limited segment of poor who have cultivable lands i.e. marginal farmers.

For the greater population segment, which is the major challenge, either in rural or urban areas, I believe for food/nutrition security we need to focus poverty and not agriculture. Because we have many No.1 positions, in our claim to food security for nation, keeping half of our children malnourished.

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**George Kent, Department of Political Science, University of Hawai'i, USA** (*response2*)

Some of you might be interested in my essay on 'Designing Rights-Based School Feeding Programs' available at <http://www2.hawaii.edu/~kent/Designing%20Revision%202.doc> The main idea is that school meal programs can be strengthened by insisting that the children have specific clear rights in relation to the meals. Others must have clearly defined obligations to ensure that those rights are realized, and they must be held accountable for carrying out their obligations.

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***Many thanks to all who contributed to this query!***

*If you have further information to share on this topic, please send it to Solution Exchange for the Food and Nutrition Security Community in India at [se-food@solutionexchange-un.net.in](mailto:se-food@solutionexchange-un.net.in) with the subject heading "Re: [se-food] DISCUSSION: Mainstreaming Food and Nutrition Security. Additional Reply."*

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