Chapter I

Major challenges in Agriculture and Food Security

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Addressing the Major Challenges in Agriculture and Food Security

I. Production Planning and Remunerative Marketing

Our agriculture is increasingly becoming a gamble in the market. Production goes up when farmers are assured of a remunerative market. This is clear from our experience in commodities like wheat, rice, eggs and milk. The present pathways of ensuring minimum support price though FCI or other Government agencies (like Maharashtra’s monopoly cotton procurement) are proving to be economically unsustainable, although they were important public policy instruments at one time. The following two steps are suggested to place marketing arrangements on a sustainable pathway:

A. Restructuring and Retooling State Land Use Board

Land use decisions are also water use decisions. State Land Use Boards exist but they are not equipped to provide proactive advice to farm families on land use planning. Such proactive advice (as is being given in USA, which even operates a land set aside scheme) involves the integration of data from three sources:

♦ Meteorological information (based on medium and long term forecasts)
♦ Marketing information (potential demand in domestic and external markets)
♦ Management information, taking into account soil characteristics, irrigation water availability and agro-ecological conditions

The reorganised State Land Use Board supported by a consortium of Technical agencies will serve as a Virtual College in each State using a hub and spokes model. The hub will be the headquarters of the Board and the spokes will represent the agro-climatic and farming systems zones. (Annexures 1 and 2) Fortunately, we have the needed institutional structures both at the Central and State levels to undertake the task of reorienting land and water use on the basis of marketing opportunities. The Virtual College for Land and Water Use planning could be linked to a grid of community Radios.

Our institutional strengths include IMD and its various units, ISRO and its various Remote sensing and Natural Resources Management units, Information and Communication Institutions, Central Water Commission, Central and State Ground Water Boards, National Bureau of Soil Survey and Land Use Planning APEDA,
NAFED, NDDB, NHDB etc.

**B. State Level Grid of Community Food Banks**

A decentralised system of procurement and storage is ideal for reducing transaction and transportation costs, as well as for operating entitlements schemes relating to local level food security and preventing both distress sales and panic purchases (during drought and other natural calamities). Such Community Food Banks can be operated by local self-help Groups and can undertake the following responsibilities:

1. Ensuring that entitlements reach the unreached (this can be implemented through a Food Cheque system, which can be honoured by the Food Bank)
2. Operating Food for Sustainable Development schemes
3. Operating Food for Healthy Children programmes specially designed for pregnant and nursing mothers and infants (0 to 2 years)
4. Dealing with emergency relief operations (drought, floods, etc)

A State Level Grid of Community Food Banks supported by projects like the Rural Godown Scheme, is the best way of ensuring both freedom from endemic hunger and low transaction cost storage and distribution. Community Food Banks with also help to enlarge our food security basket by encouraging the continued cultivation of nutritious millets, pulses, tubers, etc (such as *ragi*, *bajra*, pulses, etc.). Such crops are also better adapted ecologically to dry farming conditions. This will help in spreading the cultivation of high value but low water requiring crops.

A beginning in setting up Community Food Banks is *already being made* in tribal areas with support from the Government of India.

**C. Livestock and Livelihoods**

I. There is also need for Community Feed and Fodder Banks to enable landless labour families to take to animal husbandry by providing good quality but low cost fodder and feed. Livestock and livelihoods are closely related in our country and there is greater equity in the ownership of livestock, as compared to land. Such Banks can also be operated by local self-help groups. Such Feed Banks can use locally grown Quality Protein Maize (QPM) soybean and millets.

II. Achieving Productivity, Quality and Income Revolutions in Farming

**A. Inter-Agency Action Council for Rural Technologies**

All these areas of progress are inter-related. The untapped yield reservoir is high in most farming systems. The inefficient use of inputs, particularly water, nutrients and pesticides, is increasing the cost of cultivation, without any corresponding yield dividend. We need to find institutional solutions to these problems. What small farmers need are not so much subsidies but efficient services. They need the advantages of scale in the production and post harvest phases of farming. The
following, institutional devices announced in earlier budgets, if implemented properly will make valuable contributions in the area of achieving the triple goals of more yield per units of land and water, more livelihoods and more income.

- Agri-clinics
- Agri-business centers
- Rurban Food Parks

Agri-clinics, agri-business centres and Rurban Food Parks linking the rural producers and urban consumers can make a major contribution to elevating and stabilising crop yields, provided we enlarge the space for remunerative self-employment. We need a New Deal for the Self-employed Youth engaged in farm and non-farm enterprises. The New Deal can consist of the following components

- Venture Capital
- Infra-structure (like rural roads, cold chain, etc.)
- Technological umbilical cord or support system

For providing the technological umbilical cord, we need to set up a State level Inter-Agency Action Council for Rural Technologies. Such an Inter-Agency Action Council's principal Mission should be to assist in bridging the ever widening gap between academic know how and field level do how. The Inter-Agency Action Council could be formed jointly by scientific institutions and Universities in the State. If all national agencies and State Departments cooperate, we can leapfrog in our quest for achieving productivity, quality and income revolutions in farming. The field level units through which such a Council can promote the technological upgrading of farm operations will be Agri-clinics and Agri-business centres operated by Farm, Veterinary, Home Science, Fishery, Forestry and Commerce graduates.

B. Integrated Mission for Farmers’ Well-being

Besides providing the much needed horizontal linkages among the vertically structured programmes of major scientific agencies, we also need similar horizontal linkages among various Technology Missions, such as those dealing with oilseeds, pulses, maize, cotton, etc. Inspite of the existence of such Missions which are supposed to provide a holistic and end to end service to farmers, imports of oilseeds and pulses are going up. This is disastrous to the future of dryland farming in our country, since pulses and oilseeds along with horticulture and animal husbandry are the principal catalysts of agrarian prosperity in semi-arid, and rainfed areas.

We need to integrate commodity centred Technology Missions horizontally with the National Water Harvesting and Watershed Development Mission. Their working in isolation is both costly and unproductive. The integrated structure can be termed “Maharashtra Mission for Farmers’ Well-being” to emphasise that farmers’ economic survival and well-being should be the bottom line of public policies in the field of agriculture.
The proposed **Integrated Mission for Farmers’ Well-being** should be functionally linked to the restructured State Land Use Boards, so that principles of ecology and economics guide the work of this integrated Mission.

III. Generating more Jobs and Sustainable Livelihoods in Rural Areas

More jobs/livelihood opportunities need to be created in the rural non-farm sector and in the rural-urban linkage sector. The non-farm employment should be based on the goods and services for which there is market demand. Both the Agri Business Centres and Food Park Programmes can play a critical role in this area. The Small Farmers Agri-business Consortium (SFAC) should also help in linking the primary producers with markets, and where appropriate, by making arrangements for contract cultivation. APEDA can help in crop planning for exports, while NHDB should intensify its work in the area of providing post-harvest infrastructure for fruits, vegetables and flowers.

IV. Agro-Aqua Farms along the Coastal Areas

There is great opportunity in coastal areas for promoting integrated agriculture cum aquaculture farms. Planting of mangroves, *salicornia*, *cosuarina*, cashewnut, and others suitable tree species together with inter-cropping with *Arhar* (pigeon pea) and prawn farming will help in improving both the ecological security of coastal areas and the livelihood security of Coastal communities. Over 20% of India’s population live near coastal areas. Integrated land-sea management is essential for their well-being.

V. Increasing Agricultural Exports: India as a Major Farm Power

Thanks to the efforts of the Govt. of India, the on-going negotiations in WTO would hopefully lead to a reduction in all forms of export subsidies as well as trade distorting domestic support being given by developed countries. If these hopes fructify, we should gain greater market access for our farm products. We will be able to take advantage of new opportunities only if greater attention is paid to cost, quality and reliability of supply. The following steps are needed urgently.

1. Sanitary and phytosanitary measures need considerable strengthening. There is need for more phytosanitary and aflatoxin testing laboratories for different agricultural products. Products conforming to ASTA standards are needed for US and EU markets.
2. Market information centres need to be established at Rotterdam, Dubai, Singapore, Tokyo, etc. They should supply advanced information on market trends and demands. This can be done by APEDA, for which it needs a professional management structure.
3. The Agri-business centres should be empowered to provide single window service in relation to input supply and market information.
4. There is need to establish internationally acceptable certification centres for products emerging from organic farming.
5. The National Horticulture Development Board (NDDB) should function like NDDB and provide a wide range of services to farmers, such as seeds of varieties suitable for processing and which satisfy the quality requirements of importing countries. Its management should be professionalised. It can begin a process of according accreditation to organic horticultural producers.

6. An inter-Agency Agricultural Exports Board consisting of representation of APEDA, NHDB, NDDB, NAFED, CII, FICCI, ASSOCHAM and other major agricultural export agencies could be formed in the Ministry of Agriculture to continuously monitor progress and help in removing bottlenecks, Such a Board should make special efforts to spread quality consciousness in the country and an understanding of Codex alimentarius standards.

7. Special priority should be given to creating the necessary infrastructure immediately in the case of export of farm products, where we have a comparative advantage. In addition to our traditional export commodities like plantation crops and marine products the following areas need attention.
   a. Rice — Organic and Medicinal rices in addition to Basmati rice
   b. Millets and Sorghum: Nutritious Millets like Ragi.
   c. Organic fruits and vegetables
   d. Herbal Medicines
   e. Processed Foods
   f. Biopesticides and bio-fertilisers

8. SFAC can help in organising Small Farmers’ Agri export Estates for giving the power of scale to small scale producers at the production and post-harvest stages. Members of such Estates will have to be assisted in areas like mycotoxin testing and quality control, implements, pest management, etc. The basic idea behind Small Farmers Agri Export Estates is to provide expertise and essential centralised services (including e-commerce) to support deccentralised production
Annexure 1

Proactive Advice on Land use
( Land use decisions are also Water use decisions )

State Land Use Board
( to be located in an Agriculture University )

Integrated advice

- Meteorological Factors
- Ecological Factors
- Marketing Factors ( Home & external markets )

The Land Use Board through a virtual collage should give proactive advice on the choice of crops and farming systems, so as to achieve a match between demand and supply in farm commodities and to ensure that the most efficient crops are grown in different agro-climatic and agro-ecological regions.
Restructuring the State Land Use Board in Tamil Nadu

Proactive Advice on Land and Water are

SLUB (Virtual Collage)

Agroecological Zone 1 (Irrigated)
Agroecological Zone 2 (Semi-arid)
Agroecological Zone 3 (Dry)
Agroecological Zone 4 (Hill)
Agroecological Zone 5 (Coastal)

SLUB will function as the hub of a Virtual Collage for Land and Water use
Annexure III

Technological and Management Upgrading of Small Farm Agriculture

I. Support group

NABARD (existing)
SFAC (existing)
Inter-agency Action Council for Rural Technologies and its Virtual College (Proposed)
Technology Mission for Farmers’ Well-being (Proposed)

II. Instruments

A. Agri-clinics  Self-help Groups  B. Agri-business Centres

- Soil Health (Particularly micronutrients)
- Wasteland development
- Water harvesting and saving
- Efficient Water use
- **Pest proofing of Farming Systems** (Integrated pest management)
- **Disease management in animals**
- Crop and animal nutrition (conventional and non-conventional)
- Seed and feed for inland and coastal

- Harvesting, drying and storage (Rural Godowns, Save Grain scheme)
- Processing and Value addition
- Biomass use
- Packaging, transport and marketing special arrangements for perishable commodities
- Linking urban chain stores with rural producers
- Quality control; testing for aflatoxins