Priorities for Value Addition and Processing in Indian Agriculture

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Overview of food processing in India

Indian agriculture accounts for 14% of total GDP engaging 65% of population. Rural labours are now shifting to non - agricultural work which has heightened the labour market of agriculture putting a pressure for increased farm wages vis a vis increase in cost of production. The educated young mass is less likely to stay in farming leading to formation of feminized agriculture population. Declining profit margins and difficulties in marketing are issues facing challenges to Indian agriculture now a days. The gross investment cost per hectare is reducing due to price rise and long-time static subsidy on crucial inputs. The General Agreement on Trade and Tariffs has given impetus to the process of liberalizing trade in agricultural products, which will eventually lead to more competition and a movement towards world prices. The effects of these measures have been offset for the immediate future by policy changes in relation to land use and management of the environment, affecting and restricting land for agricultural purposes. Farmers, aware of these developments and concerned about their future survival, have been seeking new enterprises to maintain or increase their income. Therefore the recent threat to Indian agriculture is viability of farm enterprise. Farmers are now diversifying into new or alternative uses for their land, buildings and other resources.

Twelfth five year plan was dedicated to nation with a view to faster, more inclusive and sustainable growth for the period 2012-2017. Planned growth targets present challenges as global economy is going through crises of problems of debt. The first year of 12th plan has shown only 5% growth rate. This short term down turn in growth calls for immediate corrective actions. The economy need to take inclusive initiatives where services are improved and corruption is curtailed. The current KYC (know your customer) drive of RBI (Reserve bank of India) is one such reformative step for direct cash transfer to beneficiary that may curtail corruption to a great extent but may have multiple +ve or -ve repercussions in Indian economy in long term. But in present time when our current account deficit is rising ever time high largely due to improved export in all sectors of economy it becomes difficult to control international pressure of reducing subsidy . Improved exports could not match with improved import duty as repaying taxes on earned income reduces benefits of business class therefore they apt for secondary corrupt methods of tax evasion or politically forcing government to reduce import duty and other taxes. In complicated global economic scenario we need to increase agriculture production in our country to all time high level, agriculture growth must increase sharply to reduce deficit in growth. We need much faster growth in secondary food processing and manufacturing sector to provide employment to our young and increasingly educated population which has high expectations and aspirations. Agricultural growth along with growth in processing sector will definitely bring more internal growth of economy and generation of employment for youth and women.

Food processing sector is growing in country @ 7.2 % annualy as compared to 3.5 % growth in agriculture recorded in entire 11th plan , investments in this sector are increasing annualy @ 21.66 percent through public private partnership. Government has allocated USD 28 billion for infrastructure development like mega food park scheme, integrated cold chain scheme and abattoirs modernization during 12th plan. This is in addition to USD 18.50 billion allocated to the national mission on food processing,USD 3 billion to strengthen institutions and skill development,USD 2.9 billion for food safety as well as R&D besides USD 7.5 billion for technology up gradation. Food processing industry has attractedForeign Direct Investment worth USD 2.15 billion in April-October in 2013. The average FDI inflow was USD 117 million for 11 years ending financial year 2012 but 401 million inflow in 2013 is a high jump of 2.15 billion over previous year. The FDI increased in relation to expected political upturning due to Election 2014 in India. A major portion of FDI is actually coming from NRI or our business houses operating in International market in other trades. It is expected that if trade policies remain same for future years to come investment in this sector may increase further. Fortune 500 companies in food processing industry are already present and many others are in the pipeline to join through FDI in food processing sector. Besides, domestic giant companies are also entering the field of food processing.

Challenges to Horticulture in Arid Regions

With advance civilization environment has come in to direct focus of man. Man has contributed equally in disturbing and redeveloping the biosphere according to his requirement. In order that natural system of desert largely remains balanced world over, integrated farming system of agriculture is recommended for sustainability of arid and dry region. Horticulture; growing and utilization of fruits and vegetables, is an art of agriculture practiced by mansince time immemorial. The arid zones are characterized by high aridity and low annual average rainfall, with frequent occurrence of drought. The techniques to conserve moisture through various methods of water harvesting is an integral part of good horticulture practices. Local and indigenous fruits and vegetables having deep root system to draw water from deeper layers of soils are suitable for cultivation in arid zones. Many of the fruits and vegetables grow wild in the nature. People collect these wild crops from common property resources and consume after some pre processing. Most of the arid fruits grow in plenty during a particular season but all fruit crops could not be gainfully utilized. Sudden swarm of crop harvest does not give profitable income in the hands of farmers. Cold storage facilities are rarely available in rural areas, therefore farmers are forced to sell their produce in whatever money the middle man offers to him. Due to this pertinent problem farmers are either opting for alternate uses of their land or are not cultivating their farms at all. Both conditions are setting alarms for farm enterprise in India.

Rajasthan produces nearly 716.82 MT of fruits ranging from different varities of citrus fruits 455.59 MT, Guava 74.80 MT, Mango 70.17 MT, Papaya 16.01 MT Pomegranate 5.50 MT, other fruits 94.75 MT. Almost all kinds of fruits are grown in Rajasthan but it accounts for less than one percent of total production of fruits in country. Andhra Pradesh that largely falls in semi arid area contributes largest proportion of fruits (17%) to India. If all horticulture crops like fruits, vegetables, spices, medicinal; and aromatic plants and flowers are combined the yields for 2012-13 were recorded at 2716158 MT in Rajasthan. Area under horticultural crops in Rajasthanaccounts for 1213660 ha out of which 3% is under fruits, 11% is under vegetables, 66.18% is under spice crops, 19.59% is under medicinal plants and 0.23% area is under flower cultivation. Over post few years area of cultivation has increased for Orange, Guava, Kinnow, Pomegranate and Blackberry where as area in Ber, Amla, Papaya and Lemon has either decreased ormarginally remained same. Area under Onion, Tomato, Bittergourd has increased in last three years.

Agriculture in Rajasthan is almost entirely dependent on occurrence of rains.Socio cultural condition of farms are largely governed by poverty and desertification. Low levels of literacy and very less employment opportunities further aggravate farmer’s agony. Non availability of options for alternative employment has left people to live on the vagaries of environment and natural resources. Food processing and value addition to horticultural crops is a promising enterprise for farming community in arid zones, value addition to local fruits and vegetable can enhance financial returns in arid zones. Linkage with central and state supported scheme for rural areas, direct sale of produce in market and creation of strong logistic like roads, transport, cold storage, warehouses and transportation will definitely bring backward flow of money to farming community. A variety of arid fruits can be processed in to variety of value added products that can give high income returns to farming community. Two methods can be adopted for processing fruits (a) manual value addition work (b) machines substituted for man to increase production.

Value Addition Potential of Arid Fruits

Arid Fruits	Value Added Products	Income Profit Margins
Ber	Preserve, candy and squash	40-60%
Kachra	Melosip, traditional drying	60-70%
Ker	Dried fruits, pickle	Up to 80%
Khejri pods	Dried sangri	40-60%
Amla	Jam, candy, preserve, pickle	50%
Bel	Squash	50-60%
Pomgranate	Squash and anardana	40-50%
Carrot	Fresh juice	Up to 200%

Government Schemes for Technology Establishment, Upgradation and Modernization in Food Processing

Ministry of food processing and Industries is the nodal agency for implementing national mission on food processing, establishmentof mega food park and establishment of cold chain, value addition and presentation infrastructure schemes in India.

NMFP (National Mission on Food Processing)

The ministry of food processing &industries took the initiative to implement the NMFP, through separate financial allocation for states so that states can take up relevant projects and avail the opportunities. The objective of NMFP is to decentralize the implementation of the schemes, leading to substantial participation of states and UT. The states Government are empowered to receive the application, sanction and release grant in aid to the eligible beneficiaries. The states can decided location of project and beneficiaries to harness the potential of value addition by using locally grown raw material. The government of 32 states and union territory have started implementing the NMFP during the 12th five year plan. In 2012-13 year 184.685 crore for NMFP were released for preparatory activities (35.625 crore) and advance action plan plus Rs. 149.06 crore for NMFP schemes 2012-13. Chandigarh, Dadra and Nagar Haveli and Daman Diu UT showed in ability to take up NMFP as there is very little scope.

In 2013-14 Rs. 22.25 crore were released to Bihar, Gujrat, Haryana, Karnataka, Kerla, Mahastra and West Bangal. States like Andhra Pradesh, Punjab, Himanchal Pradesh, Rajasthan, Tamilnadu, Chattisgarh, Jammu&Kashmir, Tripura and Uttarakhand have started issuing sanctioned under the scheme. States can set their own priorities like Eastern states may plan for rice milling where as coastal states can go for sea food processing. Central state can setup export unit for fruits while Jammu & Kashmir can explore possibilities of value addition to apples. FDI is permitted for all processed food products to the extent of 100% where as in small and micro enterprise (MSE) FDI is permitted up to 24% only. Large size of domestic market is a trade promoting venture for foreign investors. With a large agriculture sector, abundant livestock and cost competitiveness, India is fast emerging as a sourcing hub for processed foods.

India provides almost unlimited opportunities for foreign investors in the food processing sector. India ranks number one in the production of Milk, Banana, Guava, Mango Buffalomeat andCashew nuts. It ranks number two in the world in the production of Rice, Wheat, Groundnuts, Onions, Peas and Sugarcane. India's large market size of over a billion population, growing middle class and relatively young population create invisible market opportunities for food processors, machinery suppliers and service providers. India has a climate which is suitable for the year round supply of agricultural products. Apart from that, India is strategically placed and closer to the markets in south Asia, the far east, the middle east and Africa that could be a huge production base for the supply of food products. Foreign companies can invest in any area of food chain depending on their expertise and capital available under NMFP.

AllocationsMade to States and Union Territories.

Sl. No.	**States**	**Allocation of GOI Share**		**Funds released**	
		2012-13	**2013-14**	**2012-13**	**2013-14**
1	Uttrakhand, Utter Predesh, Punjab, J&K , HimanchalPredesh, Haryana, Gujarat	77.72	47.98	46.92	4.78
2	Bihar, Chattisgarh, Goa, Jharkhand, Madhya Predesh, Maharashtra	60.83	47.1	45.6	2.29
3	Andhra Predesh, Karnataka, Kerala, Tamil Nadu	41.98	32.97	31.48	10.44
4	Orissa, West Bangel	30.28	15.45	17.75	3.945
5	Rajasthan	14.77	12.06	11.07	0.00
6	North eastern states	32.00	20.00	24.37	0.00
7	**Union Territory I** Andaman and Nicobar , Delhi, Lakshdveed, Pandichere	9.91	5.86	7.42	0.00
8 □	**Union Territory II** Chandigarh, Dadar and Nagar Hawali, Daman and Div	6.82	3.14	0.00	0.00

□ Union Territories refuse for accepting grants.

Mega Food Park Establishment

The scheme of mega food parks aims at providing, a mechanism to link agricultural production to the market by bringing together farmers, processors and retailers so as to assure minimized value addition, minimized wastages, increasing farmers income and creating employment opportunities particularly in rural sector. This scheme is based on cluster approach and envisage a well-definedagro/ horticultural processing zone containing state of the art processing facilities that supports infrastructure and well established supply chain.

The scheme emerges as one time capital grant of 50% of the project cost subject to maximum of 50 crore in general areas and 75% of project cost subject to ceiling of 50 crore in difficult and hill areas. It is proposed to setup one Mega Food Park for a cluster of about 3-4 districts.

Establishment of cold chain, value addition and preservation infrastructure.

The objective of the scheme is to facilitate creation of integrated cold chain and preservation infrastructure facilities without any break from farm gate to customer. The scheme helps in creation of three types of facilities.

1. Minimum processing at the farm gate having facilities like weighing, sorting , grading pre cooling
2. Mobile pre-cooling vans and reefer trucks
3. Distribution hubs having cold atmospheric chambers, multi-purpose cold storage.

Conclusion

The domestic and export demands of horticultural produce has increased over past two decades. The supply side response in production is fairly extraordinary as more and more extension work is increasing on farm and farmers have taken up adoption of modern and improved methods of cultivation.Overall development in country in transport, roads, tele-communication, education etc. has facilitated higher production. Fruit and vegetable production has increased 80 and 69% respectively, from 2001/ 02 to 2011/12. Horticulture has become accessible to small farmers through government support.

The prices of fresh produce are less in comparison to processed fruits suggesting that there exist a higher domestic demand for processed food.Un-processed horticulture produce is sold at higher price in large markets where farmers do not get substantial returns therefore, a need for establishing smaller markets is to be considered at priority. The difference in farm gate price and retail price must be bridged to avoid threats to farming enterprise. Over all there is an expansion in demand of processed food, the benefit of higher demand must percolate to farmers, equally there had been increase in national production and productivity, the benefit of this increment must be percolated to consumer adequately.