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Agri. business Project-An option for diversification (Particular reference to Fruits & Vegetables)

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"There is no sincerer love than love of food"
- George Bernard Shaw

Abstract:
The farmers face tremendous pressure for disposing off their perishable produce particularly when production is high. This results into either wastage of their produce/quality deterioration or lower returns to them. The intermediaries take maximum advantage of this situation. The fertilizer producers enjoy a high degree of credibility among farming community. They also have required infrastructure support & manpower for efficient backend operations. There is a vast potential in agribusiness, particularly, Fruits & Vegetable sector, which could be a "win-win" situation for both farmers as well as fertilizer producers. This paper highlights issues related to horticulture, the key players in the agri. business, Government support and how to develop an agri. business project for sustainable operations.

India is one of the major food producers in the world. The food sector contributes to about 28% of India's GDP. India stands at 1st position in the world for production of cereals, milk, livestock, banana and Mango, 2nd in producing fruits and vegetables and ranks amongst top 5 in producing rice, wheat, groundnut, tea, coffee, tobacco, spices, sugar and oilseeds. India's share in global production of fruits is 10% and vegetables are 13.7%. The current consumption of fruits and vegetables is approx Rs.2 lakh crores at current prices with an estimated growth rate of 11% per annum. The growth rate is higher than cereals and milk and comparable to meet consumption.

STATUS OF HORTICULTURE

The current state of horticulture industry in India is not satisfactory. The average productivity of horticulture produce is about 7 tons/ha compared to 30 tons/ha in many western countries.

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India's share in global fruits and vegetables trade is less than 1%, whereas, only 2% of the horticulture produce in India is processed vis-à-vis more than 40% in other developing countries like Brazil and Malaysia. India's share in global processed food trade is only 1.5%. The first and foremost reason for under developed horticulture industry is high proportion of wastage across the value chain.

Table No. 1:- % wastage in different crops

S.NO.	Crop	% wastage
1	Tomato	30
2	Potato	22
3	Onion	25
4	Cauliflower	49
5	Cabbage	22
6	Papaya	40
7	Litchis	28
8	Grapes	27
9	Apricot	28

This wastage happens in various stages and few of them are crop losses due to substandard farming techniques, post harvest losses, storage losses, transportation losses and weight loss. There is also a high proportion of wastage across the value chain, deterioration in quality of produce, large fluctuations in prices, low availability of produce during off-season and low spend on fresh fruits and vegetables as a proportion of total spend on food.

POOR STATE OF HORTICULTURE

The main reason for the poor state of horticulture appears to be the long and fragmented supply chain. The supply chain ranges from farmer to orchard farm owner to consolidator/aggregator (commission agent1) to Trader/Transporter (Commission agent 2) to wholesaler to small roadside vendor/Retailer/Super market/Handcart vendor to finally consumer. In the entire supply chain, each constituent in the supply chain functions independently with little or no overlap with the next level and limited exchange of information, therefore, the constituents are constrained in performing their roles effectively. An integrated supply chain may

enable the critical linkages between various constituents. This may provide better information flow, material flow and money flow among various intermediaries.

STATUS OF FOOD PROCESSING INDUSTRY

The food processing industry in India is still in a sorry state. The rural population comprising 70% including small cities, consume less than 10% of the processed foods and vegetables, whereas 60% of the processed food is consumed in four major metropolitan cities and 30% in the state capitals and big cities. Another fact is that 40% of the processed food and vegetables produced in the country in terms of value are bought by institutional buyers like Hotels, Restaurants and Defense etc. The highest growth in domestic market has been in fruit drinks, tomato ketch up and Jams.

There is another fact that India is the largest milk producer in the world, however, organized industry accounts for less than 15% of the milk produce in India.

It is estimated that there may be a total production of 1100 million tons of production of food products mainly food grains, oilseeds, sugarcane and fruits/vegetables during 2011-12 and leaving marketable surplus of 870 million tons.

Table No. 2: Projections of Marketable surplus

(Million tons)

Commodity	Production		Marketable surplus	
	2001-02	2011-12	2001-02	2011-12
Food grains	213	321	110	166
Oilseeds	21	46	16	37
Sugarcane	297	433	276	402
Fruits & vegetables	133	300	166	265
Total	664	1100	518	870

Source: IARI

The demand for high value commodities particularly fruits; vegetables and milk would go up significantly during 2010 and 2020 in India. It is expected that the demand for fruits would go up from 56 million tons to 77 million tons (2010-2020), vegetables 113 to 150 million tons (2010-2020) and 104 to 143 million tons (2010-2020) for milk, as projected by IARI.

The processed fruits and vegetables in India has been growing at about 9% per annum with the highest growth being witnessed by juices and ready to eat vegetables.

Table No. 3: Status of processed F&V industry in India

(Rs. In crores)

Category	**Industry size**		**Key players**
	Organized	Unorganized	
Jams	90	50	HLL, Mapro, Marico, Malas
Pickles	150	1000	Priya food, Praveen, Desai brothers, Cavin Kare GD Foods
Sauce/Ketchup	100	400	HLL, Nestle, GD foods, Heinz
Pulp/Concentrates	400	-	Foods & Inns, BEC, clean foods, Jain Irrigation, Usha International
Juices/Fruit based drinks	500	-	Pepsi, Dabur, Godrej, Mother Dairy
Squashes	130	250	Kissan, Haldiram, Mapro
Ready to eat vegetables	100	-	Tasty Bite, ITC, MTR
Potato Chips	250	300	Pepsi, Haldiram, ITC
Cooking pastes	30	-	Dabur, HLL

Source: Rabo Bank India report

STATUS OF WORLD PRODUCTION VIS-À-VIS CONSUMPTION OF F&V

The global production of fruits and vegetables is approx 1.7 billion tons and has grown at a CAGR of 3.4%. The China dominates the production of fruits and vegetables with 1/3rd of total global production. China, India, USA and Turkey are jointly responsible for 2/3rd of global vegetable production. The production of fruits and vegetables worldwide is hugely fragmented. Majority of food and vegetables is considered fresh. In low income markets, fruit consumption is mostly fresh, only 10% is consumed processed, whereas, in High income markets, 50% of fruit

consumption is in the processed form. Besides consumer demand, triggers for food and vegetables processing are from the foodservice industry. Fresh cut produce is a relatively new phenomenon and is a premium priced.

Globally, fruits and vegetables are consumed close to the place of production. The global fruits and vegetables trade accounts for 5% of the global production and is currently approx. between 80-85 mn tons. However, the trade in fruits and vegetables is growing rapidly than trade in any other agriculture commodity. The fruits accounts for 60% of the total F&V trade and Banana is the world's most traded fruit. The banana, citrus, apples and pears account for 70% of global fruit trade. The vegetables trade is more regional, because of limited shelf life, but China is a dominant player in vegetable trade due to cost advantages and proximity to key import markets. The major key traders in the world for food and vegetables are EU and Mexico (Exporter) whereas USA and Japan are major importer.

WHAT IS AGRI BUSINESS

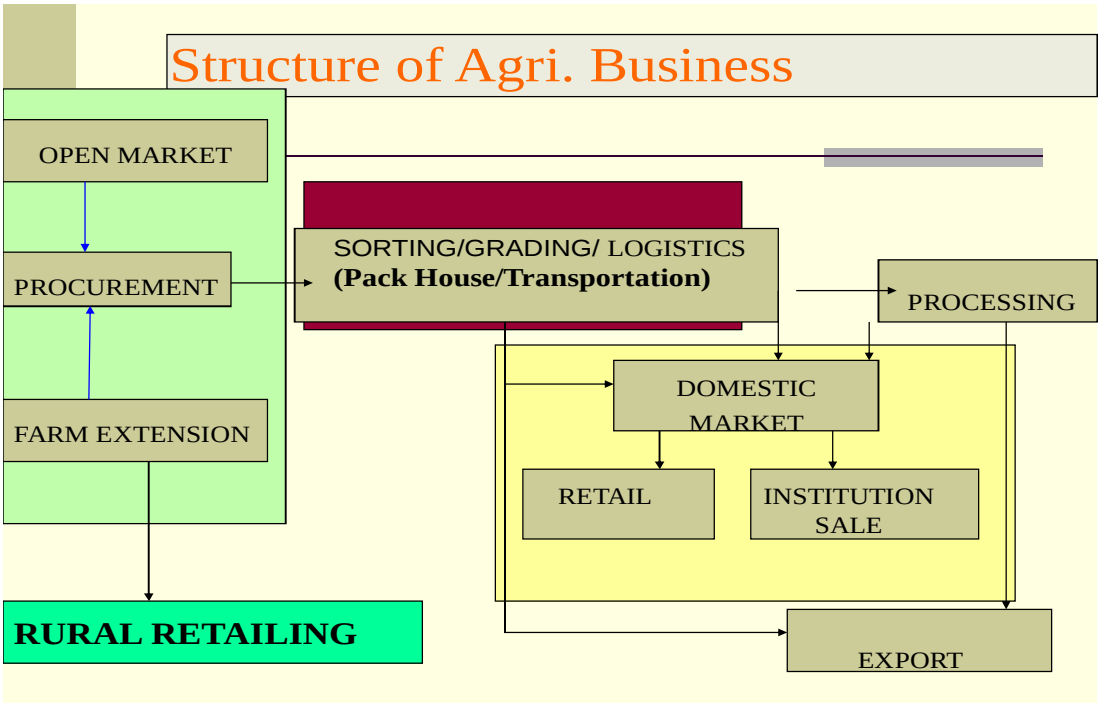
Dealing in any agriculture output viz cereals, pulses, oilseeds, Horticulture, Floriculture, spices, plantation crops, livestock, poultry, marine products etc. is considered as Agri. business. Besides this, Beekeeping (Honey production), Dairying & Milk products, oil extraction, flour, derivatives, spices/Tea/Coffee Meat/Seafood/Poultry processing is also covered under Agri. business.

Since, Agri-business has a wider perspective, this paper limits to fruits and vegetable (Horticulture) related business opportunities. The Agri. business pertaining to fruits and vegetables has three kinds of business components:

- Procurement/sorting /grading-transport (sell of fresh produce)
- Development of cooling facilities in terms of warehousing/storage/transportation /IQF (Individual quick freezing)-Infrastructure support
- Processing of fruits and vegetables

STRUCTURE OF AGRI-BUSINESS

The structure of Agri-business has been precisely depicted in the following diagramme. This involves procurement/Aggregation of farm output, sorting, grading, logistics to processing units or to domestic markets, retail institution sale, export etc. Here, the very purpose is to eliminate the intermediaries to reduce the time, money and deterioration of quality of the produce.



TYPES OF BUSINESS LINES IN F&V SECTOR

The F&V sector offers three business lines. The 1st business line is:

- F&V aggregation(Grading/sorting/primary process)
- Transportation & logistics
- Marketing of fresh & processed produce

The 2nd business line is the development of cold storage service provider

- Development of modern cold storage infrastructure
- Revenue generation from service provider business
- Cold Storage Van operation

The 3rd business line pertains to processing of F&V produce

- Individual Quick Freezing IQF(Fruits & Vegetables)
- Juices/candy/squash/pickles
- Irradiation for fresh produce sell

The final step in the F&V Business lines pertains to marketing.

- Creating own brand/own chain store/shop in shop(SIS) in Malls

- Contract manufacturing
- JV/Collaboration
- Exports

GOVT. SUPPORT FOR HORTICULTURE BUSINESS

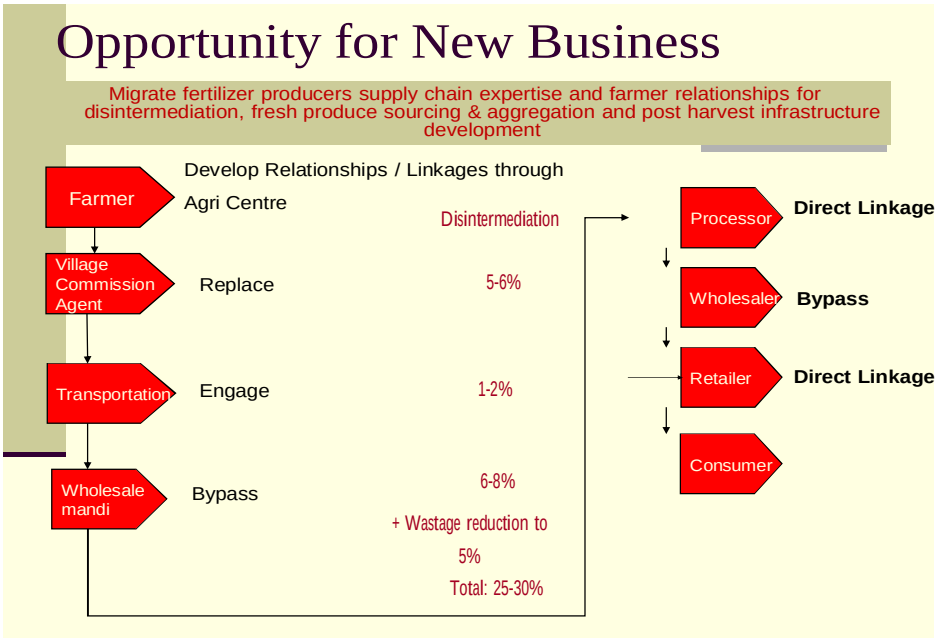
The Horticulture Board through Govt. of India provides technical, financial, logistics, MIS, consultancy and Marketing support. A brief of the support offered on Horticulture business by Govt. of India is depicted in the following chart:-

COMPONENTS	PATTERN OF ASSISTANCE
1. Commercial Horticulture Production • Production of Horticulture crops • Aromatic plants, Tissue culture, Bio-Pesticide, Organic Food, Beekeeping • Grading/Washing/Drying, Packing Centers • Pre-Cooling /Cold Storage • Refrigerated Van • Retail Outlets • Ripening/Curing Chamber/Radiation Unit/Dehydration Unit/Primary Processing • Horticulture Ancillaries (Tools/Equipments/Packaging)	• Back ended Capital subsidy up to 20% of project cost or Rs. 25 lakhs(Max)
2. Cold Storage Construction • Cold Storage, Controlled Atmosphere Storage	• Back ended Capital Subsidy up to 25% of project cost or Rs. 50 lakhs (Max.)
3. Technology Development & Transfer • Introduction of new Technology# • Domestic Visit of Farmers* • Technology awareness through seminar^	• 100% Financial Assistance (# up to Rs 25 lakhs) (*As per Actual) (^ Up to Rs 50,000 per Seminar)
4. MIS for Horticulture Crops • MIS for produce prices • Dissemination of info thro Media/Publication	
5. Horticulture Promotion Service • Techno-Economic feasibility Studies thro consultants • Develop strategies • Provide Consultancy Services	• 100% Financial Assistance

OPPORTUNITIES FOR FERTILISER PRODUCERS FOR F&V OUTPUT MANAGEMENT

The major fertilizer players enjoy a high degree of credibility among farming communities due to their presence in the rural markets since long. These fertilizer producers are strong enough in "Back end operations" and capable of influencing farmers' decisions for improving their livelihoods through intervention in various forms. They have huge infrastructure at strategic locations, supported by technically and professionally qualified manpower, financial soundness, quality consciousness and above all good liaison with institutions & Govt. agencies/Departments. Many of them could create required infrastructure for F&V business and provide the farming communities required marketing support, information support, financial support and technological support. Some of the fertilizer producing units are located in the close proximity to fresh fruits and vegetable growing areas where they could act as farm aggregator, cold storage/ cold storage transport vans provider and food processor also due to the availability of uninterrupted power, water, steam, air/Nitrogen, Ammonia, surplus land etc at low incremental cost. Thus the fertilizer producers may briefly act as catalyst in better output management through:

- Encouraging farmers to cultivate crops which are "marketable"
- Use of improved post harvest technologies
- Strengthening infrastructure facilities including advance technology for cold storage/warehouse at remote locations
- Increasing intensity of procurement centers
- Encouraging business houses to set up unit for value addition at village/block level



MAJOR PLAYERS IN AGRI. BUSINESS & THEIR ACTIVITIES:

ITC (FMCG giant) has been a key player in managing the Agri. Input as well as Agri. Output marketing through its e-choupals & offering better prices for farmers produce, taking advantage of technological intervention for quality produce and thus facilitating in transforming farmers lives. Probably, the concept of corporate farming may be in place which might change the lives of rural masses by converting agriculture as a lucrative proposition. Similarly, there are other business houses also operating in rural areas are DCM Shriram Consolidated (DSCL) through its mega departmental stores known as Hariyali Kisan Bazar, Mahendra Shubhlabh Service Ltd (MSSL) through Mahendra Krishi Vihar, Bharti Enterprises as Field Fresh Foods (P) Ltd., Thapar Group's Global Green Co. Ltd., Pantaloon Retail (Big Bazar & Food Bazar) who introduced the concept of SIS (Shop in Shop), Godrej Foods, Mother Dairy , Subiksha and Namdhari seeds through its air-conditioned F&V outlets in Metro cities. The following table presents the major players and activities undertaken by them in brief:-

Major Players in Agri Business & their activities

MAJOR PLAYERS/BRAND	ACTIVITIES
Reliance Retail (Reliance Fresh)	Direct Sourcing (Producer) & Retailing
Pantaloon Retail (Food Bazaar)	Direct Sourcing (Producer) & Retailing
Godrej Foods (Jumpin,X'S,Godrej)	Fruit Juices,Necter,Oil extraction, Bakery
Bharti Enterprises- Field Fresh	Mango export ,Research farm
Thapar's Global Green (Tiffy)	Exports gherkins, jalapenos, preserved foods
DSCL (Hariyali Kisan Bazaar)	Farmers Mini Departmental stores
Tata Group (Tata Krishi Kendra)	Agri.Inputs & Technology Stores
Mahindra (Mahindra Krishi Vihar)	Agri Inputs, Farm Machinery,FMCG Stores
ITC (E-chaupal & Sagar Chaupal)	Source thro farmers centers for processing
Chambal (EverFresh)	IQF of vegetables & selling thro malls
Mother Dairy (Safal)	Fresh/IQF Vegetables sale thr lease outlets
Subiksha	Discounted Retailing (Neighborhood store)
Namdhari Seeds	Modern A/CFresh F&V stores

MARKET RESEARCH ON F&V IN MEGA MALLS

A study was carried out for learning about customers (Mall owner), consumers & farmers regarding their preferences & business for exotic vegetables and fruits. The sample size was 15 mall owners, 50 consumers and 30 farmers.

The brief of the study is depicted in the following table:

Market survey for F&V in Mega Malls

- **Customers Preference** – Broccoli (75%),Red/Yellow Capsicum (67%),Baby Corn (50%), Mushroom (33%)
- Source of Purchase – Mandis (37%),Direct farmers (32%), Commission agents (26%), Others (5%)
- Consistency in supply – Yes (37%) , No (33%)
- Growth in demand – Positive as 75% malls observe
- Annual Turnover – Rs 2-3lakhs (56%), Rs 1-2 lakhs (22%), Rs 0.50-1 lakh(20%)
- Direct farmers facilitators required – 92 %
- Frequency of buying – Daily (28%), Weekly (50%), Occasional (22%)
- Reasons for Purchase – Taste (49%), Health (46%), Status (1%),Others (4%)
- Source of buyers Awareness – Friends/Relatives (47%), Magazine/Mall's litreture(20%), Radio/ TV (8%), Others (25%)
- Quality satisfaction – Yes (86%), No (14%)
- Income Group of buyers – Rs 30000PM (60%),Rs 20-30000pm (17%), Below Rs 20000pm (23%)

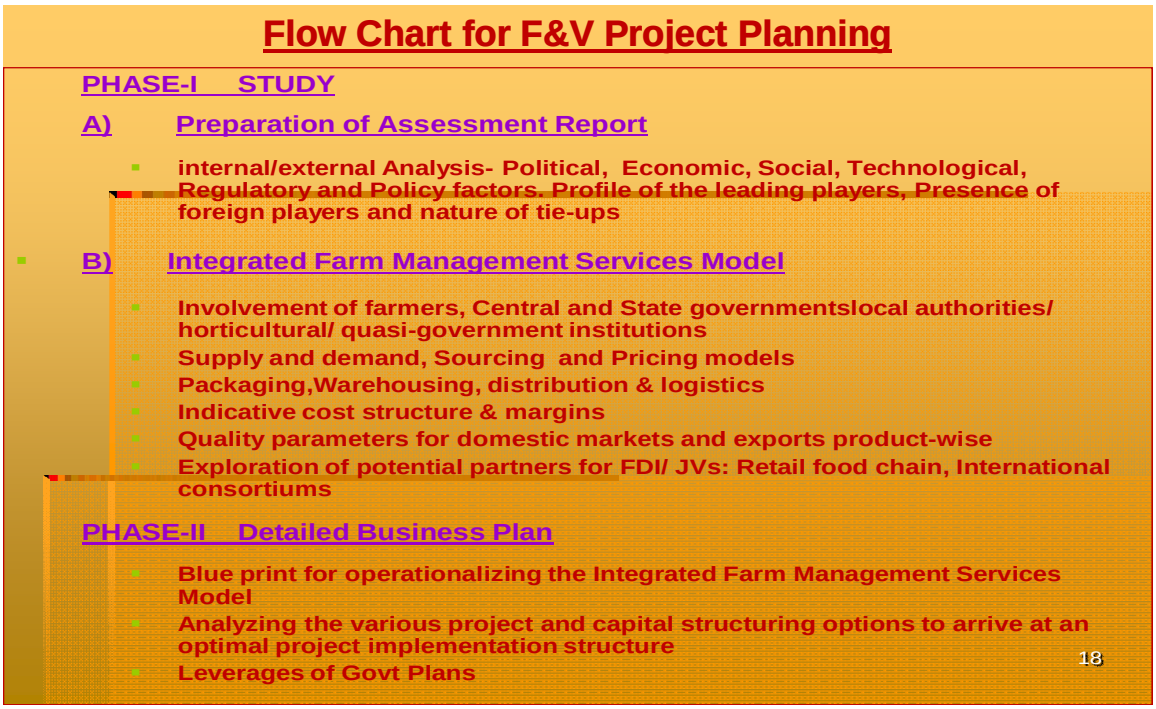
Remarks :- Sample Size – 15 Mall owners, 50 Consumers, 30 Farmers

It has been reported/concluded that all the malls are either having SIS concept or procuring from "Mandis" hence the intermediaries are still involved in the process. The supply is erratic/Non consistent and therefore they are looking for facilitators. This gap could be bridged by the fertilizer producers. There appears to be increasing preference for exotic vegetables such as Broccoli, Red/Yellow Capsicum, and Baby Corn & Mushroom among consumers, with a positive demand growth due to taste, health or status reasons. Thus, there appears to be a great potential for F&V products in Malls, Restaurants, Chain stores, defense etc.

AGRI BUSINESS PROJECT PREPARATION & IMPLEMENTATION

It is very crucial for the fertilizer producers to carefully design the Agri. Business Project, which starts from preparation of action plan, identification of the business activities, understanding the environment, legal & Govt. support, development of marketing plan, chalking out strategies, working-out financials and finally develop a blue print of the business plan. A flow chart for developing an Agri. Business project is depicted below for reference. The plan must be flexible and may incorporate several other issues as well which are not covered in the given plan. The entire plan

needs to be implemented in a phased manner to overcome the operational difficulties.



Scope of Services for Consultants

1) Analysis of internal and external environment

2) Farm produces aggregation

- Identification of product/crops in the intended area
- Location/infrastructure/logistics for collection centers
- Study of collection centre and its requirements, strengthening /relocation/addition etc.
- Farms produce Sourcing models, pricing mechanism, quality determination.
- Logistics for linkage to processing centre
- Investment on development for collection centers and infrastructure.

3) Processing

- Identification of produce for advance processing
- Sourcing of technology/plant supplier
- Project capital structuring & Financial working

4) Marketing

- Profile of leading players/presence of foreign players and nature of tie-ups
- Indicative cost structures and margins
- Quality parameters-domestic/export
- Marketing partners/international-national JV for-institution sale, Own chain retailing, Export

5) Legal/Govt. Support

- APMC Act for the intended states
- Support available for various activities from Govt./ Quasi Govt. bodies e.g. Horticulture board etc.

6) Blue print for Business Plan

- An integrated Agri-Business model for Fertilizer Company.

OPERATIONAL ISSUES

The fertilizer industry has some constraints related to agribusiness and therefore they need to identify the areas and the operational issues need to be understood carefully so that they do not pose threat at any stage. The options need to be worked out to overcome operational difficulties. Some of the issues are given below:

- Whether to procure from Mandies/Market or to go for Contact Farming
- How to Set Procurement Modalities in Fluctuating Market prices
- How to set Quality Norms/Grading and Differential pricing
- How to Manage Wastages (transit/Storage/left-over)
- For direct sourcing, Rapport building with farmers to by-pass intermediaries may take considerable time and efforts.
- The venture will require prompt decision making, hence more autonomy and delegation to front line managers required.
- Accountability needs to be in terms of achievement of Profit Targets and not on Operational aspects.
- Separate JV/Subsidiary needs to be established because existing manpower of fertilizer business be neither spared nor expert of F&V business.
- Lack of expertise of contract farming, retail business, FMCG business and export and therefore whether fresh manpower needed.

CONCLUSION

India tops in the world in producing cereals, Milk, Livestock, Banana & Mango, whereas, stands 2nd in Fruits & Vegetables. However, India's share in global F& V trade is meager. There is huge wastage in F&V sector and also lacking in processing facilities. India's share in global processed food is also negligible. There are several factors responsible for poor state of Indian horticulture; however, the crucial one is long and fragmented supply chain. The farmers have never been beneficiary of producing less or more F&V. Recently, the F&V prices are escalating day by day but gainers are intermediaries only. As per the estimates, the marketable surplus of F&V is likely to multiply in years to come and therefore, needs facilitator, who could protect farmers interest by offering them reasonably good returns of their produce, eliminate intermediaries, provide require infrastructure support, establish/create linkages with processing units and bridge the gap between producer and consumer by offering fresh/processed F&V at reasonable price to consumers. This may also help in reducing wastage /losses and further enhance marketable surplus. This may be well taken up by the fertilizer producers due to their presence and understanding of the rural markets & credibility among farmers. There may be three business lines available in F&V sector. The 1st deals in marketing of fresh F&V after aggregation and its logistics, 2nd deals in creation of cold storage infrastructure and 3rd pertains to processing of F&V produce. There are several schemes of Govt. of India which provides technical financial, logistics, MIS, consultancy and marketing support. Fertilizer players may decide for the kind of business line they are interested in, keeping in view their strengths and take required govt. support. There are several big industrial houses interested to get into F&V business but due to their weak backend operations could either not fully succeeded or looking for partners. The fertilizer producers may go for due diligence and carefully design an Agri. Business project. The Agri. Business consultant may also be hired to undertake a detailed study for a profitable F&V business proposition and by overcoming the operational constraints/ challenges for fertilizer producers. This could lead to a "win-win" situation for farmers, consumers and fertilizer producers.