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**MARKET LED EXTENSION; PROSPECTS AND CHALLENGES FOR  
AGRICULTURAL SUSTAINABILITY IN THE 21<sup>ST</sup> CENTURY**

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## *Abstract*

*Agricultural sustainability can only be achieved when the ends are target from the means. This does not include only safe production in terms of consciousness of future generation needs but building up the capacity of the Agricultural system towards increase in productivity cum profit maximization through the new trend of extension services. Under WTO, the globalization/liberalization of market demands farmers at all levels to transform themselves from production and selling in the domestic market to producer cum seller in the wider market scene to realize the optimum returns on their investments. The need for market led is of necessity by the paradigm shift of present Agriculture scenarios which calls for conversion of the sector into profit oriented business. FAO estimates that 32 percent of all food produced in the world were lost in 2009 due to lack of post-harvest operation among others (Lipinski, B. et al. 2013). Similarly, 13% of Gross Domestic Product was reported loss yearly in India due to loss of food grains (Manipadma Jena, 2013). Existence of many middle men has also resulted into less return on farmer's investment as well as high cost paid by the consumer. However this loss can be minimized by the Market Led extension approach through adequate supply of information by SWOT analysis of the market, establishing market and agro processing linkages, direct marketing, and capacity building in terms of improved production and post-harvest operation such as proper handling, grading, standardizing, value addition, packaging as well as storage and transport system (Ahmad Nafees and Slathia, 2011). Hence, this paper discusses the prospects and challenges of market led extension in view of 21<sup>st</sup> century scenario for capacity building of farmers, extension functionaries' stakeholders, and also for policy recommendation towards holistic sustainable agricultural development.*

Key words: Market Led Extension, capacity building, Sustainable Agriculture, Liberalization and post-harvest operations.

## **Introduction**

India is an Agrarian country with 60% of its population depending on Agriculture. It remains the principal source of livelihood for more than 58 % of the population though its contribution to the national GDP has declined to 13.9 % due to high growth experienced in industries and services sectors (Anon, 2012). Over the past few decades,

India became self-reliant in food production and this was as a result of production led extension system among others. Emphasis was made on transfer of 'package of practices' from research station to farmer's field resulting in increase in food production. The success of this system brought to lime light the long standing problem related to marketing as well as challenge of realizing optimum returns on farmers investment as farmers became self-aware of the need to shift from 'seed to seed' to 'rupee to rupee'. Till today most of our farmers sells their produce in 'as is where basis' without being aware of market situation.

However, capacity building of farmers towards equipping them with crucial information about markets is of paramount necessity. Extension system should not only focus on the Agricultural production but should also lay emphasis on marketing for holistic development of the farmers. Market Led Extension builds emphasis on the focus shift from 'content' to 'function' stressing the need of Agriculture extension to be more than just a delivery vehicle for agriculture technology. It is the market ward orientation of agriculture through extension includes agriculture & economics as the perfect blend for reaching at the door steps of farming community with the help of appropriate technology market ward orientation of Agriculture through extension. The need for market led is of necessity by the paradigm shift of present Agriculture scenarios which calls for conversion of the sector into profit oriented business (Kaleel and Krisnamurthy, 2007).

### **Objectives**

This research paper was designed with the to study the concept of Market Led Extension in view of the clarion call for sustainable Agriculture in the 21<sup>st</sup> century by unraveling the prospects and challenges of market oriented extension system towards holistic Agricultural development on sustainable basis.

### **Methodology**

The scope of this research paper is limited to emphasis on achieving sustainable Agriculture through Market Led Extension. The study however examines the prospects and challenges of Market Led Extension as well as sustainable extension strategies needed for the realization of holistic Agricultural development. The research paper was based on published literature as well as secondary data. The data were collected from related articles, FAO STAT, magazines, newspapers, govt. documents, books, reports and

websites related to Sustainable Agriculture, Market led Extension and Agricultural Marketing.

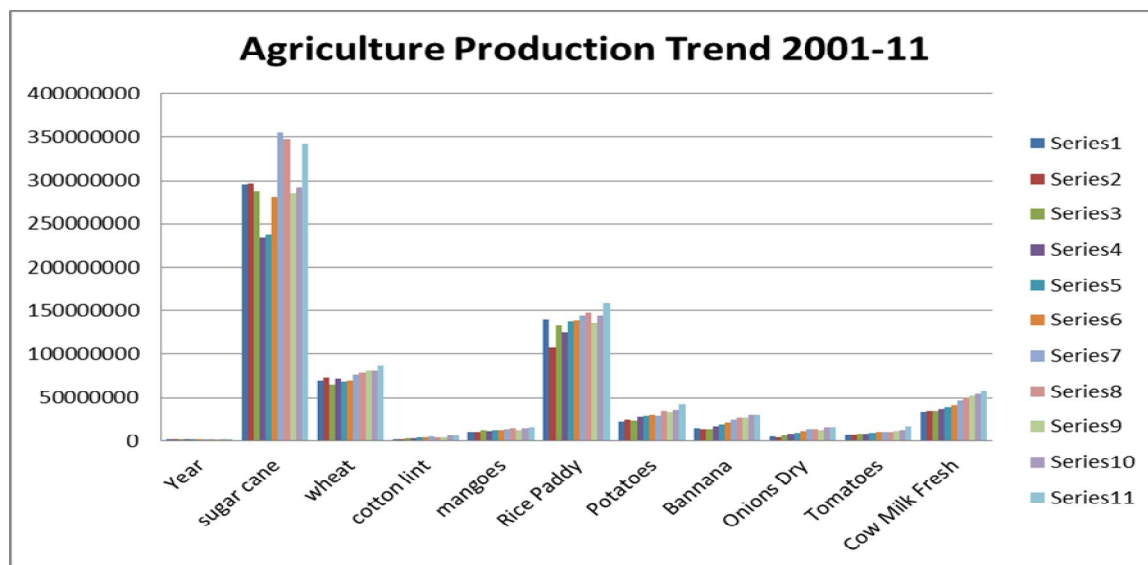
## 21<sup>st</sup> CENTURY SENARIO OF INDIAN AGRICULTURE

There is no gainsaying the fact that Agriculture in India over the half century has witnessed a great success considering the great capacity achieved in feeding the fast growing population as well as causing waves at the international market scene. Indian agriculture made a rapid progress augmenting the annual food grain production from 51 million tonnes in the early 1950's to 235 million tonnes in 2009-2010 and steered the country to a status of self-sufficiency (Rajesh Kumar et al., 2012). With this progress in mind, the following scenario is described to understand the trend of Indian agriculture in the 21<sup>st</sup> century.

### Agriculture Production Trend

Agriculture production trend has increased considerable over the years. For instance, food grains production during the year 2011-12 reached a hallmark of 259.32 million tonnes, of which 131.27 million tonnes was during Kharif season and 128.05 million tonnes during the Rabi season. Interestingly, the total food grains production of cereals was 242.23 million tonnes and pulses 17.09 million tones (Sunil Kumar Choudhary, 2013). Table 1 below shows an increasing Agriculture Production Trend for the past ten years.

Fig 1: India Agriculture Production Trend from 2001-2011



Source: FAO STAT, 2013

## Food supply Trend

Food supply over the years has also increased though not in commensurate with the rate of production. For instance, production of rice was on increasing side during the study year while the supply trend was decreasing. Also, supply of potatoes, tomatoes and sugar cane maintained a stable trend while only wheat was increasing (Fig. 2&3)

Fig 2: Line chart of India Agriculture Production Trend from 2001- 2011

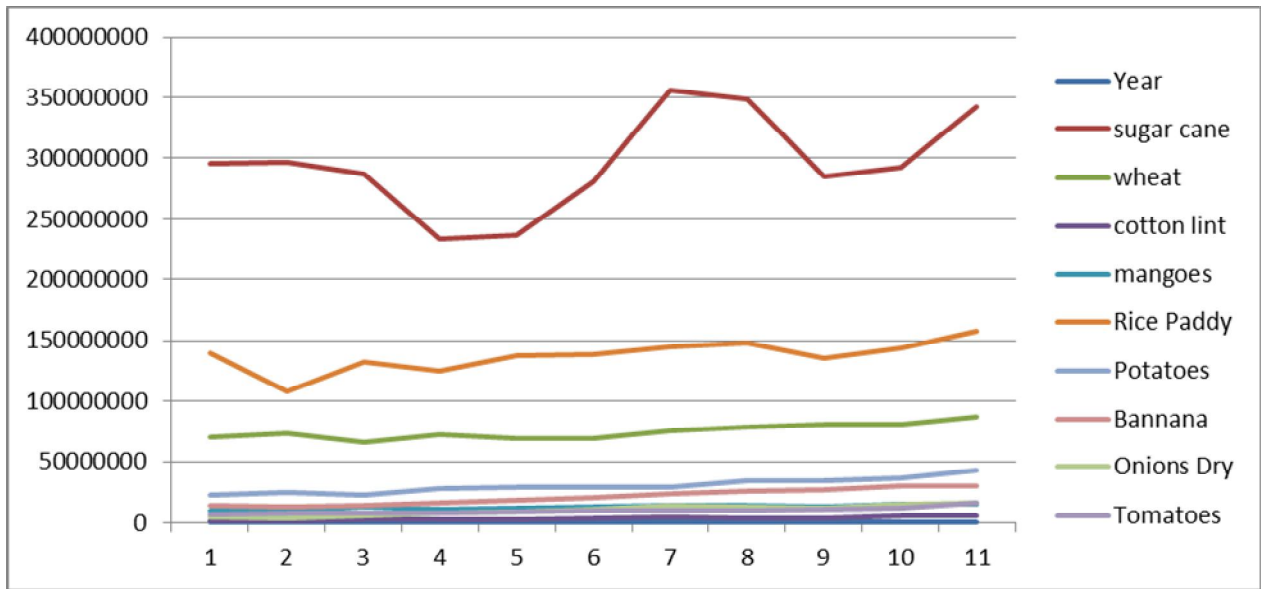
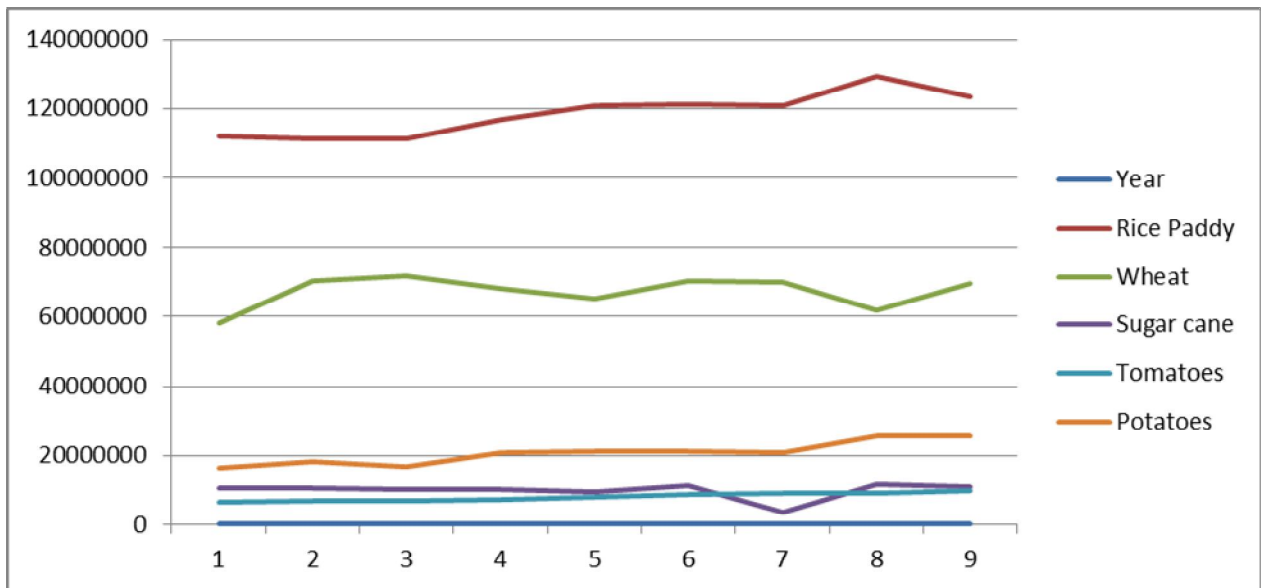


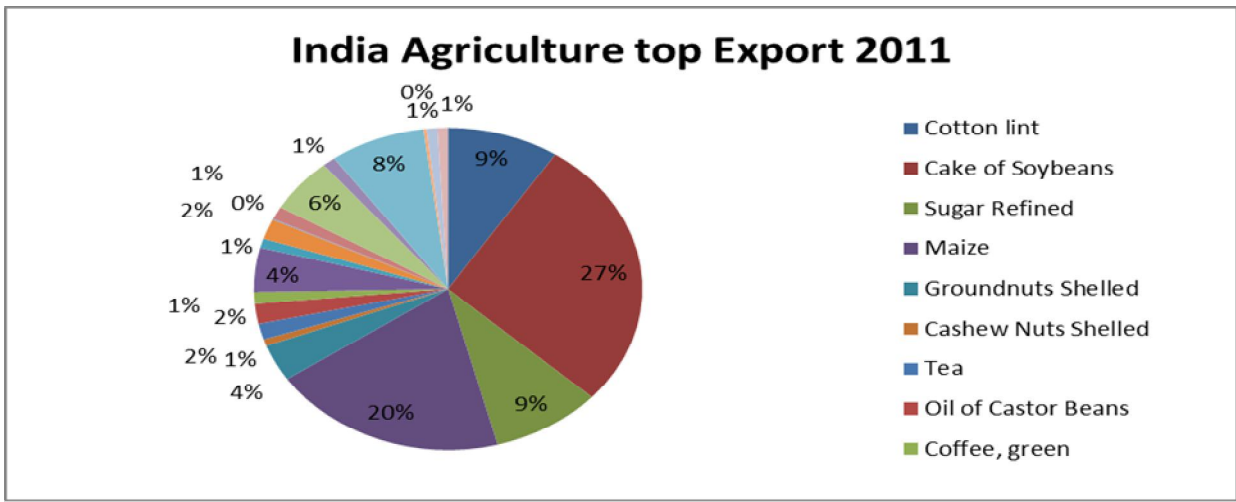
Fig 3: Food supply trend of from 2001-2009 in tonnes



### Agricultural Products Export Trend

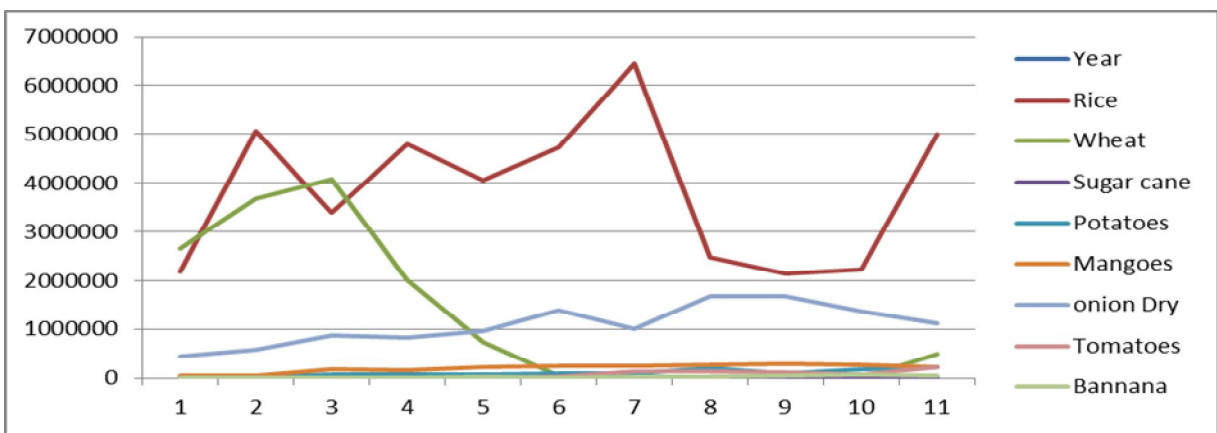
India over the last decades has been making a great mark in her export share through Agricultural products especially considering the aftermath of WTO, globalization/liberalization of market. According to foreign trade performance analysis, agricultural and allied products, which had a share of 11.43 per cent in the total export basket, grew by as much as 40 per cent during April-October 2012 to stand at \$18.86 billion while chemicals and related products, with a share of 14.51 per cent in the total export basket grew 6.33 per cent and stood at \$23.93 billion during the seven month period (Shruti Srivastava, 2012).

Fig 4: India Agricultural Products Export 2011



Source: FAO STAT, 2013

Figure 5: Export Trend of Agricultural crops 2001-2011

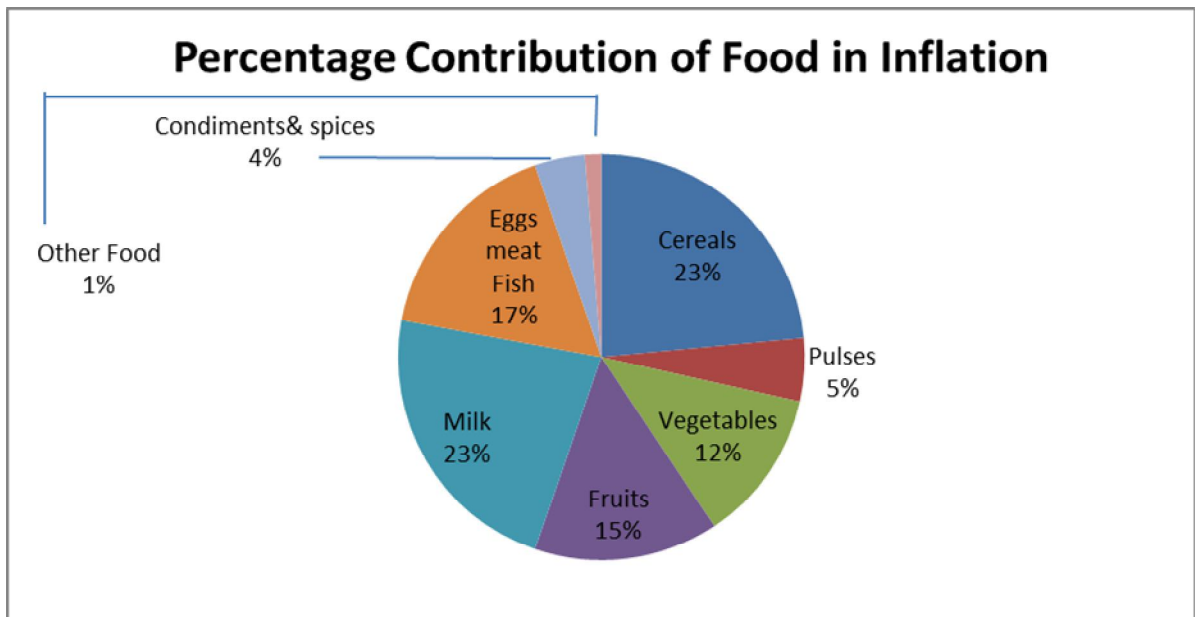


Source: FAO STAT, 2013

## Agricultural Marketing in India

According to National Commission on Agriculture, agricultural marketing is defined as a process which starts with a decision to produce a saleable farm commodity and it involves all aspects of market structure of system, both functional and institutional, based on technical and economic considerations and includes pre and post-harvest operations, assembling, grading, storage, transportation and distribution. Agricultural marketing in India over the last decades has witnessed a paradigm shift. India has slowly opened up its markets through economic liberalization. After more fundamental reforms since 1991 and their renewal in the 2000s, India has progressed towards a free market economy (Anon. 2014: Shruti Parashar and Stuti Halder, 2012). India's growth reached 7.5% in the late 2000s, which will double the average income in a decade (The Policy Brief: Economic Survey of India, 2007). However, the challenge of the hour is the rise in inflation and price of food items which was a result of imbalance in the demand and supply rate of food, and on the other hand farmers are not getting a good price for their products which complicate the whole marketing process. The principal factors behind the higher levels of inflation in the recent period are constraints in production and distribution especially in high value items such as pulses, fruits and vegetables, milk and dairy products, egg, meat and fish (Anons 2013).

Fig 6: Percentage contribution of food inflation



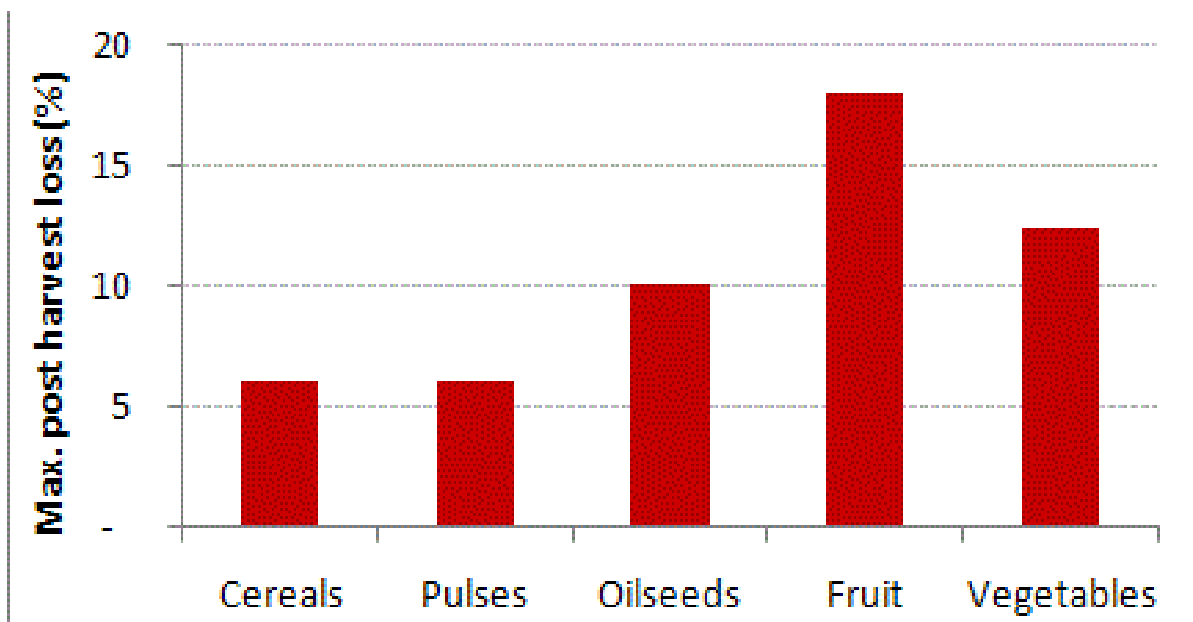


Source: State of India Agriculture 2012-13 (Ministry of Agriculture Department of Agriculture and Cooperation Directorate of Economics and Statistics New Delhi)

### **POST HARVEST MANAGEMENT AND VALUE ADDITION**

Another scenario that impedes agricultural marketing and food security is the issue of post-harvest management and value addition. According to FAO estimates, 32 percent of all food produced in the world were lost in 2009 due to lack of post-harvest operation among others (Lipinski, B. et al. 2013). In the same vein, Manipadma Jena, (2013) reported that 13% of Gross Domestic Product was loss yearly in India due to loss of food grains. PareshVidyadhar Joshi, et al., 2012 affirms that approximately 1.5% of the produce gets rotten and becomes unfit for human consumption.

Fig 7: Post Harvest Loss in India



Source: Business Standard, 2010 ICAR study

For instance, the collaborative effort of research and development institutions, farmers, government agencies and traders over the years has enable the country in emerging as a major producer of fruits and vegetable in the world. Ironically, improper post-harvest management of fruits and vegetables resulted in estimated losses of 35-40 per cent (Anons, 2007). The loss yearly was estimated at Rs 40,000 crores per year which

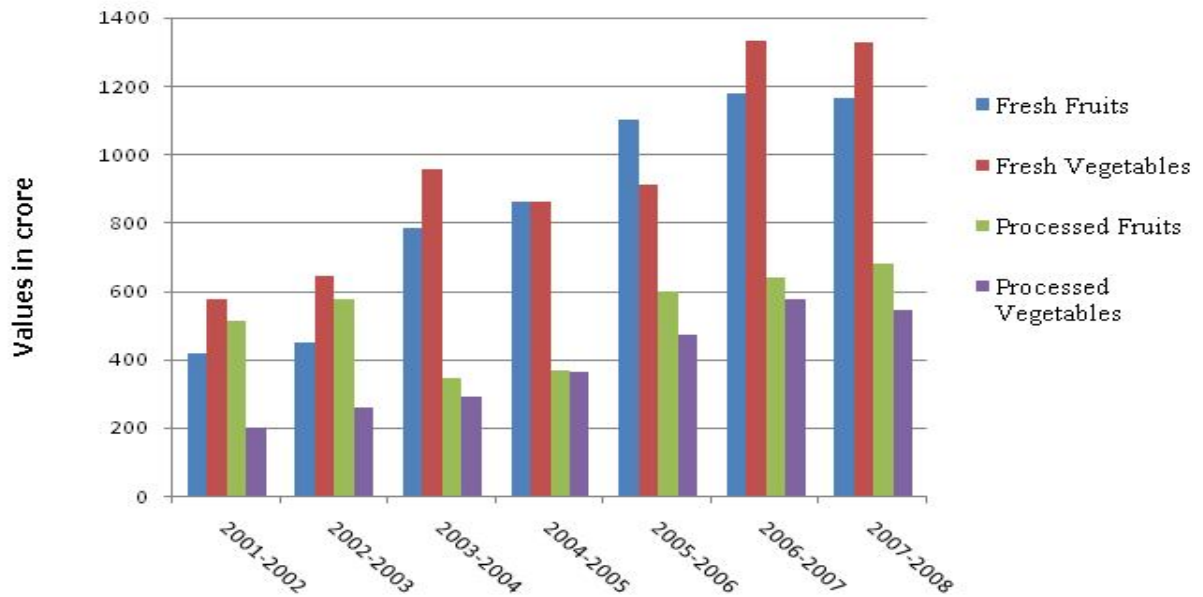
is of a great concern and albeit the labour wastage, energy, time and input that was invested (SaswatiNayak and AK Mukhopadhyay, 2008).

Fig 8: Agricultural Value Added in percentage of GDP (India)



World Bank national accounts data, and OECD National Accounts data files 2013

Fig 9: India Export statistics of fruits and vegetables and their value added per products

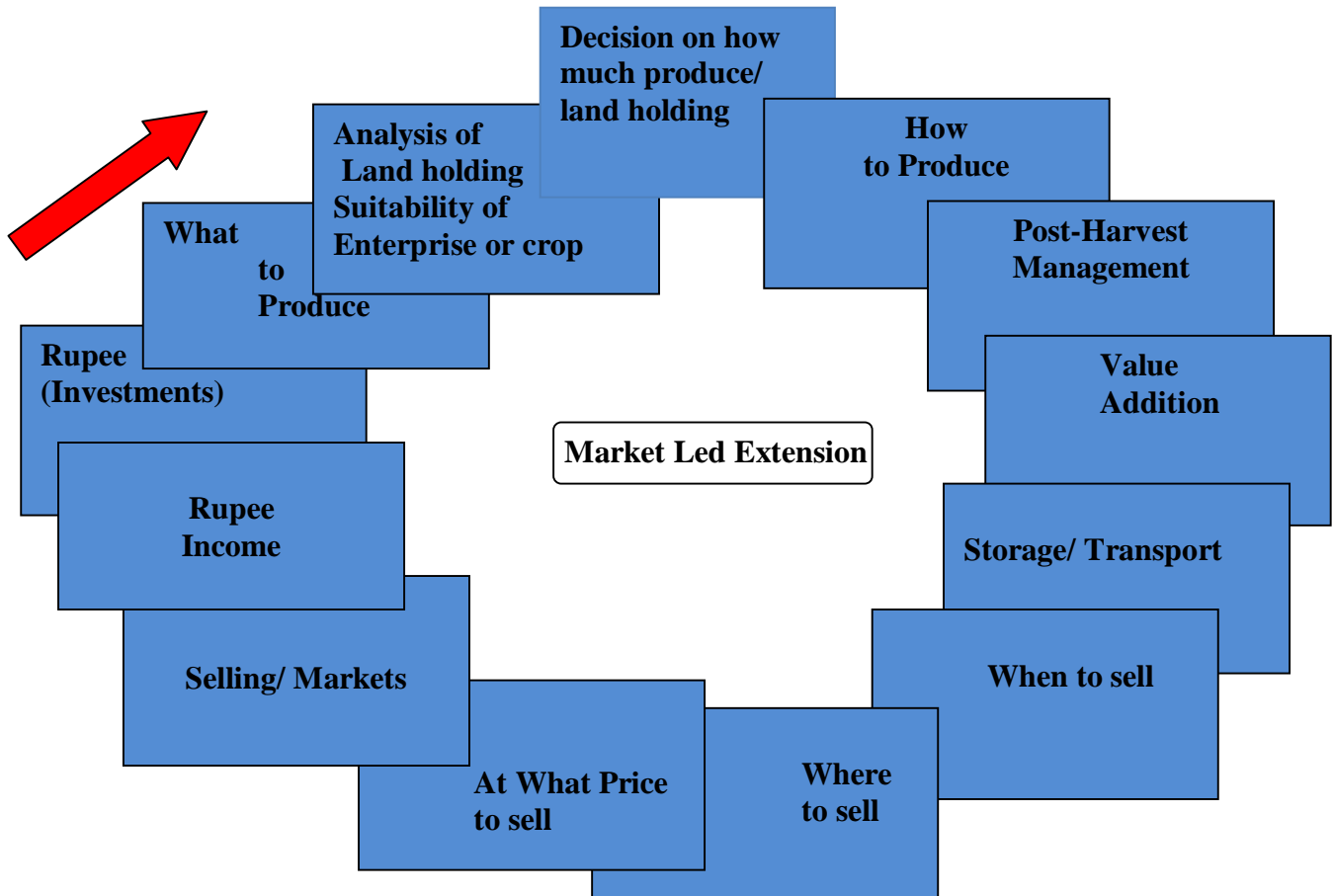


Source: Directorate General of Commercial Intelligence and Statistics Ministry of Commerce and industry, Govt. of India

## MARKET LED EXTENSION: THE NEED OF THE HOUR

The paradigm shift of present Agriculture scenarios especially in India context as well as globally spurs for all hands to be on desk to transform Agriculture sector to into worthwhile and profit oriented business through the intervention of Market Led Extension. Farmers which are the producer and the almost receiver of the shocking wave in the sector must be taking care of in terms of building their capacity to face the challenge of the hour. Indian Agriculture has been characterized with high input cost, lack of access to quality information especially information about markets, lack of labour as a result of rural urban migration, lack of infrastructure facility, large number of market functionaries, lack of grading and standardizing, good storage facilities, lack of market intelligence among others which resulted in high marketing cost and minimum share in consumer's rupee.

Fig 10: The Flow chart of Market Led Extension



Adequate information is needed from the point of investment to the point of making returns. Extension agents as which are trained as agent of information should get involved in all stages of farmer's decision making to guide them in making right decision at the right time. Farmers need answers to questions like what to produce? When to produce? How much to produce When and where to sell? Where to sell? In what form to sell? What channels to sell his produce?

### **PROSPECTS OF MARKET LED EXTENSION**

Market Led Extension has a great potential in paving wave for optimum production on a sustainable basis considering the current trend of challenges in process of food production globally. Over the years 'lab to land' had been much emphasized in our country now it is time to focus on farm to fork. Due to WTO, the countries around the world are no longer confined to domestic production alone. The countries with competitive advantages are looking forward to dump their output anywhere in world. However, with the new functionary role of extension personnel under Market Led Extension, future success can be guaranteed for Indian Agricultural Development.

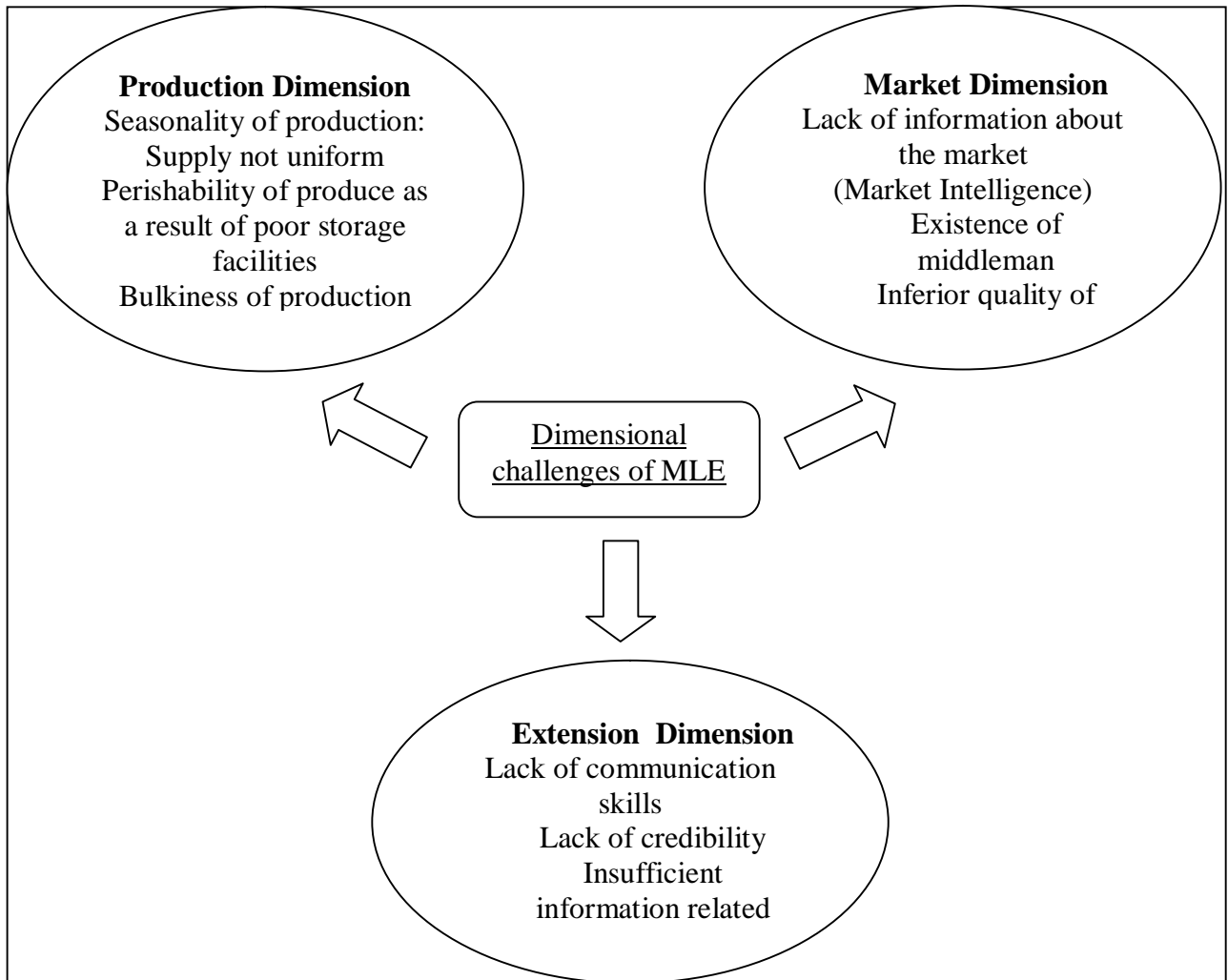
The following are some of the expected functionary role of extension personnel. This includes SWOT analysis of the market, Organizing commodity based farmers' interest groups and farm management capacity building, Backward and forward linkage, Farmers exposure to market intelligence and guidance for quality decision about market. Therefore key answer to the above questions will empower farmers in both production market oriented knowledge which is the sole responsibility of Extension functionaries through Market Led Extension

### **CHALLENGES IN MARKET LED EXTENSION**

Extension system is gigantic in size and is heavily burdened with multifarious activities. Adding to it is the gap in communication between the researcher and the farmer. Developing good market intelligence/ information is yet another challenge. Good market intelligence should be comprehensive, accurate, relevant, confidential, trustworthy, and equally accessible and timeliness. Agricultural goods are quite different from marketing goods. The main difference is they are perishable in nature. Supply is not regular because of seasonality in production. Farmers here have small land holding which gives scattered production and variability in quality of the products. Besides the factor

that our is not in a position to reap the benefits of WTO through export, also one major threat our country is faces is unrealized opportunity in agricultural marketing, imports by our country, underexplored export opportunities for Indian products and distortion in domestic market.

Fig 11: Three Dimensional challenges of Market Led Extension

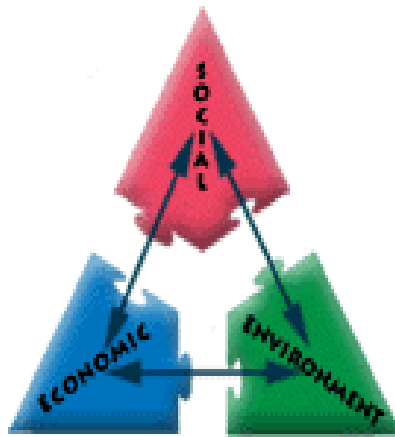


## **SUSTAINABLE AGRICULTURAL DEVELOPMENT THROUGH MARKET LED INTERVENTION**

World Commission on Environment and Development's (1987) defined Sustainable development as the development that meets the needs of the present without compromising the ability of future generations to meet their own needs. However,

achieving the need of the future should begin with striking an effective balance among social, economic and environmental objective through making equality decision today.

Effective decision making in Agricultural production from the stage of investment to return on the investment will as well produce an Agriculture growth on sustainable basis. This includes the proper integration of all the objectives; social economic and environments in other to meet food demand for the growing population. Consequently, Market Led extension can serve as a tool for effective delivery of adequate and quality information to farmers for effective decision on production and marketing issue so as to realize an optimum return for their investment without jeopardizing the need of the future generation.



<p><b>Services</b></p> <p><b>Household Needs</b></p> <p><b>Industrial Growth</b></p> <p><b>Agricultural Growth</b></p> <p><b>Efficient Use of Labor</b></p>	<p><b>Equity</b></p> <p><b>Participation</b></p> <p><b>Empowerment</b></p> <p><b>Social Mobility</b></p> <p><b>Cultural Preservation</b></p>	<p><b><u>Biodiversity</u></b></p> <p><b><u>Natural Resources</u></b></p> <p><b><u>Carrying Capacity</u></b></p> <p><b><u>Ecosystem Integrity</u></b></p> <p><b><u>Clean Air and Water</u></b></p>
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Adapted from World Bank Group- What is sustainable Development?

### **EXTENSION STRATEGIES FOR MARKET LED INTERVENTION**

Without mincing words, innovative strategies embedded in extension principle and practices is a sure way to linking the farmers to market. One of these strategies is the timely initiatives of marketing Agricultural produce through FIGs, Commodity groups as well utilization of other group approaches. This will ultimately enable the participation of

various stakeholders in marketing agricultural produce thereby maximizing their potentials for maximum profit. Also, another profitable extension strategy is the utilization of principle of e- extension for marketing purposes. This can be done through initiation of online marketing system through farmers-traders-wholesalers and monetary transaction (eg. AMUL MODEL). Also, the introduction of subsidies provision for post-harvest management practices as well as value addition can go a long way in minimizing the challenges of post-harvest loss. Public-Private Organizations should also give emphasis on forward linkages of both crop and animal enterprises in addition to Non-Farm Activities at villages. Moreover, there should be adequate provision of credit facilities for storage transportation, grading value addition, packaging activities for farmers/farm women/rural youth with proper and strategic monitoring and evaluation per the extension functionaries.

## **CONCLUSION**

Sustainable Agriculture can therefore be realized by the intervention of Market-led extension system. This can be achieved through capacity building of farmers to realize optimum returns for their produce. This will in turn help minimize the production costs as well as improve their farmers' products through value addition. Extension functionaries need to work more on the area of marketing through the use of extension strategies in other to disseminate not only production but essentially marketing related information for holistic sustainable Agricultural development.

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