ABSTRACT

Agricultural development is multidirectional having galloping speed and rapid spread with respect to time and space. After green revolution, farmers started using improvised cultural practices and agricultural inputs in intensive cropping systems with labor intensive programmes to enhance the production potential per unit land, time and input. By following the liberalization process and globalization of economies would call for competitiveness and efficiency of agricultural production. The aim of this paper is to bring out the present scenario of agriculture industry that is largely influenced by trends in the global market. This paper will discuss the various trends that are emerging presently in agriculture industry like agriculture import and export, kisan call centre, online mandi, agriculture retailing and organic farming etc. Indian government support towards these trends will also be discussed.

KEYWORDS: Globalization, Information Technology, Innovation, Agriculture Export & Import, Agriculture Retailing, Organic Farming

INTRODUCTION

Agriculture is an important part of the Indian economy because more than 60% people live in rural areas and agriculture & its allied sectors contribute around 20% gross domestic product of the country. It generates employment to approximately 60 per cent of the population. It is also an important source of raw materials, industrial products and consumer goods for various industries. It plays a vital role in the socio-economic growth of the country. So it can be said that agriculture is backbone of the Indian economy. To make place in the list of developed countries it is essential to pay more attention and to be more focused towards new developments in the Indian agriculture industry.

After independence, the Indian agriculture industry has experienced a revolutionary breakthrough in food grain production, leading the country from deficit and import arena to the positive state of self sufficiency & buffer stock through several programmes such as Grow More Food Campaign - 1948, Community Development Programme – 1952, Intensive Agricultural District Programme (IADP)-1960, Intensive Agricultural Area Programmes (IAAP)-1966), High Yielding Variety Programme(HYVP) -1966, Operational Research Project (ORP) - 1971, Lab to Land Programme (LLP) - State Agricultural Extension Projects (T & V) 1974-75, National Agricultural Research Project (NARP) 1980-88 etc.

In July1991, a new chapter began in the Indian Economy when the Indian government adopted a new economic policy broadly known as economy reforms 1991 to save the country from serious situation of economic crisis. End of license quota and many more restrictions and controls from many industries (Liberalization), the role of public sector was limited to four industries, rest all industries opened for private sector(Privatization), allowed FDI by providing Facilities to foreign companies to invest in different fields of economic activities of India, removing constraints and obstacles to the entry of MNC’s in India, allowing Indian companies to enter foreign collaboration, to set up joint ventures abroad, removing many restrictions on import and export duties (Globalization) and major steps taken by government to implement new policy. After introducing this policy, India had shown its presence on the world map. Indian agriculture industry was
influenced by economic reform processes to a great extent. Some major steps taken were agricultural exports and imports, investment in new technologies and on rural infrastructure, patterns of agricultural growth, agriculture income and employment, agricultural prices and food security, reduction in commercial bank, credit to agriculture, Indian seed market opened up to global agribusinesses, encouragement to cash crop, and reduction of pesticide subsidy etc.

The journey of Indian agriculture industry from July 1991 to present is very contradictory. At times it enjoyed the globalization and some of the times it suffered from globalization. Introduction of better equipments and improvement in the techniques of agriculture in the process of globalization increased the production in terms of quantity as well as quality.

As such, farmers started earning more and having improved their per capita income and standard of living. After removing many controls and restrictions on export and import, Indian farmers got the option to sell their output to other countries and to expose them worldwide. However, reforms in the agricultural sector in particular, came under severe criticism in the late 1990s, when 221 farmers in the south Indian state of Andhra Pradesh committed suicide in one year. Reduced subsidy on electricity and pesticide due to liberalization policy, Indian seed market was opened up to global market leading to increment in seed price, agricultural land encroached for development of industries, increased no. of landless farmer, globalization, increased the competition in agriculture sector, devaluation of Indian rupee by 25%, agricultural sector was kept protected from FDI so capital formation in agricultural being negligible, were the main adverse effects of globalization on Indian agriculture industry. This combination along with deflationary policies which have hit rural public expenditure, created unprecedented agrarian crisis in India and pushed Indian farmers into the dark. But it will be a misconception if it is said that trade policy changes have not helped agriculture. It has accelerated the growth of agriculture and improved the framework of Indian agriculture industry. It gave new wings to Indian agriculture industry with new tools to fly in new global sky which have unlimited opportunity to make a strong presence on the world map.

RESEARCH METHODOLOGY

The paper is basically conceptual and descriptive, the data which has been used for the analysis, has been gathered from various secondary sources like research articles, published and unpublished scholarly papers, books, journals, speeches, newspapers, annual reports, databases available on various websites. The analysis of the data has been done according to its nature.

New Trends in Agriculture

here are so many political, technical and social changes that have taken place in the Indian agriculture infrastructure from 1991 till date, by which the Indian agriculture fabric meliorated. Lot of new concepts and innovations have been introduced to boost the pace of Indian agriculture.

INTERNATIONAL TRADE AND INDIAN AGRICULTURE

Agricultural Exports

It has increased trends in the present scenario. Indian agricultural exports have increased from Rs 39863.31 crore in 2004-05, to Rs 49802.92 crore in 2005-06. During the current year (April–September 2006), the value of agricultural exports was worth Rs 28157.52 crore as compared to Rs 21673.25 crore for the corresponding period of last year, registering a growth of 29.91 per cent. India's total export of agricultural and allied products at $10.5 billion in 2005-06 constitutes 10.2% of its export share. Developed country markets account for nearly 35% of India's agri-exports. Contribution of various agricultural commodities in world exports has been listed below. Product Percentage share in World Export-
Table 1

<table>
<thead>
<tr>
<th>Product Percentage Share in World Export</th>
<th>Product Percentage Share in World Export</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lac, gums, resins, vegetable products</td>
<td>10</td>
</tr>
<tr>
<td>Vegetable planting materials, vegetable products</td>
<td>4.9</td>
</tr>
<tr>
<td>Coffee, tea, mate &amp; spices</td>
<td>3.7</td>
</tr>
<tr>
<td>Marine products</td>
<td>2.3</td>
</tr>
<tr>
<td>Residues, waste of food industry, animal fodder</td>
<td>2.1</td>
</tr>
<tr>
<td>Cereals</td>
<td>1.3</td>
</tr>
<tr>
<td>Fruits &amp; nuts</td>
<td>1.1</td>
</tr>
</tbody>
</table>

Export of Marine products, which after a decline in 2003-04, had picked up in subsequent years, had grown by 6.3% in April-October 2006. In terms of export earnings, among marine products, frozen shrimp contributed to be the largest export item, followed by frozen fish, cuttlefish, squid, and dried items.

**Agriculture Import** - There has been a decline in agricultural import. The agricultural import has decreased from Rs. 22057.49 crore in 2004-05, to Rs. 21025.54 crore in 2005-06. The share of agricultural import to the country’s total import has remained steady around 3.33 per cent. Import has registered a relative decline during April-September 2006, when it was only 2.88 per cent of the country's total import. The import of vegetable oils (edible), pulses, cashew-nuts; cotton (raw and waste) and wood products dominate our agricultural import.

**Government’s Efforts toward Agriculture Export & Import**

- The Government is taking steps to encourage export of agro products through measures and incentives under Plan schemes of the Commodity Boards and Export Promotion Councils. Further, in order to boost export of Indian products, the Ministry of Commerce & Industry has put in place various schemes namely Market Development Assistance (MDA), Market Assistance Initiative (MAI), Assistance to State for Development Export Infrastructure and Allied Activities (ASIDE), Vishesh Krishi and Gram Upaj Yojana, Focus Product Scheme, Focus Market Scheme, Town of Export Excellence, etc. Agriculture and Processed Food Products Export Development Authority (APEDA), under the administrative control of the department of Commerce is also implementing various schemes to extend financial assistance to the eligible exporters registered with it to boost the overall agricultural export.
- The export of non-basmati rice from privately held stocks without any quantitative restriction or price restriction is permitted since 9th September, 2011. To promote export of medicinal plants and herbal products, export of plant portions, derivatives and extracts has been liberalized.
- Capital goods imported under EPCG for agriculture have been permitted to be installed anywhere in the Agri Export Zone (AEZ) and ASIDE funds are to be utilized for development for Agri Export Zones also.
- Import of seeds, bulbs, tubers and planting materials has been liberalized.

**RETAILING IN AGRICULTURE**

Retailing includes all activities involved in selling goods or services which are produced by farmers, to the final consumers for personal and non business use. Agricultural retail market in India is in a disadvantageous position, suffering from lack of avenues to reach out to the vast domestic as well as world market. This has largely been due to the inability of this sector to access latest technology and improve its marketing Interface. Development of organized retailing market either induced by indigenous capital or by foreign capital is very crucial where small and marginal farmers can supply their products directly to these big retailers (Indian or foreign).
Due to lack of adequate infrastructure facilities and lack of proper storage facilities, farmers are forced to sell their products at very low prices, which sometimes cannot even cover their cost of production. Overproduction or glut both becomes the cause of the farmer’s distress. The survey data presents that 28% of paddy production is sold at zero profit margins and for 45% of the paddy production, the profit margin varies from 5 to 10 percent. Only it is the rest 26% of the total production where profit margin is above 10%, but the maximum profit margin is 15%. The main cause is the lack of storage facility, failure of the Government mechanism to reach the farmers with minimum support price and virtual non-existence of organized marketing infrastructure.

**Government’s Efforts toward Agriculture Retail Market**

Several states in the country permit retailers to purchase produce directly from the farmers. Farmers are making full use of this opportunity and are adopting to cultivate assigned crops which have a good market and which are required by big retail chains and they become their suppliers. This gets them instant credit at higher prices than what they used to receive from their old man or middleman. Corporate retailers like ITC, Godrej, Reliance, AV Birla and many others have already established the farm linkage.

In January 2012 central government has approved reforms for single brand stores welcoming anyone in the world to innovate Indian retail market with 100% ownership but imposed the requirement that the single brand retailer, sources out 30% of its goods from India. In September 2012 central government won Parliament’s approval to the decision of allowing 51% FDI multibrand in retail.

FDI in retail will help in introduction of new technologies in agrimarketing and will benefit farmers and consumers. It will transform from fragmented and stressed agriculture supply chains into efficient and vertically integrated supply chains. It will improve integrated cold-chain infrastructure and storage facilities to reduce heavy losses to farmers in terms of wastage as well as selling price.

**INFORMATION TECHNOLOGY IN AGRICULTURE**

Agriculture is the backbone of Indian economy and food security is the major concern. India needs a second green revolution and it is possible only through the transfer of technologies from lab to land. Knowledge transfer to the agriculture sector with necessary inputs is most important. The country has a widespread telecom & internet network which could be put to effective use for delivering knowledge and information to the farming community.

The Vision 2020 document of the department of agriculture and co-operation envisages that the tools of ICT will provide networking of agriculture sector not only in the country but also globally. The center and state government departments will have reservoir of databases. And it will also bring farmers, researchers, scientists and administrators together by establishing “Agriculture Online” through exchange of ideas and information. There are several ministries and departments in government dealing with agriculture marketing. The Government’s digital initiatives include Agrisnet, Agris, Agmarknet, Dacnet, Fishnet, E-Chaupal, Digital mandi, Kisan call centre etc. with their independent websites. Facts and figures show they are working very successfully.

**E-Chaupal**

E-Chaupal is a business platform consisting of a set of organizational subsystems and interfaces connecting farmers to global market. It has been initiated by International Tobacco Company (ITC) in June 2000, a large multi business conglomerate in India, to link directly with rural farmers via the Internet for procurement of agricultural and aquaculture products like soybeans, wheat, coffee, and prawns. E-Choupal was conceived to tackle the
challenges posed by the unique features of Indian agriculture, characterized by fragmented farms, weak infrastructure and the involvement of numerous intermediaries. The programme involves the installation of computers with Internet access in rural areas of India to offer farmers up-to-date marketing and agricultural information.

This e-chaupal business platform consists of layers, each of different level of geographic aggregation. Each of the layers is characterized by three key elements

- The infrastructure (physical or organizational) through which transaction takes place
- The entity (person or organization) orchestrating the transactions
- The geographical coverage of the layer.

The first layer consists of the village level kiosks with internet access (e-chaupals), managed by an ITC trained local farmer and within walking distance (1-5 kilometers) of each target farmer. Each cluster of five villages gets an e-chaupal, which is justified by sparse population in rural India. The second layer consists of a brick and mortar infrastructure called hubs managed by the traditional intermediary who has local knowledge called ‘Samayojak’ and within tractorable distance (25-30 kilometers) of the target farmer.

E-Choupal is based on a hub and spoke model which consists of villages serviced by a local farmer called ‘Sanchalak’. These villages or spokes aggregate demand and supply to the next tier which is the district/town centered “hub”. The e-Choupal villages supply agricultural produce to ITC at the hub level and also service smaller last mile villages with agricultural information. The next level is the district centered “hub” which is mainly a procurement and storage space. Enhanced hubs, called ‘Sagars’ in addition to procurement and storage functions also serve as retail outlets (rural hyper marts) for products and services ranging from soaps and apparel to tractors and insurance.

The initiative was launched in June 2000 and it has already become the largest initiative among all internet-based interventions in rural India. ‘E-Choupal’ services today reach out to over 4 million farmers growing a range of crops - soybean, coffee, wheat, rice, pulses, and shrimp - in over 40,000 villages through 6500 kiosks across ten states (Madhya Pradesh, Haryana, Uttarakhand, Karnataka, Andhra Pradesh, Uttar Pradesh, Rajasthan, Maharashtra, Kerala and Tamil Nadu).

**Kisan Call Centre**

In January 21, 2004, the Department of Agriculture and Co-operation (DAC) launched Kisan call centers as centrally sponsored scheme under the Union Ministry of Agriculture across the country to deliver extension service to the farming community. The purpose of these call centers is to respond to issues raised by farmers, instantly, in the local language. There are call centers for every state which are expected to handle the queries from any part of the country. Queries related to agriculture and allied sectors are being addressed through these call centers. When a call is received by a KCC representative, he/she answers the query based on his/her knowledge and a computerized knowledge database created over the years. Call centre representatives are of various levels ranging from Agriculture graduates / post graduates to subject matter specialists and scientists. In case a higher level of expert advice is required, the representative arranges for a call-conference with the expert and also sends the query to his/her nodal officer. Nodal officers are senior agricultural scientists and experts located in the government system, agricultural universities and ICAR institutes.

In order to monitor the activities of Kisan Call Centers, a State-level monitoring committee has been constituted comprising Secretary (Agriculture), Directors in Agriculture and allied Departments, a representative of local BSNL office, and the nodal officer. The committee reviews the issues related with organization of training programmes, publicity and
telephone connection issues, and ascertains the authenticity and accuracy of answers given by KCC representatives to farmers. In 2011-12, over 20 lakh calls were received by the Kisan Call Centers and 9 lakh calls in the previous year. Since its inception in 2004, KCCs have received more than 62 lakh calls. At present, 25 KCCs are operating in the country.

**Digital Mandi and Agricultural Commodities Exchanges**

To introduce future trading in agricultural commodities in India, two commodity exchanges have been introduced in 2003 for future trading. They are National Commodity & Derivatives Exchange Limited (NCDEX) and Multi Commodity Exchange of India Limited (MCX). It purposes to offer an electronic trading platform for trading in a host of commodities, both agricultural and non-agricultural to various market participants, primary producers including farmers, traders and processors. NSEL attempts to remove the middle man. They are the first to show up agricultural commodity index in India. These exchanges are majorly dealing in agricultural commodities. They are involved in forward trading to mitigate price risks of the farmers.

Commodity exchange in India plays an important role where the prices of any commodity are not fixed, in an organized way. Earlier, only the buyer of produce and its seller in the market judged upon the prices. Others never had a say. Today, commodity exchanges are purely speculative in nature. Before discovering the price, they reach to the producers, end-users, and even the retail investors, at the grass-root level. It brings a price transparency and risk management into the vital market.

In 2003, **Digital Mandi** project was developed by Media Lab Asia, Zonal Coordination Unit-IV ICAR – Kanpur, Shramik Bharti, Wifin Technologies, Food Corporation of India (FCI), IIT Kanpur.

Digital Mandi is an agricultural information portal for the farmers that aim at providing pricing information, higher yields for outputs. The Digital mandi is another new concept which works through internet access. Every State’s agriculture marketing board gives an option on their website as online mandi, where a farmer can register himself and start trading in this mandi.

**ORGANIC FARMING**

Organic agriculture is a holistic production management system which is supportive to environment, health and sustainability. Organic farming system emphasizes on the use of organic matter for enhancing soil properties, minimizing food chain associated health hazards and attaining closed nutrient cycles, the key factors for sustainable agriculture.

Organic farming is an important pillar of sustainable agriculture, which is beneficial for both producers and consumers. India has a great potential for organic farming using traditional wisdoms prevailing in the villages of India. In fact, a large section of Indian agriculture uses more or less organic methods of farming, using minimum level of chemical inputs. Promotion of organic farming in India could prove beneficial to increase the share of Indian agricultural export in the world export.

Organic farming has emerged as a potential alternative for meeting food demand, maintaining soil fertility and increasing soil carbon pool. However, Indian organic farming industry is almost entirely export oriented, running as contract farming under financial agreement with contracting firms, and as per the latest report, about 585,970 tonnes of organic products worth US$ 6.8 million are being exported from India. Most of the farmers are opting organic farming due to price margins which may shift motive of the commercial farmers towards economic vantage rather than for safe agricultural produce to competitively discourage small farm holders. Additionally, limitations regarding bulk availability of organic supplements further constrain organic farming in India. Despite these issues, the increasing market demand and
in institutional support coupled with growing inclination of farmers to go organic have resulted in rapid growth in certified organic area during the last 2-3 years. The objective of this review is to assess the status and potential of organic farming and the constraints therein impeding the adoption of this sustainable agricultural practice in India.

**Production and Exports**

The aggregate production of organic agriculture came to about 14,000 tonnes during 2002 and the exports amounted to 11,925 tons. Details are given in table

<table>
<thead>
<tr>
<th>Products</th>
<th>Tons</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tea</td>
<td>3000</td>
</tr>
<tr>
<td>Rice</td>
<td>2500</td>
</tr>
<tr>
<td>Pulses and Vegetables</td>
<td>1800</td>
</tr>
<tr>
<td>Cotton</td>
<td>1200</td>
</tr>
<tr>
<td>Wheat</td>
<td>1150</td>
</tr>
<tr>
<td>Spices</td>
<td>700</td>
</tr>
<tr>
<td>Coffee</td>
<td>550</td>
</tr>
<tr>
<td>Cashew nut</td>
<td>375</td>
</tr>
<tr>
<td>Pulses</td>
<td>300</td>
</tr>
<tr>
<td>Herbal products</td>
<td>250</td>
</tr>
<tr>
<td>Oil seeds</td>
<td>100</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>11925</strong></td>
</tr>
</tbody>
</table>

**Government’s Efforts towards Organic Farming**

Central government has taken many measures to promote organic farming in Indian agriculture; A National Institute for Organic Farming has been established to spearhead research in organic agriculture. The government of India constituted task force had also recommended the initiation of the postgraduate level courses in organic farming. The Morarka Foundation and Maharana Pratap University of Agriculture and Technology (MPUAT), Rajasthan have collaborated in the design and implementation of such a programme. State Governments are also promoting organic farming at their own levels.

**CONCLUSIONS**

Agriculture is the mainstay of Indian economy. In the last 20 years, globalization has made a great impact on the Indian agriculture. There is a significant change in social, physical and economic infrastructure in Indian agriculture. Some new innovations have taken place in agriculture as e-chaupal, digital mandi, online agri marketing etc. Indian agriculture turned into corporate agriculture & continues making a strong presence on the world map. Indian government is taking new steps and measures to improve working and to make efficient infrastructure of Indian agriculture and continuing working towards the welfare of farmers. It has accelerated the growth of agriculture and has improved the framework of Indian agriculture industry. Now we need to pay more attention and to be more focused towards new developments in the Indian agriculture industry.

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