Original Research Article

Analysing the Growth Prospects of Agribusiness Input Sector in India

Abstract

Aim: Agribusiness is undergoing huge transformation. Seed, fertilizer and pesticide sector plays a vital role in agribusiness. The aim of this paper is to study about the overview of agribusiness system in Indian and to analyze the growth prospects for agribusiness in India.

Study Design: Secondary data was collected from various government websites and reports. The data was organized and analysed to fulfil the objective of the study.

Methodology: Compounded Annual Growth Rate (CAGR) was used to analyse the data.

Results: Results revealed that the production, sale and consumption of major agricultural input-based agribusiness are growing with a CAGR of 2 per cent on an average. This revealed the scope for input-based agribusiness in India.

Keywords: Agribusiness system, Seed, Fertilizer, Pesticide and CAGR

1.1 Introduction

Agriculture is undergoing a huge transformation. In the past, agriculture was seen as a subsistence activity of farmers involving crop and livestock production. For centuries agriculture was the same as farming, and most people lived on farms or nearby and were largely self-sufficient. This is, however, changing substantially in recent years. Today, agriculture is rapidly turning into a technology and market-oriented industry which extends from agricultural production to sophisticated agri-science, and agribusiness [1]. It now connects strongly to the national and global economy. Many people who work in agriculture do not work on farms but are engaged in businesses of seed, fertilizer, agrochemical, farm machinery, food processing, marketing, and trade. Many are engaged in finance, research, distribution, and marketing activities that provide services to the production agriculturalists. Agriculture has become a big business.

The objective of this paper is to study about the overview of agribusiness system in Indian and to analyze the growth prospects for agribusiness in India.

1.2 Methodology

The study is descriptive analytical and based primarily on secondary data. The growth prospect of the sector was analyzed using compounded annual growth rate (CAGR).

CAGR was worked out by using, $\mathbf{Y_t = AB^t}$

Where, $\mathbf{Y_t}$ is the dependent variable during the year't', **A** is a constant term and **B** is the parameter to be estimated.

By taking the natural logarithms on both the side of the equation, the following form was obtained.

$$\text{Log } Y = \text{Log } A + t \text{ Log } B$$

By taking log A = a, log B = b,

$$\text{Log } Y = a + bt$$

The CAGR is given by, CAGR = [(Antilog of b) -1]*100

Results and Discussion

1.3 Agribusiness System in India

The pioneers of the field of agribusiness at the Harvard Business School, Davis and Goldberg (1957) [2] defined agribusiness as the total of all operations involved in the manufacture and distribution of farm supplies; production operations on the farm; and the storage, processing, and distribution of the resulting farm commodities and items. Another definition describes it as consisting of profit-motivated enterprises involved in providing agricultural supplies and/or in the processing, marketing, transport, and distribution of agricultural materials and consumer products [3]. Roy (1980) [4] defines agribusiness as the coordinating science of supplying agricultural production inputs and subsequently producing, processing, and distributing food and fiber. Many authorities exclude farming, or the actual production of food and fiber, from the definition of agribusiness. Production agriculture is indeed a business but is often separated from agribusiness. [5]

Agribusiness provides inputs to the production agriculturalist (farmer), and the production agriculturalists produce food, fibre, and by-products. Input agribusinesses provide farmers with supplies and equipment needed to produce and protect their crops. Many provide services such as credit, insurance, and information. The output is taken by output agribusiness firms that process, market, and distribute the agricultural products (same presented in figure 1

Agribusiness traders and commodity organizations are engaged in buying and selling as well as coordination, promotion, advertising, and even lobbying for agricultural products. Many are engaged in food marketing and services [6]. Research, education, and extension help improve the performance of agriculture and agribusinesses. Millions of people are employed in agribusinesses, and people throughout the world depend on agribusinesses, some for production needs and others for food and non-food requirements. [7]

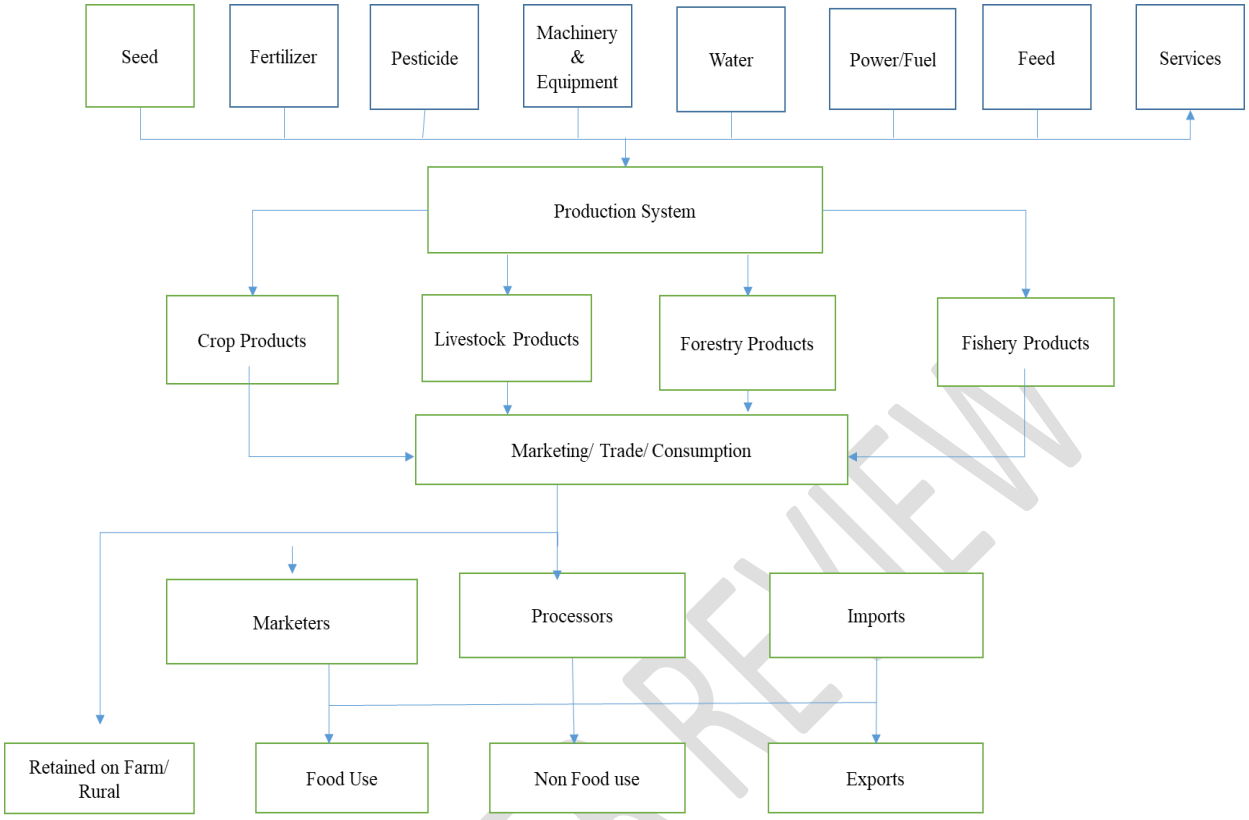

Fig 1 . An Overview of the Agribusiness system

1.4 Growth of Agribusiness in India

The development in agriculture has galvanized the growth of numerous agribusinesses industries. This includes the seed industry, fertilizer industry, irrigation equipment industry, agrochemical industry, and farm machinery industry. These agribusinesses are making a huge contribution to the overcoming of land and resource constraints in agriculture. It would be unthinkable to envision feeding the world today without the contribution of these vital agribusinesses [8]. The growing population pressure, the resulting food demand, as well as the need to boost rural employment and incomes, has also pushed the governments and international development organizations into putting enormous efforts to improve agricultural productivity [9]. This includes fostering the development of the necessary agribusinesses.

There exists greater scope for agribusiness in India. The growth in sales, consumption and production pattern of major agribusiness sector namely seed, fertilizer and pesticide sector were presented in table 1, 2 and 3 respectively to understand the greater scope that exit for agribusiness in India.

Table 1 Sale Patterns of Seed, Fertilizer and Pesticide in India

Year	Seed (Lakh quintals)	Fertilizers (Lakh Tonnes)	Pesticides (Thousand Tonnes)
2008-09	215.81	249.10	43.86
2009-10	257.11	264.90	41.82
2010-11	277.34	281.22	55.54
2011-12	294.85	279.90	52.98
2012-13	313.44	255.36	45.62
2013-14	301.39	244.82	60.28
2014-15	303.12	255.80	56.12
2015-16	304.04	267.53	50.41
2016-17	348.58	259.49	52.75
CAGR (%)*	**2.02**	**-0.80**	**1.37**

*calculated by the researcher Source: Directorate of Economics and Statistics, Ministry of Agriculture India, 2021

From the table 1, it could be observed that the sale of seed, fertilizer and pesticide sector were growing at the rate of 2.02 per cent, -0.80 per cent and 1.37 per cent respectively. It could be observed that the seed sector in the agribusiness production system is growing at a faster rate in comparison with fertilizer and pesticide sector.

In table 2 the consumption pattern of seed, fertilizer and pesticide sector in agribusiness production system is presented.

Table 2 Consumption Patterns of Seed, Fertilizer and Pesticides in India

Year	Seed (Lakh Quintals)	Fertilizer (Thousand Tonnes)	Pesticide (Thousand Tonnes)
2010	278.76	281.22	55.54
2011	283.87	277.90	52.98
2012	294.23	255.76	45.62
2013	298.65	244.82	60.28
2014	301.39	255.76	56.12
2015	303.12	267.53	58.22
2016	304.04	259.49	52.76
2017	348.58	260.78	62.18
2018	352.01	274.71	53.45
2019	378.09	265.58	57.65
2020	386.78	278.98	54.35
CAGR (%)*	**3.14**	**0.79**	**1.18**

*calculated by the researcher Source: Directorate of Economics and Statistics, Ministry of Agriculture India, 2021

From table 2, it could be observed that the compounded annual growth rate of seed sector is greater (3.14%) followed by pesticide (1.18 %) and fertilizer (0.79 %) sector. This showed the faster growth of seed sector in the agribusiness production

system and the greater scope for the growth of seed and pesticide sector could be observed for the growth rate exhibited by the agribusiness sectors.

The production pattern of seed, fertilizer and pesticide sector in India was analysed using compounded annual growth rate to understand the scope of agribusiness production system and the data pertaining to it are presented in table 3.

Table 3 Production Patterns of Seed, Fertilizer and Pesticides in India

Years	Seed (Lakh Quintals)	Fertilizer (Thousand Tonnes)	Pesticide (Thousand Tonnes)
2010	312.13	163.80	147
2011	324.23	166.27	158
2012	330.75	160.24	164
2013	345.58	163.38	179
2014	351.77	165.15	186
2015	343.52	178.10	188
2016	380.30	179.49	213
2017	419.41	180.79	213
2018	398.88	190.87	162
2019	431.01	192.93	167
2020	483.66	194.79	178
CAGR (%)*	**2.67**	**4.99**	**1.34**

*calculated by the researcher Source: Directorate of Economics and Statistics, Ministry of Agriculture India, 2021

From table 3, it could be observed that the compounded annual growth rate for the fertilizer sector (4.99 %) was found to be greater than seed (2.67 %) and pesticide sector (1.34 %).

This showed the greater scope for the growth of the agribusiness sector in India. Hence to strengthen the basic agribusiness production system of India, there is a need for implementation of high-performance work system for Indian agribusiness firm to be competitive globally.

1.5 Conclusion

The agribusiness sector in India is expected to gain better momentum in the next few years due to increased growth and investment. The production, sale and consumption of major agricultural input-based agribusiness are growing with a CAGR of 2 per cent on an average. The government of India is also aiming to reach a target of 60 billion USD in export, which can be achieved through the development of agribusiness input sectors like the seed, fertilizer, and pesticides sectors of India.

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