Growing of the Agriculture Industries in India.

B.Basu

Former G.M. Reliance Industries , Research Scientist.

Thane, Mumbai.

Abstract : The Agriculture Industry is dependent on Nature and Natural resources and Calamities. Inspite of all the constraints , it is growing and becoming the pioneer industries today not only able to feed all the people of India and even abroad , but also employs 56% of the total population. There is robust growth of 4.6% . There are technological achievements in every corner and expecting even more. This Industry is the oldest (as old as 10-12000 years) in parallel to cotton. Today India is the highest Producer of Cotton (next to china) ,Wheat, sugar canes, milk, and that of second highest Producer of fruits and vegetables. Because of the higher input and variable costs, the farmers are suffering although high price rise. There are ways & means to overcome the difficulties with proper Management , Govt policies and technical support.

This paper has described in details of the positive and negative sides of this Industries**.**

Key wards: price rise, natural calamities, pesticides , value added products, technical know-how.

[1] Introduction

: The Agriculture Industry is such an Industry which runs in parallel to the Nature`s wish. Although the Technology has improved in several areas of weather forecasting, AI, but by & large it has got impact on natural Calamities like excess rain, scanty rain, floods, too much heat, insufficient water resources, storm, and others. For anything excess, our Govt, our country and the people find in distress.

Agriculture plays a vital role in India's economy. 54.6% of the total workforce is engaged in agricultural and allied sector activates [1](Census 2011) and accounts for 17.8% of the country's Gross Value Added (GVA) for the year 2019-20 (at current prices).[2] 31-Mar-2019 (net survey.)

It can be divided into two major categories (1) Dry land and (2) wet land. It depends on (i) Seed (ii) Fertiliser (iii) Pesticide. The Forestry and that of Fisheries are also included in Agriculture Industries. And for every aspect sound marketing strategy and supply chain is required. This industry is also depending on the types of Soil which is directly related to the value-added productions which varies from place to place.

There are the advancements in the Technologies of these Sectors like availabilities of 100% Tractors, introduction of the Harvesting machine, (Single and combined), water availabilities from the tube wells, Dams, Canals etc. The Fertiliser sectors where there are the availabilities with latest types of organic manures, there is increase in the storage capacities, end numbers of mills have come up, easy loan system to the farmers, have motivated this largest sector to come up in vigorous ways. As on today, a farmer can earn as high as Rs. 4000/- pm to Rs.6000/- for the dry lands and Rs. 20-25000/- to the wet land cultivation. The Fishing Industries are fetching higher income depending on types of Products (market survey) [3]

Till this Industry is not as per the satisfaction level of the farmers because of the sudden disasters, time to time water scarcity, middlemen, insufficient storage capacity, absence of the proper technical guidance by the Agriculture Scientists and a seasonal production. But with the new and newer Govt Policies in infrastructure (such as transport, ports, telecommunications, energy, and irrigation facilities), coordination, technology, Rs.6000/- scheme we are sure that it will be the most leading industry with highest employment and GDP.

[2] The history of agriculture in India

Agricultural communities developed approximately 12-10,000 years ago when humans began to domesticate plants and animals. [4] (Net survey). It was started with the Indus valley civilization. It is found that in the history of India, the rice and cotton were the two crops that were cultivated in the Indus valley. (07-May-2022net survey)[5]
It first come from the west of the Indus system. Mehrgarh, in the northeaster Baluchistan which was the first village to witness the beginning of agriculture in India in the 5th millennium BCE.

The Indian cropping season is classified into two main seasons-(i) Kharif and (ii) Rabi based on the monsoon. The Kharif farming seasons is from July –October during the south-west monsoon and the Rabi farming seasons is from October-March (winter).

Neolithic

The Indus cotton industry was well developed, and some methods used in cotton spinning and fabric manufacturing continued to be practiced till the modern Industrialisation of India. It is learnt that mango and muskmelon are native to the Indian subcontinent. Other Natural Fibres such as, flux, Hemp etc was originated in African countries, but their uses were found in Egypt and in Harrapan valleys (Expert Opinion). The Jute was discovered western Han Dynesty in China and used to be use as food in ancient Egypt. The Rice, pulses. Beans, jawar, Bajra etc were developed at the age of neolithic age. (Wikipedia)[6] Storage, irrigation system was developed in the Indus valley civilisation.

Vedic era: The usage of Cow dung started in Vedic era (1500 BCE); Horse drawn chariots faster than Bullock cart was found in Mauryan Dynesty. Cultivation of cereals was started in Vedic era.

Early Common Era : (200-1200 CE) In the Dravid region there were wide range of cultivation of crops such as rice, sugarcane, millets, black pepper, various grains, coconuts, beans, cotton, plantain, tamarind and sandalwood. Jackfruit, coconut, palm, areca and plantain trees were also known. Systematic ploughing, manuring, weeding, irrigation, and crop protection was practiced for sustained agriculture. Water storage systems were designed during this period. A dam was built on river Kaveri during this period, is one of the oldest water-regulation structures in the world still in use. (Wikipedia) Shipping was started for the various items from that time only.

Late Middle Ages (1200 – 1526 CE): The irrigation Technology & that of system brought up the growth. Wheat started growing in North India, rice in eastern part.

Mughal Era (1526 – 1757) Indian agricultural production increased under the Mughal Empire, during which India's population growth accelerated. A variety of crops were grown, including food crops such as wheat, rice, and barley, and non-food cash crops such as cotton, indigo and opium. By the mid-17th century, Indian cultivators begun to extensively grow two new crops from the Americas, maize and tobacco.[7](Wikipedia)

Colonial British Era (1757- 1947): The crops like Cotton, Rice, Wheat, Indigo, Opium etc became global market during that time. There was increasing of cultivation of land by 1% per year (Wikipedia)[8] and increase in Canal networks especially in Punjab, Narmada valley, Andhra boosted the agriculture system. But in Bengal areas the non-food crops were doing better than food crops. The population growth enhanced while food production declined. Bengal witnessed two Famine in the year 1770 and that of 1943.

Republic of India (1947 CE 0nwads): Grow more food, Five-year plan oriented towards Agriculture Developments. Land reclamation, Land developments, mechanisations, electrifications, use and production of Chemical & fertilisers, brought green revolution in India. Significant growth was found in agriculture and related Sectors. Fruits, meat, fish, vegetables consumption started increasing. Export started 10.1% in 1990. (Wikipedia)[9]

Now India is the largest producer of wheat, edible oil, potato, onions, spices, tea, fish fruits, rubber etc. Mango (Alfanso) is the best export earner at present.

There are 14 National Research Centres. 6 National Bureaux. 13 Directorates/Project Directorates situated in India who are largely helping the farmers. There are 70 Agriculture universities in India. With 101 ICAR institutes and 71 agricultural universities spread across the country this is one of the largest national agricultural systems in the world.

(The darker sides are discussed in latter part)

The Damodar Valley Corporation (DVC) was established on 7th July 1948 with the objectives of irrigation and water supply for industrial and domestic use; generation, transmission, and distribution of electrical energy; Promotion of afforestation and control of flood.

During 2003–04, agriculture accounted for 22% of India's GDP and employed 58% of the country's workforce. India is the world's largest producer of milk, fruits, cashew nuts, coconuts, ginger, turmeric, banana, sapota, pulses, and black pepper. India is the second largest producer of groundnut, wheat, vegetables, sugar, and fish in the world. India is also the second largest producer of tobacco and rice, the fourth largest producer of coarse grains, the fifth largest producer of eggs, and the seventh largest producer of meat.

[3] Economic Survey 2022-23: Agri growth rate falls but sector still resilient amid pandemic shock [By Shagun Published: Tuesday 31 January 2023][10]

The agricultural growth rate has fallen to 3 per cent in 2021-22 from 3.3 per cent in 2020-21, according to the Economic Survey Report 2022-23 tabled in the Parliament on January 31, 2023. The table below has shown the year wise growth rate.

Year	Growth rate %	Year	Growth rate%
2015-16	0.6 (draught year)	2019-20	5.5
2016 – 17	6.8	2020- 21	3.3
2017-18	6.6	2021 – 22	3.0
2018- 19	2.1 (draught year)		

The Economic Survey points that adverse impact of climate change. landholdings, sub-optimal farm mechanism, low productivity, rising input costs have the effect on Less profitability of the Farmers (T.O.I, Mumbai 20.08.23.) [11]

But today, it has the robust growth of avg 4.6% for last six years!

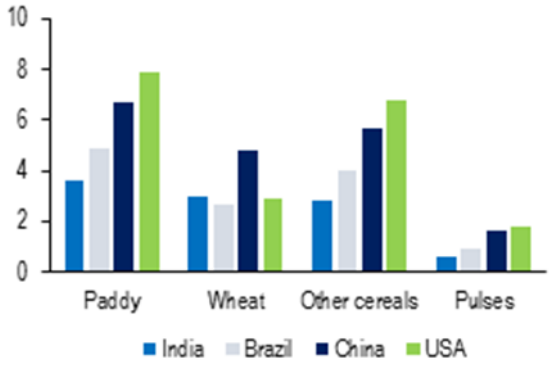
The picture 1 as published in Times, Mumbai dated 20th August 23 expressing lower profitable in all Agro products. It is basically due to the higher input cost vs. the selling

price. The Authar found the margin is based on the "A2+FL" input cost that includes a farmer`s expenses as well as the value of family labour. The MSP is calculated by adding 50% return to the A2+FL Cost.

[4] Developments in Indian Agriculture Industries: The Wheat Production has risen to triple times in last 50 years and that of rice has grown double the capacity. Today there is no dearth of any food quantity although sometimes some are to be imported.

Today, the farmers or crop producers are getting various agriculture support with the advancement of technology, security and so many. We are the highest producer of Organic substances having 59.1 lakh hectors with 44.3 lakhs farmers producing food grains and crops free from chemicals and pesticides, improved soil health and reduces pollution. (31.01.23, net) [12]

Our Export and imports both are showing annual growth rate of 15%. To day India is the top producer of Cotton (next to Chaina), wheat, rise pulses, Sugar cane etc. (Fig 1) It is also at top as a milk producer and 2nd highest producer of fruits and vegetables.



Sources: Food and Agriculture Organization of the United Nations; PRS.

Fig: 1.

[5] less profit to the farmers and why? Refer – Fig -2

TIMES NATION

SUNDAY TIMES OF INDIA, MUMBAI
AUGUST 20, 2023

Rice to cotton, rising costs have made farming less profitable

While food prices have been rising over the years, Atul Thakur's analysis shows farmers' margins on all major crops have steadily declined

TIMES Special

Around 2010-11, India's sugarcane farmers earned roughly ₹2.8 for every rupee they invested in their crop. By 2020-21, they were making only about ₹2.1 on every rupee. For cotton farmers, profitability has declined even more. They earned about ₹1.8 on every rupee spent around 2009-10. By 2020-21, it was down to ₹1.3.

This has happened because agricultural costs have risen faster than farmers' earnings per hectare. For crops like cotton, the earnings have, in fact, stagnated.

Graphic: Anil Dinod

Pain Of Costly Inputs

Fig: 2. Times Mumbai – 20.08.23

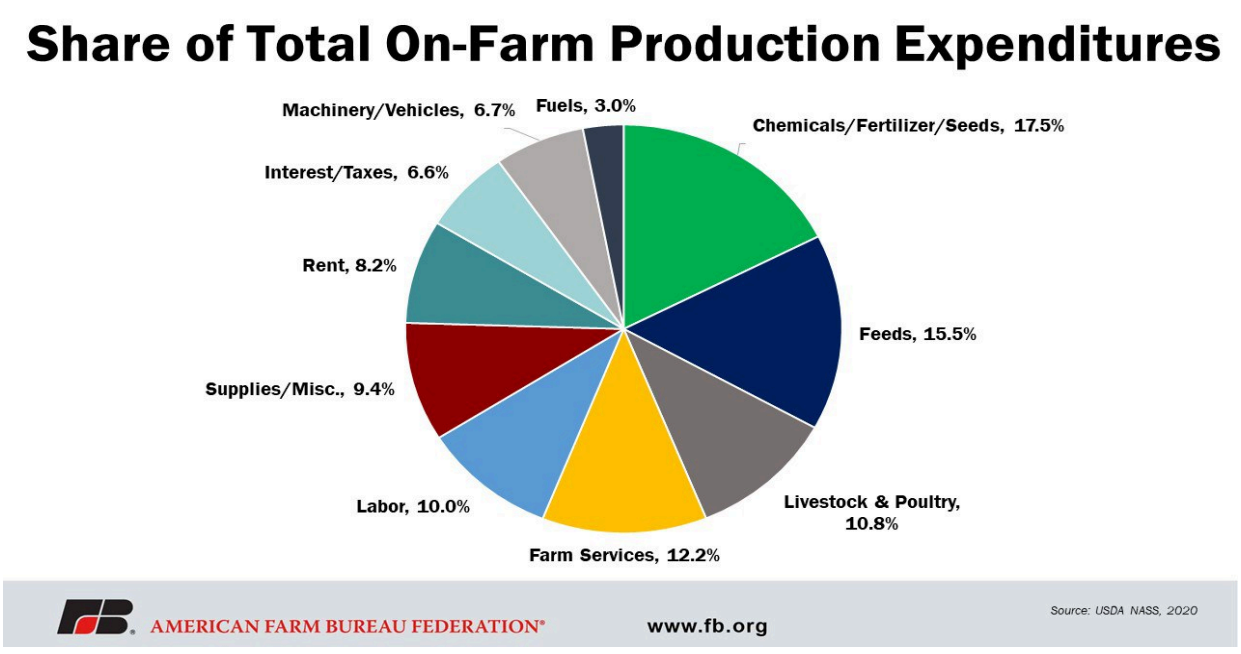


Fig – 3

[3.1] The Fig -2 has shown that highest cost borne by the farmers are seeds, chemicals and fertilisers which accounts to 17.5%. Lowest is the fuel cost. These statistics can vary state to state and place to place. Regarding the farmer's agitation in Maharashtra regarding Onion Price, the Principal Scientist, Shri Amarjeet Gupta (Directorate of Onion & Garlic Research Centre, Rajgurunagar) said "the total expenditure for growing Onion on one acre is Rs. 40,000.00 to Rs.60,000/- which covers the cost of Fertilisers and pesticides (T.O.I 24.8.23).[13]

[3.2] It is found that there are (i) Input Costs (ii) Variable Costs and that of (iii) Fixed costs.

Input costs includes Fertilisers, pesticides, seeds, animal feedings. The variable costs include fuel & oil, electricity, labour, repair and maintenance, water use & storage, The fixed costs are that of machinery, Taxes, asset depreciations, rent and interests etc. (source: Firm bureau analysis) [14]

[3.2.1] **Why Input costs getting higher?** (i) Pesticides: Now a days at some places it requires to spray as high as three times. When the natural fertiliser like cow dung used to be use, there were natural habitants used to grow and less worms &insects used to damage the crops. Now because of the usage of the Chemicals, the natural habitants gradually disappeared. Moreover, the resistance power of the worms& insects grown up and hence the usage of the pesticides increased. (ii) Fertilizer prices have risen nearly 30 per cent since the beginning of 2022, following last year's 80 per cent surge. The rise was driven by factors like surging input costs, supply disruptions due to sanctions (Belarus and Russia) as well as export restrictions in China.01-Jul-2022 (net survey).[15]

[3.2.2] Family labour costs are getting higher as the most of modern young generations do not like farming and to cope up with their high living cost which comes from the farming lands only, the expenditures are going up. During earlier days, the younger generations used to support the family business with physical presence, which are now getting done by the labours.

[6] BPL in Farming Industries

Over 20% of our farmers live below the poverty line. Evidence suggests that the speed with which the agriculture sector reduces rural poverty is at least twice of what the rest of the economy and when growth in agriculture is rejuvenated, poverty decline became faster. (PTI)[16]

Over the last decade, India has experienced sustained economic growth, bringing opportunities and prosperity to millions. This is particularly true for those who rely on agriculture for their livelihood. While India's overall GDP growth rates have ranged between 7-8%, agriculture has grown between 2-3%. (Hindustan times, 26 Aug 23) [17]

Cheapest option for India to boost farmers' income

The new formula of fixing support prices at 50 percent above output costs and its implementation will make a big contribution toward meeting the government's goal of doubling farm incomes,the purchase of crops by government agencies at support prices and providing incentives to private companies to directly buy from farmers.

[7] Why such BPL? (As written by prof Nilanj Banik, Mahendra University, NIICE)

1. About 86% of the farmers are found to be small and marginal having less than two hectors of land
2. Because of the low mechanise, it is found Rs. 14,391/- per month avg.
3. Poor access to finance
4. Insufficient Cold storage facilities.
5. The small (1&2 hector) and that of marginal (< 1 hector) can grow only 23.61% and that of 22.22% high value crops.
6. Access to transport: The truck capacity – 10 ton, whereas most of them can produce 2.400 kg.
7. Access to Market: Because of the insufficient Agricultural Market and Mandies, not found within their vicinity, they must sell it to middleman.
8. Access to Information /Financial Products: A huge % of them are not much aware of the subsidised schemes of the Govt and Financial helps, have to make the ownership of the Products as lower. Only 1.67% of farmers own crop & cattle insurance.
9. Apart from Cold storage there should be food processing Units for the perishable items like fruits, Vegetables and milk that will reduce the poverty level of the farmers 3 to & 7%.

Suggestions:

1. To build more e – markets which will double their income. Direct sale to the shopping malls will boost their source of income.
2. More Modernisations are to be done like AI towards weather forecast, good infrastructures and connectivity with states and cities.
3. To modernise the Farming Industry.
4. More and more technical helps support is to be received from the research institutes which is not just sufficient as they say.
5. Innovations, new value-added product, technology developments with self motivation or with the guidance of the Agriculture scientists will boost the earnings of the present day farmers.

Fig – 4, Modern harvesting machine

[8] The Facilities provided to the farmers.

Do rich farmers pay taxes in India?

Agriculture is exempt from income tax under Section 10(1). Taxes on agricultural income falls under Entry 46 in 'State List' under the Constitution of India. Thus, only the State Governments are competent to enact legislations for taxation of agricultural income and levy income tax.04-Oct-2022

Free and Subsidised Electricity:

In India, farmers use electricity mainly for energizing irrigation pump sets to extract groundwater. The number of electric tube wells has increased tremendously over time with the availability of free electricity.

Certain states offer free electricity such as Rajasthan, Andhra, Karnataka, T.N. but some give subsidy like Kerala 50% up to 50 units, Haryana discount of Rs. 2/- ,Punjab Rs.5.66/- per unit , Maharashtra support by paying Rs. 6000/- per year per family. W.B offers 40 % subsidy but 50 % to SC.ST and female Farmers.

What other facilities are provided to farmers?

Assistance is given to farmers on distribution of improved seeds/hybrids, farm implements/machines, irrigation devices, plant protection chemicals, bio-pesticides for promoting Integrated Pest Management and soil ameliorants, etc. through State Government.01-Aug-2017

[9] Conclusions:

- There is no doubt that today India is the leader and pioneer in producing food and non-food production . It is possible by our Agriculturists who are at top.
- Till there are some small farmers who need to be supported by the govt agencies and Agriculture scientists . Special attentions are to the given for the value-added crops and vegetables to enhance their earnings.
- AI should be there for the coping up with any short coming of natural calamities.
- Sufficient Cold storage facilities should be there.
- Food processing units are to be installed for the upgradation and to increase the sales value of their products.
- More scientific methods are to be adopted in reduce the Input costs.

Acknowledgements: Mr. Gautam Ghosh, Nasik.

Mr.Sandipan Das Mazumdar , Kolkata

Mr. Akash Pawar, Beed Dist, Maharashtra.

Mr. Pawar, SGGS, Nanded

Mr. Krishna, dist : Parbhani , Maharashtra.

Mr.Atharbha Deshpande , Dist Beed , Maharashtra

About The Author: B. Basu.
Thane - 400 601

9867682084, mail id : Bibekananda.basu1502@gmail.com

Retired GM - RIL Group.
Ex – Manager CTS, Orkay Polyester, Mumbai
Ex- Manager CTS & Process Control, Beekaylon Ind. Silvassa. ,
Ex Scientist BTRA (Bombay Textile Research Association, Ghatkopar, Mumbai
Ex- Head & Co Ordinator of Sasmira Power loom Service Centre, Bhiwandi.
Ex Faculty, SGGS, Nanded.
Ex Faculty, T& P Officer, MR - ISO AEC, Chikhli.
Ex Visiting Faculty - VJTI, SGGS, Sasmira
Textile Expert
Published 84 papers in National & International Level