
SUSTAINABLE FARMING PRACTICES IN INDIAN AGRICULTURE

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ABSTRACT

Right from the time of inception we Indians have been majorly depending upon Agriculture. Our major Economy & Revenue is generated from the cultivation & farming. We are inherently rich with natural resources. We have 29 states & each state is rich in its own way & its Uniqueness We also have 6 types of Soil in India but majorly 3 are basic types sand, silt & clay. However Alluvial Soils are the most important soil group covering a major area approximately at around 47% of the countries land area & these soils majorly contribute towards the largest share of our wealth which is generated through Agriculture & support the bulk of Indian population for their bread & butter, Indian Economy, Exports, food supply etc. As a result of early cultivation & domestication of crops, plants & animals thus Indian Agriculture begun 9000 years back approximately! Since then one realized the importance & its usage to the maximum peak for production purpose. Well the objective behind studying this topic mentioned by me is to understand the importance of farming in India, its evolution from the time of start & its phases of improvement, development & its benefits to the 3 P'S people planet & profits!

Key Words: Indian Agriculture, phases, Development, Benefits & Sustainability.

1. Introduction:

Indian Agriculture is one of utmost significance to our Indian Economy This sector is one of the major sector largely wide spread across in our country. Thus as per the data & studies done the Author tried to express & reveal Agriculture & its dependents as it is the source of Livelihood to our Indian Population. Approximately provides food out of Agriculture to more than 1 billion population. It is a major component of National Income. The field of agriculture has a lion's share in revenue generation, creating job opportunities both in organized and unorganized sector, rural economy and domestic consumption. It is observed that more than 50% of India's workforce is engaged in the agriculture sector. In addition, it has 18% share of total GDP of India economy at present. Naturally, it plays a significant role from employment generation, social equity and financial stability perspectives. It support the Agricultural Industries. It's of commercial importance & sources of Government Revenue. India in Agricultural sector produces pulses, rice, wheat, spices, mustard, fruits, vegetables etc. in bulk which is not only consumed within India domestically but across the globe by supplying to the major hubs may it be developed or developing countries ! India is the world's largest producer in above the mentioned. The data extracted from statistics shows the total geographical area in hectares is 328 million out of which the area sown for the purpose is 142 million hectares, gross cropped area sown 190.8 million hectares, provides food to more than 1 billion population, produces 51 major crops & contributes to 1/6th of the export earnings Net irrigated area is 56.9 million hectares. (Statistical figures

are taken from the Review Reports)Agriculture is the backbone of the Indian economy .75% of the population living in rural area are still dependent on Agriculture.Thus the major Role of Indian Agriculture in Indian Economy , employment generation, sustainable development , awareness in using the latest technologies.

2. Transformation of Indian Agriculture:

Farming is deeply rooted in the mind, spirit and thinking patterns of Indian since ancient time. The evidences are found in old religious texts, legends, stories etc. The human civilizations have discovered the various ways to survive through which the farming emerged as ‘the way of life’. The availability of water, climatic conditions and hunger to fee self and family paved the ways to find out new ways of farming activities. India is blessed to be a country wherein diversity is witness in the forms of crops, methods, lifestyles, climate, soil, rainfall, eatables and so on. The revolutionary changes witnessed in from traditional to modern practices of farming over the period of time (Early civilization, Mughal Era, British Era and Post-Independence Era in particular).

Indian Agriculture has transformed from Ancient traditional agriculture from 1950’s to modern Technology Agriculture .the study of economic frame work reveals from the traditional low agricultural production processes has now increased to high production of agriculture only due to the modern technologies . Indian Agriculture in ancient days were totally dependent on the man power. Today with the help of latest machines the production processes in Agricultural sector is booming! Farmers are now using the internet grape vine. May it be purchasing of fertilizers or pesticides or seeds even the marketing, buying & selling of grapes are done through Internet. They are no more restricted to the middle men or traders. This is how they are transforming, they started operating technologies, internet banking pay pal etc. they are updating themselves & trying to cope up with the changes in technologies by adopting it all & being abreast with the changes in Agricultural Sector . India’s E-Commerce is growing by leaps & bounds. One of the grape farmers from Nashik district of Maharashtra State named Bhaskar Kamble experimented an innovative idea of selling his products directly to the consumers with the help of using internet-based technology since he has understood the growing importance of digital presence in the market. He created a competitive website as “bestgrapes.co.in” and supports it through Facebook and other social media platform too. It enabled him to sell the products online and empower the consumers to book the order directly. This new experiment was earlier limited to Jalalpur village from Nashik district wherein only 12 to 15 farmers joined with Mr. Kamble. After seeing the results, he made the plans to expand the project throughout the district and then in Maharashtra state respectively. According to him, it is the website which could bring multiple stakeholders together and integrated the products and services. He believes that there are multiple competitive advantages of making an effective use of technology. No brokerage, high price, direct selling, interactions with end-customers are some of them. Moreover, all of these result in increasing the overall profitability of grape farmers.

3. Agriculture Scenario in India

Approximately 16% of the GDP is from Agricultural Sector in the National Level .where as in the state level the contribution to GDP varies. Utter Pradesh Madhya Pradesh, Punjab are the states where a major %tage of contribution from Agriculture is added in the GDP. While Maharashtra is the highest among all the states in the country which contributes towards the GDP. So Agricultural sector plays the

pivotal role towards the contribution in GDP. Thus it itself helps us to understand there is a growth in this Agricultural Sector.

4. Development in Agricultural Sector

Education plays further important role in the lives of the farmers to understand the things, take their own decisions, and start their own farming businesses. There are around 17 Organizations promoting Regenerative Agriculture. These organizations are working to promote their on farm consulting & extension services. There are farmers Associations. This organization comprises of two types of Structures Elected members which represent the farmers & these body is solely entitled to speak on their behalf. Thus they have their say & it's the platform to express their ideas in this sector which also helps all other farmers & take one more step towards their farming development. There is National farmers union & its objective is to protect the farmers & enhance the economic wellbeing & quality of life for family of the farmers. There are Institutions coming up specifically with the domain in Agricultural specialization where in the Aspirants take their bachelor's degree. The farmers can learn through apprenticeship or else they can get the hands on experience working under the experienced farmers or supervisors which helps the farmers further to enhance their confidence knowledge & practical experience. In Sayadhri farms they are also providing the certification courses for the aspirants those who wish to make a career in the Agricultural sector. Well trained experts from Tata are invited to train the trainers & trainees. Thus, they are being not only trained to understand the Agricultural sector but also how to face the interviews most frequently asked questions are discussed in the classroom to develop their confidence . This is how steps are introduced & taken to develop the aspirants. There are 200000+ farmers associated with the National Farmers' Union spread all over United Nations. Farmers from more than 33 states are connected with innovative practices, exchange programs, proposals, and several local as well as national level initiatives in this regard.

5. Benefits & Sustainability: Modern Technology & its advantages to the farmers

5.1 Machines:

Modern machines have helped the farmers to speed up the production process reduces production time. Irrigation system is farmer friendly. Crops are watered easily with the help of machines & variety of accessories in it. Machines are best used by farmers to sow the seeds in row column vertically horizontally & it's very convenient no more manually sowing done which ultimately has helped the farmers save time. To paste the chemicals in the crops with the help of machines which is sprinkled well & at higher distance? It has improved the quality of the soil as well as the crops. Quick supply of the finished goods & demand has increased due to high quality finished product.

5.2 Education

The education is considered to be one of the most significant means of social transformation. It is true in case of farmers too. The farmers can gain the scientific knowledge of farming through joining college or university level programs, certificate courses, training programs, workshops, conferences, exhibitions, excursion, field visits etc. They can understand the best practices, emerging trends related to agriculture, horticulture, dairy technology, agro-economics, crop science, animal husbandry, fisheries, water management, disaster management and other relevant/areas of interest. There are

notable leading universities and educational institutes providing education relevant to agriculture and research activities. The percentage should have increased keeping the growing demand in mind. The Indian Council of Agriculture Research (ICAR) is the national level body and regulator in India. In addition, there are central universities, four deemed universities, and sixty-four state-level agricultural universities spread across the country till December, 2019. Thus the increase in Agricultural Institutes have encouraged more & more students aspirants to take admissions in the college where once can get the degree certificate & PG certificates. Thus the theoretical concepts are clear in Agriculture & practical application becomes easy. Education further helps one to start the business in farming. They are not exploited. They can take their own decisions. Educated farmers help in organic farming, focus on quality. Better exports & more of the revenue are generated.

5.3 Government Schemes introduced:

- E-NAM. ...
- National Mission For Sustainable Agriculture (NMSA)
- Pradhan Mantri Krishi Sinchai Yojana (PMKSY)
- Paramparagat Krishi Vikas Yojana (PKVY)
- Gramin Bhandaran Yojna
- Livestock insurance Scheme

The government tries to safeguard the interest of farmers through bridging demand-supply gap, minimum support prices against high fluctuations in prices, subsidies to farmers, subsidized loans, crop insurance etc. In addition, several initiatives are taken for water conservation, technology intervention, training programs, research activities etc. in order to make Indian farming profitable and sustainable in the long-term. The efforts are taken in the direction of increasing the agro-processing units so that employment is generated, regional balance is maintained and micro, small and medium scale enterprises are set up to the great extent.

The Central Government of India launched one of the most ambitious flagship program known as Pradhan Mantri Kisan Samman Nidhi (PMKSN) recently. It provides the financial assistance of Rs. 6,000 (US\$ 84) for every farmer who has farmland up to 2 hectare (5 acres) as an assured income to manage the daily expenses. As per the statistics of Indian agricultural census of 2015-16, it is revealed that the average farm size is approximately 1 hectare in India.

➤ Banks Providing Loan

- State Bank of India (SBI)- It is the pioneer as well as a leading player in public sector banking with global presence and high market share, customer base etc.
- ICICI Bank. ...
- HDFC Bank. ...
- Punjab National Bank (PNB) ...
- Allahabad Bank. ...
- Axis Bank. ...
- Oriental Bank of Commerce (OBC)

Modern Technology

1. Ecommerce
2. Digital marketing
3. Internet
4. NFU
5. Farmers Associations

The Best Technologies which improved the overall productivity and efficiency of farming activities in the world are mentioned as below:

- Small-scale Potato Harvester. ...
- Automatic In row weeder. ...
- Automatic cow milking machine. ...
- Carrot harvester and separator. ...
- Robotic lettuce harvester...

In order to become more productive, efficient and competitive globally, it is imperative for the farmers to adopt the modern methods of scientific farming, adopt new tools, innovate, research and make use of high-end technology from time to time. In fact, it is the need of an hour. The term ‘agro-tech’ has gained the momentum than ever due to huge potential of bringing revolutionary changes in the field of agriculture. Some of the latest and emerging technologies are: Artificial Intelligence, Cloud Computing, Machine Learning, Ground Positioning Systems, Sensor-based systems, Robotics, Aerial images, Precision Agriculture and others. All of these contribute towards making the agriculture, businesses more eco-friendly, profitable, hygienic, efficient and sustainable to the great extent.

The various governments (central, state and local) have focused on planning and execution of export-driven policy framework so that foreign currency can be attracted and the benefits of high market prices can be transferred to the farmers, traders and other stakeholders. It would create value chain system. However, the efforts for product marketing, segmentation, transport, cold storage, quality, market access, packaging are expected to meet the global market requirements since most of the agriculture products are perishable in nature. All of these can result in increasing the overall percentage of agriculture export to various countries.

It is possible to initiate the strategic move to capitalize the market gap by providing high quality commodities which have high demand. Some of them include fruits, vegetables, food-grains, Livestock, Milk products, Oil, cereals, processed food items, juices, nuts, sugar, and cotton and so on. They can be exported on repetitive basis through sound policies and institutional reforms, consultancies and tie-ups with foreign firms. Higher the export, better chances of sustainability exist for the farmers. It is essential to remove all the obstacles (financial, legal, technical and others) to boost the agricultural exports on consistent basis. As a result, the quality of life, education, more employment generation and financial stability will come into reality for the farmers. People, planet and profits can be integrated through effective utilization of technology, eco-friendly products and result-oriented government policies creating win-win situations for all the stakeholders.

6. Conclusion:

Sustainable farming practices in Indian Agriculture in this Research paper the author has studied the Agricultural Sector. How the farming had begun & over the decade & time the transformation kept happening .The Author also explain in the first paragraph how the farmers those who had their own land started their own farming .Farming in Rice wheat maize, mustard, sugarcane, fruits, vegetables depending on the suitable climatic conditions farmers from different states in the country specialized in their own way. Which was not only cultivated & produced, consumed in domestic market but slowly & gradually it was exported across the globe. It soon became the source of Revenue generation. Once we started exporting. The farmers' Association are formed the government is helping the farmers to take the decisions to produce the crops, fruits & vegetables best quality. so pesticides used were natural organic , modern machines were used where in the production was faster, no waste of time , export quality only , government started providing maximum subsidies, Banks provided Loans . Agricultural Institutions in India expanded; education helped further to enhance knowledge, hands on training, experience, apprenticeship. Modern Media helped in online marketing, direct sales. Exchanging the ideas online, farmers groups are formed wherein they gave a platform to exchange ideas, shared their problems, & discussed the solutions. Exports are increasing, employment is high in Agricultural sector, Training programs are conducted to enhance the knowledge of the aspirants .Now farmers are focusing on organic farming. This is how the transformations is taking place in Agricultural sector. With the primary data, survey it was being observed that the Farmers standard of living is improving. Their children in family are taking education in Agricultural sector; they are having the awareness with the help of Internet as they can use it now. Way of living standard is far better & improving compared to the earlier days.

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