

THE ISSUES AND CHALLENGES OF SUSTAINABLE AGRICULTURE DEVELOPMENT IN INDIA

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ABSTRACT

The objectives of the study are to find the trends and issues and challenges with status of the agricultural sector, to identify areas of intervention that could achieve sustainable agricultural growth, and to find the future prospects and solution for India. The study is collected all the secondary data which includes books journals, newspaper and Web Pages. The study concluded that Indian agriculture is the largest private sector. Agriculture dominates India because it is linked to production, processing, and marketing. Using secondary data, the report examines agriculture's sustainable development. India's rural population relies on agriculture. Sustainable agriculture development increases productivity, efficiency, and employment while preserving natural resources. Multiple agricultural systems, deforestation, and other factors prevent soil degradation.

Keywords: Issues, Challenges, SDGs, Indian Agriculture, Development

1. INTRODUCTION

Sustainable agriculture development has three goals. Environmental, health, financial, and livelihood sustainability. Sustainability is meeting current demands without compromising future needs. Thus, environmental and human resource stewardship is crucial. Stewardship of human resources encompasses social duties such farm family working and living circumstances, rural community requirements, and consumer health and safety now

and in the future. Stewardship of land and natural resources requires long-term preservation and improvement. The Indian agricultural sector contributes to GDP and jobs. Agriculture helps sustain the nation's economy. Sustainable agricultural growth requires prudent use of natural resources. In fact, agriculture affects the fate of a country like India, where two-thirds of the population still lives in rural India and relies on agriculture after decades of urbanisation. Thus, if agriculture fails, GDP and jobs will suffer (thus increasing poverty). Agriculture's rapid growth, which depends on increased cropping intensity, area, and productivity, can help strengthen the sector. In India, productivity is more significant than the other sectors. Due to urbanisation, industry, and land scarcity. Two methods boost productivity. First, increasing output through resource efficiency. Second, changing input increases output. Productivity and sustainability favour the first method. This strategy cannot solve the growing population. Thus, the second way may degrade the economy's ecology and threaten its sustainability. Thus, sustainable agricultural growth must be addressed.

The need for the study is that the agriculture is the biggest platform because it drives economic growth. Agricultural performance in the 1990s was unpredictable and deteriorating. Agriculture must grow rapidly to boost economic growth due to its close association with the economy. To develop at the planned rate, agriculture needs excellent investments in growth-potential sectors. In the last 30 years, the government has discovered that non-targeted agriculture initiatives can fail. Thus, future agricultural investments must be concentrated to avoid disappointments and achieve goals. Even though agriculture has performed poorly, horticulture and dairy have done well. Thus, agricultural investments should target high-productivity areas.

2. REVIEW OF LITERATURE

Mukesh Chahal (2015) believes agricultural technology should shift from production to profit-oriented sustainable farming. Sustainable farming is improving. Farmers, development workers, researchers, and policymakers are seeing new prospects in agree-related companies, dairy, poultry, cattle, and fisheries. Saroj Kumar Singh and Ankita Parihar (2015) have concluded that the small-farm management to improve productivity, profitability and sustainability of the farming system will go a long way to ensure all round sustainability. Bethu Sudhakar (2016) concluded that sustainable agriculture is crucial for a developing nation like India since it increases productivity, efficiency, and employment and provides advice to eliminate practises that degrade soil, water, and other natural resources. Pathak SV, PU Shahare, AS Ghadge and AS Waghmode, (2021) has concluded that the principles of sustainable development require the current generations to meet their own needs without compromising the ability of future generations to do the same toward a more sustainable future. Now it is time for humans to proceed with the remaining steps to truly achieve sustainability for both current and future generations. Lolapu Thirupathi (2021) observed that rural development required reliable public services and technological, social, and environmental conditions to boost regional economies and urban-rural links. In the face of climate change, rural communities must diversify their non-farming businesses and agricultural methods. Sustainable development and infrastructure investments should include rural populations. Sustainable rural development plans in each country and city could aid in the achievement of Agenda 2030.

3. OBJECTIVES

The objectives of the study are to find the trends and issues and challenges with status of

the agricultural sector, to identify areas of intervention that could achieve sustainable agricultural growth, and to find the future prospects and solution for India.

4. METHODOLOGY

The study is collected all the secondary data which includes books journals, newspaper and Web Pages.

5. DISCUSSIONS

The discussions of the study is mainly five parts viz., agriculture sector and production India, sustainable agriculture development, emerging issues and challenges, and future prospects and solution for India.

5.1. Agriculture sector and production India

Indian agriculture is a major industry. Agriculture employs nearly two-thirds of the country's rural workers. Agriculture accounts for 27% of GDP, 21% of exports, and 65% of employment in India. 8.4% of GDP and 35.85% of agriculture output come from cattle. About 43% of India's land is used for agriculture, while 75% of its population lives in rural regions and depends on it. Food grain production is estimated at 211.17 metric tonnes. Agriculture covers 329 MH, 265 of which have producing potential. The country's net sown area is 143 MH, with 56 MH irrigated. The best utilisation of natural and human resources drives most Indian agriculture production. Thus, India is the world's top producer of many commodities due to its agroclimatic conditions and abundant natural resources. Coconuts, mangoes, milk, bananas, dairy products, ginger, turmeric, cashew nuts, lentils, and black pepper are among its top exports. It produces the second-most rice, wheat, sugar, cotton, fruit, and vegetables. Indian agriculture depends on water management. Indian agriculture is limited to the monsoon season. India has abundant rainfall throughout the monsoon season, but sometimes it turns into terror, generating unmanageable floods and harming crop production.

5.2. Sustainable agriculture development

The problems with developing in a way that is good for the environment can be looked at through the lens of three types of farming: traditional production, modern agriculture, and environmentally friendly agriculture. We can also judge them based on the three parts of sustainability: environmental, economic, and social.

- **Ecological Sustainability:** The majority of conventional and traditional agricultural practises do not promote ecological sustainability. They waste natural resources, which in turn decreases soil fertility, leads to soil erosion, and plays a role in the progression of global climate change. However, sustainable agricultural approaches provide a number of significant advantages over more conventional methods.
- **Soil Fertility:** In many parts of India, one of the biggest problems is that the soil is becoming less and less fertile. Fertility and the structure of the soil are both improved by sustainable agriculture.
- **Water:** The use of fertilisers and pesticides can contaminate both surface water and ground water. Irrigation is the industry that consumes the most potable water. Rainfall can be captured and stored more effectively in soil that has a higher organic matter content thanks to sustainable agriculture, which also raises the soil's overall capacity to hold water.
- **Biodiversity:** Mixed cropping is an important component of sustainable agriculture

techniques. By expanding the variety of crops that are grown, these approaches also increase the variety of insects, animals, and plants that live in and around agricultural areas.

- **Health & Pollution:** Both the local population and the local ecology are negatively impacted when chemicals, insecticides, and fertilisers are used. Use of pesticides without sufficient precaution, incorrect storage, and other factors may contribute to health concerns. The use of potentially harmful chemicals and other forms of pest management is reduced in sustainable agriculture.
- **Land use Pattern:** The inefficient use of land can lead to problems such as flooding, landslides, and erosion. It can also choke irrigation channels and limit the land's arable potential. These issues can be avoided with sustainable agriculture thanks to its increased productivity and protection of the soil, among other benefits.
- **Climate:** The production of greenhouse gases is aided in a number of different ways by conventional agriculture, including the reduction of the amount of carbon that is stored in the soil and in vegetation, the production of methane in irrigated fields, and the production of artificial fertilisers, among other ways. This issue can be readily remedied by switching to a more environmentally friendly method of farming.
- **Economic Sustainability:** Long-term economic viability is a necessary condition for agriculture to meet the criteria for sustainability. In the long run, there is a greater chance of losing money with conventional farming than with sustainable farming. There are times when governments have a tendency to place a higher priority on export-oriented manufacturing systems than they do on satisfying domestic demand. This is not correct at all. When you only concentrate on exports, you run the risk of incurring hidden costs in several areas, such as transportation and ensuring the safety of the local food supply. Domestic demand, and food security in particular, should be treated with the same importance as the visible trade balance when formulating public policy.
- **Social Sustainability:** The concepts of social acceptability and fairness are connected to the concept of social sustainability in farming techniques. If poverty is not reduced, then development cannot be considered sustainable. The government needs to devise strategies that will allow those living in poverty in rural areas to reap the benefits of agricultural expansion. When a certain segment of the population is denied access to possibilities for growth, this is an example of social injustice. However, a strong social sustainability system has the potential to bridge the gap between those who "have" and those who "do not." Because of resistance to change from the population at large, many novel technologies never make it to the point where they can be utilised in the agricultural sector. Because they are based on local social customs, traditions, and other such things, sustainable agricultural methods are beneficial. They are more likely to be accepted and adopted by the locals as a result of the fact that they are already familiar with them. In addition, sustainable agricultural practises are founded on both the accumulated wisdom of the past and the innovations of the local community. The people that reside in the area have a wealth of knowledge regarding their environment, agriculture, and cattle.

5.3. Issues and Challenges

The main challenge facing agricultural development today is the need to increase agricultural output, create new jobs, and give people with low incomes a way to make a

living. According to research conducted by the FAO, the average contribution of small farms in developing countries to the total agricultural output is between 30 and 35 percent. Both how quickly India adopts new technology and how its farms are too random and not based on science. India's adoption of new technology is moving at a snail's pace. The revitalization of cooperative institutions, the improvement of rural credit, research, the development of human resources, the promotion of trade and exports, education, and land reforms are some of the fundamental issues that must be addressed for the development of the agricultural sector in India.

5.4. Emerging Challenges and Opportunities

The global food crisis, climate change adaptation, and agricultural income cooperatives need such activities. The five important issues: Land, water, biodiversity, and marine resources were the top priorities for sustainable agriculture. Urbanization was exerting tremendous pressure on available land and water resources. A land-use strategy is needed to reverse the conversion of prime agricultural land to non-agricultural uses. Protecting common property was important. Small farm management in all subsectors—crops, animal husbandry, and fisheries changed drastically. To give small farmers "the power of large production," this approach needed to be promoted. Institutional mechanisms enabling this process should include decentralised production to increase the availability of quality seed with insurance coverage, (ii) delivery of improved technology and associated services to farmers, and (iii) aggregation of produce to improve market access, essentially targeting an "end-to-end" or "farm-to-plate" approach covering production, processing, marketing, etc. To attract youth, farming should be professionally and intellectually rewarding. Agricultural growth should prioritise farm income above productivity. This was crucial to reducing rural-urban disparities and diversifying rural livelihoods in agriculture, livestock, fisheries, and horticulture. Thus, market-to-farmer links must be prioritised.

5.5. Future prospects and solution for India

Any modification to the structure of the agriculture sector, which is a significant contributor to the Indian economy and the centre around which socioeconomic privileges and deprivations revolve, is likely to have a comparable impact on the existing pattern of social fairness. The efficient use of soil, water, livestock, plant genetics, forests, climate, rainfall, and topography is critical to the environmentally sound production of agricultural goods. The restrictions that affect Indian agriculture can be broken down into five categories: resource limitations, infrastructural limitations, institutional limitations, and technical limitations. Policy-generated limitations are the most significant.

A key component of sustainable development is the management and conservation of the natural resource base, as well as the orientation of technological and institutional change in such a way as to ensure the achievement and continued satisfaction of human needs for both current and future generations. This kind of sustainable development (in the agriculture, forestry, and fisheries sectors) preserves the land, water, plant, and animal genetic resources; it does not degrade the environment; it is technically appropriate; it is economically viable and socially acceptable; and it is environmentally non-degrading. Therefore, in order to achieve sustainable agricultural development, it is necessary to make the best possible use of the available natural resources, human resources, financial resources, and technical resources.

Rainfall is a significant factor in determining crop yields in India, which the primary factor is contributing to the slowing growth rate of the agricultural industry. Small farmers

and labourers, who typically live from paycheck to paycheck, are the ones who are the most negatively affected by these uncertainties. Because of this, something needs to be done to help support farmers, and a sufficient amount of water and energy needs to be delivered to them. This is necessary because farmers continue to feel unsafe, and they continue to perish as a result of drought, flood, and fire. India is the second-most populous country in the world, and its government ought to acknowledge the country's massive population as a significant national resource. A large percentage of the population in India is not actively engaged in any activity. There is a pressing need to identify avenues through which their talent can be explored and their numbers may be made to contribute to the expansion of the business. Particularly prevalent in the agricultural sector is a form of unemployment known as "passive unemployment." One way to help India reach its goal of sustainable development is to use all of its human resources to the fullest extent possible.

The majority of the country's low-income population lives in rural areas and works in agriculture; if we do not find a way to improve their standard of living, it will be impossible for our nation to experience general economic expansion. If we continue to look the other way toward those who are less fortunate, the gap between social classes will continue to widen. Farmers in the country are being driven to take their own lives because of the debt traps they are caught in. People are moving to cities in the expectation of improving their standard of living there, but this migration is also adding to the number of people living in slums in urban areas. As a result, it is imperative that rural populations be provided with opportunities for economic growth as well as employment in their respective regions. For a considerable amount of time now, India has been classified as a "developing" country; in order for us to make the transition towards "developed" countries, we will need to reduce our enormous reliance on the agricultural sector.

6. CONCLUSION

It has been observed that sustainable agriculture is of quite a bit of importance for a developing country like India because it increases productivity, efficiency, and employment while also providing guidance to reduce the practises that affect the quality of soil, water resources, and the degradation of other natural resources. This is because sustainable agriculture accelerates productivity, efficiency, and employment. Its primary objective is to implement specialisation and make use of tools that are less harmful to the environment in order to both maintain and preserve the environment and increase the level of production in a manner that is not harmful to the environment. When we look at the performance of India's agricultural sector, it will be very easy for us to observe that the country's agricultural output has significantly improved over the course of the past few years. It has managed to accomplish significant growth in spite of various obstacles, such as the growth of the secondary sector and urbanisation, among other things.

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