

## **Sustainable Agriculture Development in India: An Exclusive Way Not Only To Feed the Present, But Also To the Future Efficiently**

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### **ABSTRACT:**

*The objective of this research is to highlight the need of sustainable agriculture, issue and challenges of Sustainable Agriculture Development in India. The balanced equilibrium between demand and supply of agricultural produce can be stated as "sustainability". Due to the Green revolution, productivity of agricultural products increases remarkably. The cumulative performance of various resources, the strategies and methods adopted, signifies the ultimate performance of agriculture. To face each and every adverse condition due to the natural calamities, all the innovative strategies has to be used by the agriculturist. The findings of the study reveal the innovative strategies & achieving the overall development. Agriculture is the back bone of Indian economy. As it is a multi-disciplinary approach, which connects link from all the sectors like production, processing and marketing; so it continuously dominate to bring the change in India. The principal objective of this paper is to study the significance of sustainable development in agriculture by using the secondary data. India is the country of villages, where a large proportion of rural people strictly depend on agriculture as it is their main occupation. Sustainable development in the agriculture not only aims to increase the productivity, efficiency and level of employment, but also conserve the natural resource base.*

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### **I. INTRODUCTION:**

The development of sustainability in agriculture has four main goals such as Environment, Health, Economic prosperity and Livelihood sustainability. Generally, sustainability exists on the principle that fulfilling the needs of current generation without compromising the ability of future generations to meet their own needs. Therefore, efficient utilization of both natural and human resources is of prime importance. In case of human resource, we can consider the social responsibilities like livelihood of the farm families, needs of rural communities, and consumer health and safety both in the present and the future. When it comes to the Stewardship of land and natural resources, then it may involve maintaining and enhancing this vital resource base for the long term.

Agriculture is one major prime sector ruling the Indian economy. The importance of agricultural sector in Indian economy can be visualized through its contribution to GDP (Gross domestic Product) and employment. Sustainable development in agriculture of any country generally depends upon the judicious mix of their available natural resources. In fact agriculture determine the fate of a country like India where about two-thirds of the population still lives in rural India with agriculture as its livelihood, in spite of the increasing urbanization that has been taking place since many decades. Therefore if agriculture goes wrong, it will be really bad for the economy as the falling of agricultural growth not only affects employment but GDP too (thus increasing poverty). The larger objective for the improvement of agriculture sector can be realized through rapid growth of agriculture, which depends upon increasing the area of cultivation, cropping intensity, and productivity. But for a country like India, increasing productivity is more important than the rest of the two. This is simply because of increasing urbanization, industrialization and the limited land size of the country.

The productivity can be increased by two ways. First, increasing output by efficient utilization of available resources. Second, increasing output by variation of input. The first method is better with respect to productivity and sustainability. But due to increasing population, this method cannot provide a permanent solution. Thus, we can go for the second method, which may potentially cause environmental degradation in the economy and affect its sustainability. Therefore there is need to tackle the issues related to sustainable agriculture development.

### **NEED FOR THE STUDY:**

Agriculture is a huge platform of a greater importance whenever talking about its contribution to the Indian GDP. During the 90s, performance in agriculture has erratically fluctuated widely with a declining trend over the period. The close relationship between the performances of agriculture and that of the economy obviously imply that agriculture must grow at a high rate for it to super economic growth. However, for agriculture to grow at the expected rate, it is imperative that quality investments are done in key areas that have potential for growth. In the last three decades the government has realized that non-targeted investments in agriculture could be disappointing. Any future investments in agriculture must therefore be focused to avoid such disappointments and achieve the intended objectives. For example, even with the general poor performance of crop production, few sub sectors such as horticulture and dairy have performed well. Thus investments in agriculture should be targeted to areas that are likely to attain high productivity.

### **GENERAL INFORMATION ABOUT INDIAN AGRICULTURE:**

Agriculture is one of the most prominent sectors of the Indian economy. It is the source of livelihood for almost two third of the rural population workforce in the country residing in rural areas. Indian agriculture provides employment to 50-60% of the labor workforce, accounts for about 17-20% of GDP, contributes 21% of total exports and raw material to several industries. The livestock sector contributes an estimated 8.4% to the country GDP and 35.85% of the agriculture output. In India about 75% people are living in rural areas and are still dependent on agriculture, about 43% of India's geographical area is used for agriculture activities. The estimated food grain production is about 211.17 metric tons in the country. The total geographical area comes under the agriculture are 329 MH out of which 265MH represent varying degree of potential production. The net sown area is 143 MH out of which 56MH are net irrigated area in the country.

### **DEVELOPMENT OF SUSTAINABILITY IN AGRICULTURE:**

The issues of sustainable development can be discussed under three broad types of farming systems viz. traditional production system, modern agriculture system and sustainable agriculture system. Further, we can compare them across three dimensions viz. ecological, economic, and social sustainability.

**Ecological Sustainability:** Most of the traditional and conventional farm practices are not ecologically sustainable. They misuse natural resources, reducing soil fertility causing soil erosion and contributing to global climatic change. But sustainable agriculture has some major advantages over traditional practices.

**Soil Fertility:** Continuous fall in soil fertility is one of the major problems in many parts of India. Sustainable agriculture improves fertility and soil structure.

**Water:** Irrigation is the biggest consumer of fresh water, and fertilizer and pesticides contaminate both surface and ground water. Sustainable agriculture increase the organic matter content of the top soil, thus raising its ability to retain and store water that falls as rain.

**Biodiversity:** Sustainable agriculture practices involve mixed cropping, thus increasing the diversity of crops produced and raising the diversity of insects and other animals and plants in and around the fields.

**Health & Pollution:** Chemicals, pesticides, and fertilizers badly affect the local ecology as well as the population. Indiscriminate use of pesticides, improper storage etc. may lead to health problems. Sustainable agriculture reduces the use of hazardous chemical and control pests.

**Land use Pattern:** Over-exploitation of land causes erosion, landslides, and flooding clogs irrigation channels and reduces the arability of the land. Sustainable agriculture avoids these problems by improving productivity, conserving the soil etc.

**Economic Sustainability:** For agriculture to be sustainable, it should be economically viable over the long term. Conventional agriculture involves more economic risk than sustainable agriculture in the long term. Sometimes governments are inclined to view export-oriented production systems as more important than supply domestic demands. This is not right. Focusing on exports alone involves hidden costs: in transport, in assuring local food security, etc. Policies should treat domestic demand and in particular food security as equally important to the visible trade balance.

**Social Sustainability:** Social sustainability in farming techniques is related to the ideas of social acceptability and justice. Development cannot be sustainable unless it reduces poverty. The government must find ways to enable the rural poor to benefit from agriculture development. Social injustice is where some section of the society is neglected from development opportunities. But having robust system of social sustainability can bridge the gap between "haves" and "have-nots". Many new technologies fail to become applicable in agriculture sector due to lack of acceptability by the local society. Sustainable agriculture practices are useful because it is based on local social customs, traditions, etc. Because of being familiar, the local people are more

likely to accept and adopt them. Moreover, sustainable agriculture practices are based on traditional know-how and local innovation. Local people have the knowledge about their environment crops and livestock.

### **IMPACT OF ECONOMIC REFORM ON INDIAN AGRICULTURE:**

The Indian agriculture sector has been undergoing economic reform since 1990s in a move to liberalize the economy to benefit from globalization. India, which is one of the largest agriculture based economies, remained closed until the early 1990s. In 1991, the new economic policies stressed both external sector reforms in the exchange rate, trade and foreign investment policies and internal reform in areas such as industrial policies, price and distribution controls, and fiscal restructuring in the financial and public sector.

India's economic reforms were initiated in June 1991, but it was observed that the expected increase in exports due to liberalization did not occur. In addition, the agriculture sector's output growth decreased during 1992-1993 to 1998-1999. The reason behind this was the decline in the environmental quality of land, which reduced the marginal productivity of the modern inputs. Agriculture sector is the mainstay of the Indian economy around which socio-economic privileges and deprivation revolve, and any change in its structure is likely to have a corresponding impact on the existing pattern of social equality. No strategy of economic reform can succeed without sustained and broad based agriculture development, which is critical for raising living standards, alleviating poverty, assuring food security, making substantial contribution to the national economic growth.

Since agriculture continues to be a tradable sector, this economic liberalization, and reform policy has a far reaching effect on

1. Agricultural exports and imports
2. Investment in new technologies
3. Pattern of agricultural growth
4. Agricultural income and employment
5. Agricultural price
6. Food security

Reduction in Commercial Bank credit to agriculture, in lieu of this reforms process and recommendations of Khusro Committee and Narasimham Committee resulted in fall in farm investment and impaired growth.

Liberalization of agriculture and open market operations enhance competition in "resource use" and "marketing of agriculture production", which forces the small and marginal farmers to resort to "distress sale" and seek off farm employment for supplementing income.

### **II. EMERGING CHALLENGES AND OPPORTUNITIES:**

The session on 'Emerging Challenges and Opportunities' began with a keynote address by Dr M.S. Swaminathan, Member of Parliament and Chairman, MSSRF. He appreciated the timely initiative of TAAS in organizing the workshop since its recommendations could provide a new policy direction to the new government. Such efforts were necessary to address the current challenges like management of global food crisis, adaptation to climate change, and the cooperatives of increasing farm incomes. His address focused on the following five major issues:

The first and foremost issue was of conservation and, wherever possible, enhancement of ecological foundations for sustainable agriculture, which included land, water, biodiversity, and marine resources. Urbanization was exerting tremendous pressure on available land and water resources. Prime agricultural land was getting converted to non-agricultural uses, which needed to be reversed through appropriate land use policy. Common property resources needed to be protected well. There was a significant revolutionary development in small farm management in respect of all the sub-sectors, i.e., crops, animal husbandry and fisheries. This process needed to be encouraged to provide 'the power of mass production to production done by the mass of small farmers'. Institutional mechanisms enabling this process should encompass

- (i) A decentralized production for increasing the availability of quality seed with the required insurance coverage.
- (ii) Delivery of improved technology and associated services to farmers.
- (iii) Aggregation of produce to improve market access, which essentially should target 'end-to-end' or 'farm-to-plate' approach covering production, processing, marketing, etc. In addition, agriculture should be made a professionally rewarding and intellectually satisfying occupation to attract the youth to farming.

### **ISSUES AND CHALLENGES:**

The central issue in agricultural development is the necessity to improve productivity, generate employment, and provide a source of income to the poor segments of population. Studies by FAO have shown that small farms in developing countries contribute around 30-35% to the total agricultural output. The pace of adoption of modern technology in India is slow and the farming practices are too haphazard and unscientific.

Some of the basic issues for development of Indian agriculture sector are revitalization of cooperative institutions, improving rural credits, research, human resource development, trade and export promotion, land reforms and education.

### **III. FUTURE PROSPECTS AND SOLUTION FOR INDIA:**

Agriculture sector is an important contributor to the Indian economy around which socio-economic privileges and deprivations revolve and any change in its structure is likely to have a corresponding impact on the existing pattern of social equity. Sustainable agricultural production depends upon the efficient use of soil, water, livestock, plant genetics, forest, climate, rainfall, and topology. Indian agriculture faces resource constraints, infrastructural constraints, institutional constraints, technological constraints and policy induced limitations.

Sustainable development is the management and conservation of the natural resource base and the orientation of technological and institutional change in such a manner as to ensure the attainment and continued satisfaction of human needs for the present and future generations. Such sustainable development (in the agriculture, forestry and fisheries sector) conserves land, water, plant and animal genetic resources, is environmentally non-degrading, technically appropriate, economically viable and socially acceptable. Therefore, to achieve sustainable agriculture development the optimum use of natural resources, human resources, capital resources and technical resources are required.

The sustainable development in India can also be achieved by full utilization of human resources. A large part of poor population of the country is engaged in agriculture, unless we increase their living standard, overall growth of this country is not possible. If we keep ignoring the poor, this disparity will keep on increasing between classes. Debt traps in country are forcing farmers to commit suicides. People are migrating towards city with the hope of better livelihood but it is also increasing the slum population in cities. Therefore, rural population must be given employment in their areas and a chance to prosper. India has been carrying the tag of "developing" country for quite long now; for making the move towards "developed" countries, we must shed this huge dependence on agriculture sector.

### **IV. CONCLUSION:**

It has been observed that for a growing country like India the practice of sustainable agriculture is of quite importance as it accelerates the productivity, efficiency, employment, and providing guidance to reduce the practices which affect the quality of soil, water resources and degradation of other natural resources. It basically aims at adopting specialization and using environment friendly tools to protect and preserve the environment as well as to enhance the level of production without harming to the environment. As we see the performance of agricultural sector of India we will be easily recognize that performance have been increased in a significant manner over the years. Despite of many challenges like urbanization, Growth of secondary sector etc. it has achieved a significant growth.

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