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Agriculture Development in India: Emerging Issues, Challenges and Opportunities

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Abstract:
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. This research is to highlight the need of sustainable agriculture, issue and challenges of Sustainable Agriculture Development in India. In the present scenario, agriculture has progressed substantially well and is becoming more and more efficient over time. The achievements of quantum jump in the production and productivity can be attributed to the introduction and breeding of high yielding variety (HYV), which adequately demonstrated the vast potential of science-led revolutions viz., Green, White and Blue. Despite these appreciable achievements, challenges associated with climate risk and depleting natural resources. Almost 40.0 per cent of the cropland has been degraded in less than four decades, and almost 25.0 billion tonnes of top soil were being lost to erosion every year. The instinct performance of Indian agriculture depends on the performance of abundant resources, the sustainable strategies and methods adopted to face dryness due to the decrease in the rainfall, the agriculturist has to use the innovative strategies. It is in this context that the present paper seeks to draw the attention and need of a thorough study regarding sustainable agriculture development (SAD) in India. To achieve social and economic equality, sustainable agriculture methods must strike a balance between environmental health and economic prosperity. As a result, good management of both natural and human resources is critical. The Indian government has taken several efforts to promote long-term sustainable agricultural development.

Keywords: Sustainability, agriculture, development, India, SDG

Introduction:

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.

The elimination of extreme poverty for sizable portions of the world's population and the establishment of sustainable economic growth in the Global level have not been achieved over decades of development cooperation and national efforts, despite some remarkable achievements of international cooperation and national success stories of development (de Vries and Jochemsen 2019).Even without a treatment for creating the conditions for sustainable development, there is still no magic solution to the problem of economic growth in the developing economies. Interestingly, most developing nations have disregarded agriculture in development as a crucial sector for sustainable development, despite the fact that it dominated practically all traditional economies[1,2]On the other hand, agriculture significance to the global economy and intrinsic potential appears clear. According to figures from the World Bank, the agriculture sector made about one-third of the global gross domestic product (GDP) in the year 2014 [3]. Agriculture continues to be the primary source of livelihood for most people in the developing economies, supporting 60.0 per cent of the world's population [3]. Obviously, agriculture sector is essential for meeting our fundamental need for food at global level. However, around 820 million people worldwide still experience hunger, and roughly half of the world's population is undernourished. This shows that agricultural productivity is still low in the majority of developing nations and it is difficult to achieve a world free from hunger and malnutrition. An estimated 20-25 per cent of the world's yearly greenhouse gas emissions is attributed to the three industries of agriculture, forestry, and land use change, which frequently coexist [4].Among the 17 Sustainable Development Goals (SDG's) set by the United Nations General Assembly in 2015 to address today's global challenges by 2030, almost all of the goals are directly or indirectly related to agriculture sector, giving agriculture a multidimensional meaning.

Sustainable Agriculture :

Agriculture sustainability seeks to use a wide range of pest, food, agroforestry, soil and water management techniques in an integrated manner. The by-products or waste of one component or enterprise become inputs to another component or enterprise. As natural processes increasingly replace external inputs, environmental impact is reduced. The agriculture sustainability contributes to environmental services such as soil conservation, watershed services, biodiversity and carbon sequestration [8]and only if these services are maintained will Indian agriculture have a future. Unfortunately, it is now vanishing in India. Indian policies have promoted a heavy focus on cereal crops viz., wheat and paddy, causing land flattening and loss of environmental services, particularly biodiversity, through unwise use of inputs. This agriculture sector growth at the expense of the environment must change to more sustainable approaches, otherwise not only the environment but also the economy will suffer in the long term. Sustainable agriculture means meeting the needs of present and future generations for its products and services, while ensuring profitability, environmental health and social and economic equity [12]. Sustainability is a process, rather than an end. Therefore, it requires the development of policy, governance, technical and financial frameworks which, support farmers and resource managers involved in the process of innovation. Sustainable agriculture integrates three main goals -environmental health, economic profitability,

and social and economic equity. These three major goals are directly related to the suitability of agriculture sector. Moreover, sustainable development can be categorized into three broad components of agricultural sustainability such as social, economic and environmental sustainability. As one-sixth of the world's population resides in India, this makes India the key player in establishing the sustainable development worldwide. For country like India, the practice of sustainable agriculture is important because it accelerates the productivity, efficiency, employment, and provide guidance to reduce the practices, which affect the quality of soil, water resources and degradation of other natural resources. Hence, it aims to enhance the level of production without harming to the environment. But,the biggest 'challenge' for Sustainable Development is the 'dilemma' of developing nations as economic growth and development directly linked to the immense risk of climate change and therefore faster economic growth for the elimination of poverty, hunger, inequality, unemployment and social injustice without impacting the global environment is challengeable task. India is at a tipping position in ensuring sustainable agriculture and further sustainable development as whole globally as it is a global agricultural powerhouse [13]. But the triple challenge of feeding a growing population, providing a livelihood for farmers, and protecting the environment.

Development Of 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 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

Agricultural exports and imports

1. Investment in new technologies
2. Pattern of agricultural growth
3. Agricultural income and employment
4. Agricultural price

5. Food security

Reduction in Commercial Bank credit to agriculture, in lieu of this reforms process and recommendations of Kherson 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.

Emerging Challenges And Opportunities:

'Emerging Challenges and Opportunities' began with a keynote address by Dr M.S. Swami Nathan, 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

1. A decentralized production for increasing the availability of quality seed with the required insurance coverage.
2. Delivery of improved technology and associated services to farmers.
3. 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.

Future Prospects And Solution in 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.

Conclusion:

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.

Reference:

1. Mishra, V.N. and Rao, Govinda (2003), Trade Policy, Agricultural Growth and Rural Poor: Indian Experience, 1978-79 to 1999-00, Economic and Political Weekly, October 25, 2003.
2. Food and Agriculture Organization (FAO) (2010), “Payments for Environmental Services within the Context of the Green Economy,” Background Report No. 2
3. Pingali P. Green revolution: Impacts, limits, and the path ahead. Proceedings of the National Academy of Science. 2012;109(31):12302–12308.
4. Pretty J, Toulmin C, Williams S. Sustainable intensification in African agriculture. International Journal of Agricultural Sustainability 2011;9(1):5–24.
5. ChoudhuryP. Commons foodscapes for a local food security: Juxtaposing Biodiversity, Culture, Nutrition and Indigenous Community in Indian Forest-Foodscapes. New Delhi; 2019.
6. Gupta N, Pradhan S, Jain A, Patel N. Sustainable Agriculture in India; CEEW Report, 2021:122.Available:https://www.ceew.in/sites/default/files/CEEWFOLU-Sustainable-Agriculture-in-India-2021-20Apr21. pdf; 2021.
7. World Bank. World development report 2008: Agriculture for Development. Washington DC; 2016.