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**SUSTAINABLE DEVELOPMENT IN ENVIRONMENT  
WITH SPECIAL REFERENCE OF INDIA: ISSUES &  
CHALLENGES**

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# Sustainable Development in Environment with Special Reference of India: Issues & Challenges

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**Abstract – In this paper, we examine and elaborate sustainable environment development in India. Sustainable development, sustainable community, sustainable industry, sustainable environment. You may have heard these words used in many different ways, but what does "sustainability" really mean and how can you tell if your community is sustainable? ... Sustainable development (SD) is a socio-ecological process characterized by the pursuit of a common ideal. An ideal is by definition unattainable in a given time/space but endlessly approachable and it is this endless pursuit what builds in sustainability in the process (Ibid). While the modern concept of sustainable development is derived most strongly from the 1987 Brundtland Report, it is rooted in earlier ideas about sustainable forest management and twentieth century environmental concerns. Sustainable development is the organizing principle for sustaining finite resources necessary to provide for the needs of future generations of life on the planet. It is a process that envisions a desirable future state for human societies in which living conditions and resource-use continue to meet human needs without undermining the "integrity, stability and beauty" of natural biotic systems. Sustainability is best viewed as a socially instituted process of adaptive change in which innovation is a necessary element. In the current scenario, India has been witnessing a blinding pace of growth and development. There is talk of the country leapfrogging into the league of developed nations sooner than later. But this growth has raised concerns from sundry quarters as regards its basic texture and health. Experts are now calling for "Sustainable Development" and the term has gained currency in the last few years. Inspire of environment& Agriculture Sector, there is fast growth in various sectors. So agriculture remains the backbone of the Indian economy. This paper attempts to tackle and explore the issue of sustainable development in environment in India. The objectives are to compare the sustainable agriculture system with the traditional system and the current system in practice, across the dimensions of ecological, economic and social sustainability. The paper is based on secondary sources of data such as various manuals, reports published by departments of GOI, journals, magazines, newspapers, websites etc.**

**Keyword: Sustainable Development, Agriculture, Environment, Ecological Sustainability, Economic Sustainability, Social Sustainability**

## INTRODUCTION

The concept of sustainable development arose from two main sources: increasingly worrisome evidence of ecological degradation and other biophysical damage, both despite and because of the greater wherewithal provided by economic growth, and the largely disappointing record of post-WWII 'development' efforts, particularly the persistence, and in some places worsening, of poverty and desperation in a period of huge overall global increases in material wealth. The United Nations and associated agencies worried about these matters separately for some decades before appointing the World Commission on Environment and Development (WCED) to address them jointly. The Commission's conclusion was that the ecological and social failures had common causes and demanded a common response. Its final report,

*Our Common Future* (WCED, 1987), initiated a flood of interest in, debate about and experimentation with sustainable development, which was renewed after the publication and subsequent adoption of *Agenda 21*.

Over the more than two decades since publication of *Our Common Future*, the idea of sustainable development has been widely, if ambiguously, embraced by a great variety of institutions around the world. There has been much dispute about the meaning and implications of the concept and much criticism of the actual behavior of bodies that have claimed devotion to it. Gradually, however, some basics have become clear.

Current resource-intensive development patterns are ecologically and ultimately, economically

unsustainable. There are also problems of inadequate worker and consumer protection, poverty and exclusion. While modern economic advances have brought a host of value improvements, including important environmental quality gains, few of the gains have been automatic and the overall results still include persistent development failures and deepening ecological decline. The main dimensions consist of maintaining the integrity of biophysical systems, better services for more people, and freedom from hunger, nuisance and deprivation. To these one may add choice, opportunity and access to decision making – aspects of equity, within and across generations. The economist capital model of sustainable development misses out on several dimensions and like the people-profit-planet model, fails to address the interconnections.

The objective of sustainability-centered decision-making is to seek positive, mutually supporting gains in all areas. But as this work begins, there will be many cases where no practical option offers benefits of all the required kinds. Inevitably there will have to be trade-offs between goals and there will be winners and losers. Trade-offs has to be faced and dealt with. Compensation of losers is another possible strategy, but it should not be applied in all circumstances. Polluters should pay for damage, and not be paid to not damage. Certainly, open and explicit attention to the reasoning behind trade-off and compromise decisions is desirable. While we can work to create systems offering a suite of benefits, waiting for win-win solutions to emerge is not a useful strategy.

Clearly, this is not a transition that can be accomplished quickly or easily. The challenge is to show how such a transition can be accomplished and to develop a core set of tools that would make governance for sustainability manageable.

Agriculture occupies the most important position in Indian economy, as it is one of the largest private enterprises in India, which continues to dominate the change in economy through its links of various sectors of production and markets. The role of agricultural sector in Indian economy can be seen through its contribution to GDP (Gross domestic Product) and employment. This sector also contributes significantly to sustainable economic development of the country. The sustainable agriculture development of any country 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.

## METHODOLOGY OF THE STUDY

The study is based on secondary sources of data. The main sources of data are journals, articles, newspapers, online data base of Indian economy, RBI

policies and Bulletins, various economic surveys etc. To analyses the data tools have been applied with the help of tables.

## Sustainable Environment Development

The issues of sustainable development can be discussed under three broad types of farming systems viz. traditional production system, modern agriculture system and sustainable environment & agriculture system. Further we can compare them across three dimensions, 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 environment & 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, land slides and flooding clogs irrigation channels and reduces the arability of the land. Sustainable agriculture avoids these problems by improving productivity, conserving the soil etc.
- **Climate:** Conventional agriculture contributes to the production of greenhouse gases in various ways like reducing the amount of carbon stored in the soil and in vegetation, through the production of Methane in irrigated field and production of artificial fertilizers etc.

By adopting sustainable agriculture system, one can easily overcome this problem.

## ECONOMIC SUSTAINABILITY

For environment 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. It is a popular misconception that specific commodities promise high economic returns. But market production implies certain risks as markets are fickle and change quickly. Cheap foreign food may sweep into the national market, leaving Indian farmers without a market. As a World Trade Organization signatory, the Indian government is under pressure to deregulate and open its economy to the world market so it cannot protect its farmers behind tariff walls. The main source of employment for rural people is farming. Trends towards specialization and mechanization may increase narrowly measured "efficiency", but they reduce employment on the land. The welfare costs of unemployment must be taken into account when designing national agricultural support programs. Sustainable agriculture, with its emphasis on small-scale, labor-intensive activities, helps overcome these problems.

## 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 and norms 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.

## MILE STONES IN INDIAN AGRICULTURE

Policy makers and planners, concerned about national independence, security and political stability realized that self-sufficiency in food production was an absolute pre requisite for sustainable agriculture development. The policies considered to be a mile stone in agriculture development of the country are:

1. **Green Revolution (1968):** This revolution includes packages of programs like, Intensive Agriculture District Program (IADP) which eventually led to the Green Revolution. The National Bank for Agriculture Development (NABARD) was set up. The emphasis was on high yielding varieties along with other modern inputs like chemicals, fertilizers, pesticides and mechanization and also on how productivity could be raised in agriculture sector without having substantial influences on increasing area under cultivation.
2. **Ever Green Revolution (1996):** Father of India's Green revolution, Prof. M.S. Swami Nathan claims to be pro-woman, pro-nature and pro-poor. The conservation of biodiversity, maintaining soil fertility, increasing the climate resistance of food crops combined with better and more education and technological innovation are the key to the ever green revolution. The main aim of this revolution is to produce more using less land, less water and less fertilizer. The recent visit of US President in New Delhi in March 2010, announced a new partnership with India in an agriculture sector for an evergreen revolution to achieve global food security.
3. **White and Yellow Revolution:** The Green Revolution generated a mood of self confidence in our agriculture capability, which led to the next phase characterized by the Technology Mission. Under this approach, the focus was on conservation, consumption, and commerce. An end-to-end approach was introduced involving attention to all links in the production-consumption chain, owing to which progress was steady and sometimes striking as in the case of milk and egg production.
4. **Blue Revolution (Water, Fish):** It has been brought about in part by a trend towards healthier eating which has increased the consumption of Fish. Additionally the supply of wild fish is declining. This revolution could give landless laborers and women a great

opportunity for employment which empowered them.

5. **Bio-Technology Revolution:** India is well positioned to emerge as a significant player in the Global Bio-tech Arena. Agriculture biotech in India has immense growth opportunity and the country could become the fore runner in the transgenic production rise and several other genetically engineered vegetables by 2010. In agro-biotech sector India has been growing at a blinding rate

### Impact of Economic Reform on Indian Environment & Agriculture

The Indian environment 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
- Investment in new technologies
- Pattern of agricultural growth
- Agricultural income and employment
- Agricultural price
- Food security

## ISSUES & 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 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. So, to achieve sustainable agriculture development the optimum use of natural resources, human resources, capital resources and technical resources are required. In India the crop yield is heavily dependent on rain which is the main reason for the declining growth rate of agriculture sector. These uncertainties hit the small farmers and laborers worst which are usually leading a hand to mouth life. Therefore something must be done to support farmers and sufficient amount of water and electricity must be supplied to them as they feel insecure and continue to die of drought, flood, and fire. India is the second largest country of the world in terms of population; it should realize it is a great resource for the country. India has a huge number of idle people. There is a need to find ways to explore their talent and make the numbers contribute towards the growth. Especially in agriculture passive unemployment can be noticed. 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.

## **CONCLUSION**

The agricultural technology needs to move from production oriented to profit oriented sustainable farming. The conditions for development of sustainable environment & agriculture are becoming more and more favorable. New opportunities are opening the eyes of farmers, development workers, researchers and policy makers like agro related businesses, dairy farming, poultry farming, cattle farming and fisheries. Now the time is to see the potential and importance of these practices not only for their economic interest but also as the basis for further intensification and ecological sustainability. To conclude, a small-farm management to improve productivity, profitability and sustainability of the farming system will go a long way to ensure all round sustainability.

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