

Sustainable Development for a Secure and Stable Future

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Abstract: Sustainable development is a necessity in contemporary era for a secure and a stable future. Sustainable development in India is pivotal for ensuring a secure and stable future, given the country's unique socio-economic challenges and environmental vulnerabilities. This abstract explores the interconnections between economic growth, social equity, and environmental sustainability in the Indian context. It emphasizes the need for a holistic approach that integrates policy frameworks, community participation, and technological innovation. India's rapid industrialization and urbanization have led to significant environmental degradation, resource depletion, and social disparities. Therefore, adopting sustainable practices in agriculture, energy, and urban planning is crucial. The government's initiatives, such as the National Action Plan on Climate Change (NAPCC) and the Sustainable Development Goals (SDGs), provide a framework for addressing these challenges. Moreover, enhancing public awareness and engaging local communities in sustainable practices are essential for fostering resilience. This abstract posits that India's commitment to sustainable development can lead to a more secure and equitable future, ultimately contributing to global sustainability efforts. Through collaborative efforts, both domestically and internationally, India can harness its diverse resources and innovative potential to achieve sustainable development goals while addressing pressing challenges. Since last two decades due to strong government intervention and favorable economic opportunities, India is becoming one of the top contenders in renewable energy markets. In case of countries like India which are developing, economic sustainability can be achieved by recycling and efficient use of resources.

KEY WORDS: Carbon Credits, Clean Development Mechanism, Sustainable Development Goals.

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I. INTRODUCTION

Sustainable development has emerged as a critical paradigm for addressing the complex challenges faced by nations worldwide, particularly in developing countries like India. As one of the fastest-growing economies, India is at a crossroads where the pursuit of economic growth must be balanced with environmental stewardship and social equity. The need for sustainable development in India is underscored by its rich cultural diversity, vast natural resources, and pressing issues such as poverty, inequality, and climate change. The Indian context is characterized by rapid urbanization, a burgeoning population, and significant reliance on natural resources, which has led to environmental degradation and resource scarcity. Water shortages, air pollution, deforestation, and biodiversity loss pose serious threats to both human health and economic stability. Furthermore, climate change impacts are disproportionately felt by marginalized communities, exacerbating existing inequalities. Recognizing these challenges, the Indian government has initiated various policies aimed at promoting sustainable development, such as the National Action Plan on Climate Change (NAPCC) and efforts aligned with the United Nations Sustainable Development Goals (SDGs). These frameworks aim to create a balance between economic growth and environmental protection, emphasizing the importance of renewable energy, sustainable agriculture, and inclusive urban planning. However, achieving sustainable development in India requires a multi-faceted approach that incorporates technological innovation, community engagement, and investment in education. It calls for a collective effort from government, private sector, and civil society to build resilience and ensure that the benefits of growth are equitably shared.

The main aim of sustainable development is to achieve Sustainable Development Goals (SDGs), more commonly known as Global Goals. They are a universal call to action to end poverty, protect the planet and ensure that all people enjoy peace and prosperity. It is also called as Agenda 21 as it is an action agenda for the United Nations, other multilateral organizations and individual governments around the world that can be executed at local, national and global levels. The "21" in said Agenda refers to the 21st century.

The ambitious agenda of Sustainable Development Goals (SDGs) has been agreed upon by 193 countries on 25th September, 2015 at the United Nations. India has made significant progress towards the achievement of Sustainable Development Goals.

II. SUSTAINABLE DEVELOPMENT IN INDIAN CONTEXT

As per United Nations SDG index India ranks 112th out of 166 countries, with an index score of 63.5 percent and spill-over score of 99.4 %.

There is a dire need to follow the pattern of sustainable development in India. All available indicators point to the ecological conditions being nothing short of disastrous in India. Natural ecosystems are under stress and are declining across the country; almost 10% of the country's wildlife is threatened with the fear of extinction and agricultural biodiversity has declined over 90% in many regions. Over half of the water bodies are polluted and the water there from cannot be used even for agricultural purposes. Two third of the land is degraded to various levels of sub optimal productivity; air pollution in several cities is almost world's worst; "modern" wastes, including electronic and chemical, are being produced far beyond our capacity to recycle or manage. A 2008 Report by the Global Footprint Network and Confederation of Indian Industries suggests that India has the world's third biggest ecological footprint, that its resource use is already twice of its bio capacity, and that this bio capacity itself has declined by half in the last few decades.

III. STEPS TAKEN BY THE INDIAN GOVERNMENT

1. Ratifying the Paris Agreement: India has ratified the Paris Agreement and this agreement succeeds the Kyoto Protocol. It provides a framework for all the countries to take action against climate change. One of the main focus of the agreement is to hold the increase in global average temperature to well below 2°C above preindustrial level and on driving efforts to limit it even further 1.5°C.

2. Clean Development Mechanism Projects (CDM) in India: As on 04th January, 2016, India has 1393 projects registered by the CDM, which is second highest after China which has 3764 projects registered.

3. State Action Plans on climate change: The State Action Plan on climate change aims to create institutional capacities and implement sectoral activities to address climate change.

4. Coal Cess and the National Clean Energy Fund: India is one of the few countries in the world which has Carbon Tax in the form of Cess on coal. The National Clean Energy Fund, which is supported by the Cess on coal, was created for the purposes of financing and promoting clean energy initiatives, funding research in the area of clean energy and for any other related activities.

5. National Adaptation Fund for climate change: A National Adaptation Fund has been established which is meant to assist in meeting the cost of national and state-level adaptation measures in the areas that are particularly vulnerable to adverse effects of climate change.

IV. INDIA'S PROGRESS TOWARDS SUSTAINABLE DEVELOPMENT

1. Life expectancy general well being: Life expectancy has achieved a decade's gain. Maternal health has significantly improved, with a rate of 254 per 100,000 live births in 2004-2006 to 113 in 2016-18. Under five mortality rate in 2019 was 34 per 1000 lives, while it was 89 per 1000 lives in 1990.

2. Forest cover: There has also been a rise in forest cover despite the pressures on land use, which is a measure of environmental sustainability.

3. Literacy, a third summary indicator: There is gain in literacy among younger women, an indicator of future generation's well-being. The primary school enrolment rate was 98.3% in 2018.

4. The Constitution of India: The Constitution of India and the relevant amendments that have been incorporated therein over the years, reinforce the policy and legal basis of sustainable development in India. The pillars of sustainable development are embedded in the Fundamental Rights guaranteed by the Constitution, which lay down the framework for social justice.

5. Right to life: Article 21 of the Constitution of India conferring the right to life has been assigned the broadest interpretations by the judiciary to encompass the right to a clean environment, right to livelihood, right to live with dignity, and a number of other associated rights.

6. The National Environment Policy, 2006: The National Environment Policy, 2006 has attempted to mainstream environmental concerns in all developmental activities.

7. Gender Equality: The female participation as work force has increased from 22.5% in 2005 to 23.3% in 2019. Child marriage has declined significantly only 30% cases were reported in 2015-16 while a decade ago it was about 47%.

8. Clean potable water and Sanitation: Access to sanitation facilities has risen to 71% in 2017 while it was only 21% in 1990.

9. Nutrition and economic sustainability: The poverty rate was 21% in 2011 significantly reducing from 45% in 1993. Undernourishment has reduced to 14.5% in 2018, while it was 18.2% in 2004-2006.

The Government of India, through its various policies, has been factoring ecological concerns into the development process so that economic development can be achieved without permanently damaging the environment.

V. CARBON CREDITS AND SUSTAINABLE DEVELOPMENT

Carbon Credits are certificates issued to the countries that reduce their emission of Green House Gases (GHGs) responsible for global warming. Each Certified Emission Reduction (CER) is equivalent to one ton of Carbon dioxide reduced. Carbon credits are a market-based mechanism aimed at reducing greenhouse gas (GHG) emissions by providing financial incentives for organizations and countries to lower their carbon footprints. This system is integral to achieving sustainable development goals, particularly in the context of climate change mitigation. By allowing the trading of carbon credits, entities that reduce emissions can sell their surplus credits to those who exceed their emission limits, creating a flexible and economically efficient approach to environmental protection.

Mechanisms of Carbon Credits

1. **Cap-and-Trade Systems:** Governments set a limit (cap) on the total amount of GHG emissions allowed for certain sectors. Companies receive allowances and can trade these credits in a market, encouraging them to innovate and reduce emissions.
2. **Clean Development Mechanism (CDM):** Established under the Kyoto Protocol, CDM allows developed countries to invest in emission reduction projects in developing countries, generating carbon credits that can be used to meet their own emission reduction targets.
3. **Voluntary Carbon Markets:** Organizations can purchase carbon credits voluntarily to offset their emissions, contributing to sustainability initiatives and enhancing their corporate social responsibility profiles

VI. CLEAN DEVELOPMENT MECHANISM

The Clean Development Mechanism (CDM) is a pivotal component of the Kyoto Protocol, established to facilitate emission reductions while promoting sustainable development in developing countries. By allowing developed nations to invest in emission reduction projects in these countries, the CDM aims to create a win-win scenario: developed nations can meet their GHG reduction targets cost-effectively, while developing countries benefit from financial and technological support for sustainable initiatives.

Mechanism of CDM

1. **Project-Based Approach:** CDM projects must demonstrate a reduction in greenhouse gas emissions compared to a baseline scenario. These projects can span various sectors, including renewable energy, energy efficiency, waste management, and reforestation.
2. **Issuance of Certified Emission Reductions (CERs):** For each ton of CO₂ equivalent reduced, a project receives Certified Emission Reductions (CERs), which can be traded in international carbon markets. This provides a financial incentive for project developers.
3. **Sustainable Development Criteria:** Projects must contribute to sustainable development in the host country. This is often assessed through local stakeholder consultations and alignment with national development priorities.

VII. DEVELOPED VERSUS DEVELOPING COUNTRIES

Sustainable development is a global challenge that varies significantly between developed and developing countries. While both face pressing environmental, economic, and social issues, their capacities, priorities, and strategies for achieving sustainability differ. This contrast is shaped by factors such as economic resources, technological access, governance structures, and historical contexts.

Key Differences

- **Economic Resources and Infrastructure:**

Developed Countries: Generally possess more financial resources and advanced infrastructure. This enables greater investments in green technologies, renewable energy, and sustainable practices.

Developing Countries: Often face resource constraints and rely heavily on agriculture and natural resources. Limited access to capital can hinder investment in sustainable initiatives.

- **Technological Access and Innovation:**

Developed Countries: Have better access to cutting-edge technologies, allowing for innovation in sustainability practices. They can implement advanced systems for waste management, energy efficiency, and renewable energy.

Developing Countries: May struggle with outdated technologies and lack the infrastructure for advanced solutions. However, they often leapfrog technologies by adopting innovative solutions that suit their context.

- **Governance and Policy Frameworks:**

Developed Countries: Typically have established regulatory frameworks and institutions focused on environmental protection and sustainability. They often lead in international climate agreements and set ambitious targets.

Developing Countries: May face challenges in governance, including political instability and corruption, which can impede effective implementation of sustainable policies. However, many are making significant strides toward sustainability in line with local needs.

- **Social Dimensions:**

Developed Countries: Experience challenges related to consumption patterns, waste generation, and social inequality. Sustainable development often focuses on reducing carbon footprints and enhancing urban sustainability.

Developing Countries: Must prioritize poverty alleviation, basic service provision, and social equity alongside environmental sustainability. Initiatives often focus on improving access to clean water, sanitation, and energy.

VIII. CONCLUSION

Understanding the distinctions between developed and developing countries in the context of sustainable development are crucial for creating effective, inclusive strategies. Collaborative efforts that consider the unique challenges and strengths of each context can lead to more impactful outcomes. By sharing knowledge, resources, and technologies, both developed and developing nations can advance toward a more sustainable and equitable future. India needs to learn from the experiences of pilot countries. Ending poverty, hunger in all its form everywhere, achieving food security, improved nutrition, promoting sustainable agriculture, ensuring healthy lives, promoting well-being for all at all ages, ensuring inclusive and equitable quality education and promoting lifelong learning opportunities for all are all the pivotal milestones which need to be achieved for sustainable development. The Clean Development Mechanism represents a unique approach to fostering sustainable development while addressing climate change.

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