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## Meaning and concept of sustainable development for the protection of environment and the role of India

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### Abstract

Sustainable development is defined as development that meets the needs of the present without compromising the ability of future generations to meet their own needs. This concept, first popularized by the 1987 Brundtland Report, addresses the overexploitation of resources and the mismanagement of technology. Sustainable development aims to balance current needs with future sustainability, focusing on several key aspects: climate change, biodiversity, hazardous waste disposal, pollution, and ecological security. The threats to sustainable development are diverse and complex. Climate change, driven by global warming, poses a significant risk, requiring integrated and sustainable management of natural resources. Malnutrition remains a persistent issue in many developing countries, threatening food and nutrition security. Income inequality, both within and among nations, has been rising, leading to social conflict. Unplanned urbanization, particularly in developing countries, demands significant investments in urban infrastructure. Environmental pollution from fossil fuels and inadequate energy access for millions of households also challenges sustainable development. Additionally, financial crises, high population growth, and urban slums exacerbate these issues, while biodiversity loss and environmental pollution further strain the planet's resources. Global challenges to sustainable development are influenced by changing demographic profiles, economic and social dynamics, technological advancements, and environmental deterioration. The 2012 United Nations Conference on Sustainable Development highlighted the need for addressing interconnected challenges, including decent jobs, sustainable cities, food security, sustainable agriculture, water, oceans, and disaster readiness. Major unsustainable activities have led to significant ecological degradation. These include deforestation, depletion of water resources, increased floods and droughts, land degradation, and pollution. Effective sustainable development requires guiding principles such as intergenerational equity, conservation of biodiversity, sustainable income, precautionary policies, equitable resource use, and efficiency in resource utilization. Sustainable development measures focus on using appropriate technology, reducing, reusing, and recycling resources, environmental education, and utilizing resources within their carrying capacities. The Earth Summit in 1992 adopted Agenda 21, setting a global action program for sustainable development. The United Nations' Millennium Development Goals (MDGs) of 2000 evolved into the Sustainable Development Goals (SDGs) in 2016, outlining 17 goals to be achieved by 2030. These goals include ending poverty and hunger, ensuring health and well-being, quality education, gender equality, clean water and sanitation, affordable energy, decent work, reduced inequality, sustainable cities, responsible consumption, climate action, conserving marine and terrestrial ecosystems, promoting peace and justice, and fostering global partnerships. India has a long tradition of environmental conservation rooted in its cultural heritage. Deities associated with animals have indirectly promoted wildlife conservation, while sacred groves and the worship of animals and plants reflect a deep-rooted environmental ethos. Modern initiatives, such as the National Action Plan on Climate Change (NAPCC), address climate challenges through missions on solar energy, energy efficiency, sustainable habitat, water, Himalayan ecosystems, Green India, sustainable agriculture, and strategic knowledge on climate change. Programs like Swachh Bharat Mission, Green Skill Development Programme, Namami Gange Programme, and National River Conservation Programme further demonstrate India's commitment to environmental protection.

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India's achievements in sustainable development are noteworthy. The country has reduced poverty, improved maternal and child health, achieved near-universal primary school enrollment, increased female labor force participation, reduced child marriage, and improved access to drinking water and sanitation. Despite being the world's most populous country, India's blend of traditional conservation practices and modern sustainable development policies significantly contributes to global progress on SDGs. This holistic approach, integrating environmental, social, and economic challenges, is crucial for ensuring a sustainable future for all.

**Keywords:** Sustainable Development; Threats to Sustainability; Guiding Principles of Sustainability; Agenda 21 and SDGs; India's Role in Sustainable Development

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## 1. Introduction

- “Sustainable development is the development that meets the needs of the present without compromising the ability of future generations to meet their own needs” (World Commission on Environment and Development, 1987).
- In 1987, the United Nations World Commission on Environment and Development, chaired by G. H. Brundtland, published its report, “Our Common Future”. It is popularly known as the Brundtland Report, which first defined sustainable development.

### 1.1. Basic aspects of sustainability

- The question of sustainable development has emanated from overexploitation of resources as well as mismanagement of technology.
- The aspects, which require monitoring of sustainability, include climatic change, biodiversity, disposal of hazardous and toxic wastes, disposal of pollution generating industries and food and ecological security.

### 1.2. Threats to the sustainable development

- **Climate change due to global warming:** The impact of climate change threatens to escalate in the absence of adequate safeguards and there is a need to promote the integrated and sustainable management of natural resources and ecosystems.
- **Malnutrition:** Hunger and malnourishment, while decreasing in many developing countries, remain persistent in other countries, and food and nutrition security continues to be a threat for sustainable development.
- **Income inequality:** Income inequality within and among many countries has been rising and has reached an extremely high level, invoking the spectra of heightened tension and social conflict;
- **Unplanned urbanization:** Rapid urbanization, especially in developing countries, calls for major changes in the way in which urban development is designed and managed, as well as substantial increases of public and private investments in urban infrastructure and services;
- **Energy requirement:** Burning of fossil fuel causes environmental pollution which is a major threat of sustainable development. Energy needs are likely to remain unmet for hundreds of millions of households, unless significant progress in ensuring access to modern energy services is achieved; particularly in the field of renewable or green energy.
- **Financial Crisis:** Financial management failure may affect large number of people throughout the world. Recurrence of financial crises needs to be prevented and the financial system has to be redirected towards promoting access to long-term financing for investments required to achieve sustainable development.
- **High population growth:** High rate of population growth is one of the major threats of sustainable development. Current global population is above 7 billion and it is increasing at an annual rate of 1.1%. It is very difficult to manage place of living and food for this huge population.
- **Urban slums:** Large numbers of urban slums are one of the major threats of sustainable development.
- **Biodiversity loss:** Biodiversity provides food and other essential materials to human being. Global biodiversity is under threat due to habitat destruction, climate change, environmental pollution etc.
- **Environmental pollution:** Due to scientific innovations and rapid exploitation of resources, every aspect of environment such as air, water and land are polluted today which is a major threat to sustainability.

Over the past years, the global challenges to sustainable development have been driven by a broad set of “megatrends”, such as changing demographic profiles, changing economic and social dynamics, advancements in technology and trends towards environmental deterioration. A better understanding of the linkages among these trends and the associated changes in economic, social and environmental conditions is needed. The United Nations Conference on Sustainable Development, held in Rio de Janeiro, Brazil, from 20 to 22 June 2012, highlighted a range

of interlinked challenges which call for priority attention, including decent jobs, energy, sustainable cities, food security and sustainable agriculture, water, oceans and disaster readiness.

### 1.3. Major unsustainable activities

- The deterioration in the ecological base in various countries is due to irrational management of the resource and environmental systems. Its observable signs can be listed as:
- Extensive deforestation accounting for loss of flora, fauna and some rare species;
- Drying up of drinking water resources and fall in the underground water levels
- Intensifying rate and frequency of flood and droughts
- Land degradation due to desertification, wastelands, salinity and water logging;
- Deterioration in quality of air and water due to environmental pollution.
- Use of chemical fertilizers, pesticides, weedicides etc. for intensive agriculture.
- Pressure of population resulting in unemployment and mass migrations
- Unplanned urbanization and unprecedented growth of urban slums etc.

### 1.4. Guiding principles of sustainability

- The guiding principles of ecological sustainable resource management are as under:
- Inter-generation equity providing for today while retaining resources and options for tomorrow.
- Conservation of cultural and biological diversity and ecological integrity
- Constant natural capital and sustainable income.
- Anticipatory and precautionary policy approach to resource use, erring on the side of caution.
- Use of resources in a manner that contributes to equity and social justice while avoiding social disruptions.
- Limits on natural resource use within the capacity of the environment to supply renewable resources and assimilate wastes.
- Qualitative rather than quantitative development of human well being.
- Pricing of environmental values and natural resources to cover full environmental and social costs.
- Global, rather than regional or national, perspective of environmental issues.
- Efficiency of resource use by all societies.

### 1.5. Measures for sustainable development

- Use of appropriate technology
- Reduce reuse and recycle
- Prompting environmental education and awareness
- Resource utilization as per carrying capacity
- In fact, development without proper management has become a cause of eco-destruction, for which sustainable development is the only solution. For a sustainable world, following steps may be followed:
  - A production efficiency era of minimum environmental damage costs through energy transition.
  - For a stable world population, a demographic transition.
  - From non-renewable to renewable resource transition
  - By a global mutually agreed objective between South (developed countries) and North (poor countries), political transition.

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## 2. Agenda 21: Programme of Action for Sustainable Development

- Agenda 21 is a programme of action for sustainable development worldwide. This is also known as the Rio Declaration on Environment and Development, adopted by more than 178 Governments at the United Nations Conference on Environment and Development, known as Earth Summit, held in Rio de Janeiro, Brazil, from 3 to 14 June 1992.
- Agenda 21 is intended to set out an international programme of action for achieving sustainable development in the 21st Century. It stands as a comprehensive blueprint for action to be taken globally by governments, United Nations Organisations, development agencies, non-governmental organisations and independent sector groups, in every area in which human activity impacts the environment.
- It provides a broad review of issues pertaining to sustainable development, including statements on the basis for action, objectives, recommended activities and means of implementation.

## 2.1. Millennium Development Goals

United Nations had adopted Millennium Development Goals (MDGs) in its Millennium Summit, held in 2000. MDGs comprise of following eight (8) goals that to be achieved within 2015.

- To eradicate extreme poverty and hunger
- To achieve universal primary education
- To promote gender equality and empower women
- To reduce child mortality
- To improve maternal health
- To combat HIV/AIDS, malaria, and other diseases
- To ensure environmental sustainability
- To develop a global partnership for development

In 2016, achievements of MDGs were reviewed by the United Nations and MDGs were succeeded by following Seventeen (17) Sustainable Development Goals (SDGs) that to be achieved within the target period of 2030.

- Goal 1: No Poverty: End poverty in all its forms everywhere.
- Goal 2: Zero Hunger: End hunger, achieve food security and improved nutrition and promote sustainable agriculture.
- Goal 3: Good Health and Well-being: Ensure healthy lives and promote well-being for all at all ages.
- Goal 4: Quality Education: Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all.
- Goal 5: Gender Equality: Achieve gender equality and empower all women and girls.
- Goal 6: Clean Water and Sanitation: Ensure availability and sustainable management of water and sanitation for all.
- Goal 7: Affordable and Clean Energy: Ensure access to affordable, reliable, sustainable and modern energy for all.
- Goal 8: Decent Work and Economic Growth: Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all.
- Goal 9: Industry, Innovation, and Infrastructure: Build resilient infrastructure, promote inclusive and sustainable industrialization, and foster innovation.
- Goal 10: Reduced Inequality: Reduce inequality within and among countries.
- Goal 11: Sustainable Cities and Communities: Make cities and human settlements inclusive, safe, resilient, and sustainable.
- Goal 12: Responsible Consumption and Production: Ensure sustainable consumption and production patterns.
- Goal 13: Climate Action: Take urgent action to combat climate change and its impacts.
- Goal 14: Life Below Water: Conserve and sustainably use the oceans, seas, and marine resources for sustainable development.
- Goal 15: Life on Land: Protect, restore, and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss.
- Goal 16: Peace, Justice, and Strong Institutions: Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable, and inclusive institutions at all levels.
- Goal 17: Partnerships to Achieve the Goal: Strengthen the means of implementation and revitalize the global partnership for sustainable development.

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## 3. Role of India in Sustainable Development for the Protection of the Environment

- Indian civilization which is more than 5000 years old has long tradition of societal preservation and protection of animals and environment through various cultural practices. There are many cultural practices that actually help us in animal conservation. Like the Vahana or Carrier of Devi Durga that is Lion. The associations of animals is also linked with other Goddesses like owl is the vahana of Devi Laxmi, Swan is the vahana of Devi Saraswati, Rat is the vahana of Lord Ganesh, Peacock is the vahana of Lord Kartik. All these actually help in the protection and conservation of these animals. Lord Siva is depicted with a snake around his neck, i.e. Vasuki Naga and his close associate is Nandi, a bull. Lord Vishnu takes rest on a serpentine bed of Seshanaga. According to our mythology, there are many Gods and Goddesses with Elephant and horse as their Vahanas. In many places of worship of our country, different animals such as fishes, tortoises, pigeons were considered as sacred and

worshipped by humans. There are many sacred groves in our country where plants are protected and preserved. All these are our rich cultural traditions that are meant for achieving environmental conservation and ecological sustainability.

- Following the SDGs, Government of India has prepared a National Action Plan on Climate Change (NAPCC) which encompasses eight core missions in specific areas of solar energy, enhanced energy efficiency, sustainable habitat, water, sustaining Himalayan ecosystems, Green India, sustainable agriculture, and strategic knowledge for climate change. The Centre has already taken various steps to safeguard the environment, including Swachh Bharat Mission, Green Skill Development Programme, Namami Gange Programme, Compensatory Afforestation Fund Act (CAMPA), National Mission for Green India, National River Conservation Programme, and Conservation of Natural Resources & Ecosystems.
- According to the United Nations SDG Index Report 2023, the SDG Index Rank of India is 112 out of 166 countries, with an overall index score of 63.5 percent and spill-over score of 99.4 percent. The notable achievements are: India has successfully lifted millions of people out of poverty, reducing the poverty rate from 45% in 1993 to around 21% in 2011. The prevalence of undernourishment in India has decreased from 18.2% in 2004-2006 to 14.5% in 2016-2018. India has made significant improvements in maternal and child health, with a reduction in maternal mortality ratio from 254 per 100,000 live births in 2004-2006 to 113 in 2016-2018. Under-five mortality rate has also declined from 89 per 1,000 live births in 1990 to 34 in 2019. India has achieved near-universal primary school enrolment, with a net enrolment rate of 98.3% in 2018. The female labour force participation rate in India increased from 22.5% in 2005 to 23.3% in 2019. The child marriage rate declined from 47% in 2005-2006 to 30% in 2015-2016. Access to improved drinking water sources has increased from 73% in 1990 to 94% in 2017. Access to improved sanitation facilities has also improved, rising from 21% in 1990 to 71% in 2017.
- India is now progressing at a rapid rate despite being the most populous country in the world with its core traditional values of conservation and sustainability. The achievements of India are also keeping their imprints on the progress on attaining SDGs globally.

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#### 4. Conclusion

In conclusion, the concept of sustainable development, articulated by the Brundtland Report in 1987, remains as urgent and relevant today as ever. It underscores the imperative to balance economic progress with environmental protection and social equity, ensuring that the needs of current generations are met without compromising the ability of future generations to meet their own needs. Despite significant strides towards achieving global sustainability goals, numerous challenges persist. Climate change continues to accelerate, threatening ecosystems and livelihoods worldwide, while biodiversity loss and environmental degradation further exacerbate these issues. Social inequalities, including income disparities and inadequate access to basic resources like food and clean water, persist as formidable obstacles to sustainable development. Rapid urbanization, energy demands, and the pressures of a growing population compound these challenges, necessitating concerted efforts across sectors and nations to find equitable and sustainable solutions. India, with its rich cultural heritage and longstanding traditions of environmental stewardship, has embraced the Sustainable Development Goals (SDGs) with a range of initiatives aimed at conserving natural resources, enhancing energy efficiency, and promoting sustainable agriculture and urban development. The country's progress, as reflected in the SDG Index, demonstrates significant achievements in poverty alleviation, healthcare improvements, and educational access, underscoring its commitment to inclusive development. However, persistent issues such as urban slums, environmental pollution, and biodiversity loss require continued focus and innovation to ensure holistic and sustainable development. Moving forward, global cooperation and innovative strategies are essential to address these interconnected challenges. The Agenda 21 framework and subsequent SDGs provide a comprehensive roadmap for action, emphasizing the importance of integrated approaches that consider economic, social, and environmental dimensions of development. It is imperative for governments, civil society, and the private sector to collaborate effectively, leveraging technology, education, and policy frameworks to achieve lasting progress. Investments in renewable energy, sustainable infrastructure, and resilient communities are critical to mitigating climate risks and building a more equitable future for all. By embracing a global perspective and prioritizing sustainability in decision-making, we can pave the way for a world where prosperity is shared equitably, natural resources are conserved, and future generations can thrive in harmony with their environment. As we navigate the complexities of the 21st century, the pursuit of sustainable development must remain a collective endeavor, guided by principles of equity, resilience, and long-term stewardship of our planet's resources.

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