

# Sustainable Development and Environmental Challenges

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## Abstract

Globalisation has impacted the economy, ecology, society, and environment. Conservation of the environment is essential to achieving sustainable development. Because humans depend on the environment in so many ways, preserving it directly contributes to human groups' and individuals' existence and, in turn, to social sustainability. Sustainable development has several challenges in the current environment. The government has a poor record of addressing the most urgent issues, even though many of these problems are caused by the irresponsible exploitation of natural resources. Environmental conditions have a direct impact on people's quality of life, which in turn affects their lifespan and overall development. Because of the degraded soil, depleted aquifers, diminishing forest cover, deteriorating urban environment, and destroyed eco-systems, it will be extremely difficult to maintain future gains in living standards and quality of life. In order to attain sustainable development, environmental preservation must be a fundamental aspect of development; the two cannot be viewed independently. It is predicated on the notion that advancement is possible without making undue use of natural resources.

**Keywords:** Sustainable development, Environmental protection

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## I. Sustainable development: Meaning and features

Sustainable development means valid, efficient management and exploitation of the basic, natural, and financial resources as well as anthropogenic activities for accessing to an accepted pattern of consumption along with using technical possibilities and suitable structures in order to meet the needs of the present and future generations in a continual and satisfactory way ". Sustainable development is development which meets the needs of the present without compromising the ability of future generations to meet their own needs. The term " sustainable development" which was introduced for the first time by the Commission of Bertin land in a report titled " Our common future" in 1987 indicates of this undeniable fact that the lessons of ecology can and should be used in the economic processes.

The strategic concepts of global environmental conservation and the establishment of a rational environment in which the assertion of development is examined and contested in order to promote all facets of life are included in these lectures. "In order to meet the needs of the present and future generations in a continuous and satisfactory way, sustainable development means valid and efficient management and exploitation of the basic, natural, and financial resources as well as human force for accessing an accepted pattern of consumption along with using technical possibilities and suitable structures" (Mebratu, 1998). Another way to think about this idea is as a strategy that preserves the environment's function while safeguarding traditional societies.

In addition to not destroying the environment, sustainable development that conserves lands, water, genetic, plant, and animal resources is also technically sound, commercially beneficial, and socially acceptable. A sustainable development is one that meets current requirements without compromising the ability of future generations to meet their own. Given current trends in population increase and the predicted global population of over 9.3 billion by 2050, that seems like a difficult objective to achieve. Non-renewable natural resources are being depleted at a rate that will surely make it impossible for future generations to meet their own needs, unless we modify the way these resources are managed. Aside from fish and wood stocks, water supplies, rich soils, clean air, biomass, and biodiversity, the climate system's stability is also in jeopardy, as are the sources of minerals, metals, and energy. By 2050, 60% of the world's major ecosystems that support the production of food, animal feed, and fibre will already be degraded or used in an unsustainable way, despite a 70% increase in the demand for these resources. If we keep using resources at the current rate, we will need the equivalent of more than two planets to sustain us by 2050. Consequently, the aspirations of numerous individuals for an improved quality of life would remain unfulfilled.

Sustainability is a convoluted word, one that invokes images of humans living harmoniously with nature; or a system that good for people, planet and profit. The most comprehensive definition of sustainability refers to practices that allow the current population to meet their basic needs, without harming the needs of future generations. The topic of sustainable development has become ever-present in the last 30 years (Wichaisri

and Sopadang, 2018) yet how to achieve such a goal, or whether it is even possible, remains a major unknown. Although there are many perceptions of the concept of the sustainable development, this perception is universally agreed upon that sustainable development is a process of development which first of all is "ecologically" favorite. Lexically, "sustainable development" is a sort of development which can endure for a limited period, and the concept of sustainability often is regarded in terms of the renewable resources like jungles, marine resources, postures, soil and water, as well as the human force (Zhang, 2018). According to the definition of UNEP, sustainable development is a development which meets the needs of present generations without endangering the abilities of future generations in supplying their needs.

## II. GOALS TO ACHIEVE SUSTAINABLE DEVELOPMENT

The idea behind sustainable development is to achieve human development objectives while maintaining the capacity of natural systems to supply the natural resources and ecosystem services that are essential to the health of the economy and society (Cerin, 2006). Although the idea of sustainable development has been important since the beginning of time, it can be argued that its importance is growing every day as the population grows and the number of natural resources available to humanity does not. Global concerns for the wise use of the resources at hand have always been voiced in light of this issue. The latest of such concerns translated into the Millennium Development Goals (MDGs) and the Sustainable Development Goals (SDGs). The MDGs marked a historic global mobilization to achieve a set of important social priorities worldwide (Breuer et al., 2019). As part of this new development roadmap, the UN approved the 2030 Agenda (SDGs), which are a call to action to protect the planet, end poverty and guarantee the well-being of people.

### The 17 Sustainable Development Goals and their main objective



As per the United Nation Communications Group (UNCG) and the Civil Society Organization (CSO) [2017] stage on SDGs in Ghana, the SDGs are a widespread source of inspiration to end neediness, safeguard the planet and guarantee that all individuals appreciate harmony and success by 2030. Taken on by 193 nations, the SDGs became effective in January 2016, and mean to cultivate financial development, guarantee social consideration and safeguard the climate. The UNCG-CSO (2017) contends that the SDGs empower a feeling of organization among states, confidential area, examination, the scholarly world and common society associations (CSOs) — with help of the UN. This organization is intended to guarantee that the ideal decisions are made now to further develop life, in a feasible way, for people in the future. (Breuer et al., 2019).

## III. SUSTAINABLE DEVELOPMENT AND ITS ASPECTS

Although there are many perceptions of the concept of the sustainable development, this perception is universally agreed upon that sustainable development is a process of development which first of all is "ecologically" favorite. Lexically, "sustainable development" is a sort of development which can endure for a limited period, and the concept of sustainability often is regarded in terms of the renewable resources like jungles, marine resources, postures, soil and water, as well as the human force (Zhang, 2018). According to the definition of UNEP, sustainable development is a development which meets the needs of present generations without endangering the abilities of future generations in supplying their needs (the same). In the following figures we have "sustainable development" versus "unsustainable development" which their distinguish features are the quality of connection and the organic relation between resources and activities.

### 1. ENVIRONMENTAL CHALLENGES:

Environmental challenges are disturbances in ecosystem function (Jhariya et al. 2022). Furthermore, these problems might be caused by humans or they can occur naturally. These challenges are classified as critical

when the ecosystem cannot recover in its current state and catastrophic when the ecosystem is expected to collapse. The activity of conserving the natural environment on an individual, organisational, or governmental level for the benefit of both the environment and humanity is known as environmental protection (Figure 1). Environmentalism is a social and environmental movement that advocates for environmental issues through legislation, education, and activism (Eccleston, 2010).



**Figure 1. Venn diagram of sustainable development**

Human-caused environmental damage is a worldwide, continuous issue. Marine life suffers as a result of water contamination. Most researchers believe that if human society managed to live within planetary limitations, the projected peak global world population of 9-10 billion people could live sustainably within the earth's ecosystems (Alberro, 2020). The majority of environmental problems are created by the world's wealthiest people consuming far too many industrial goods (Jonas et al. 2015). In its "Making Peace With Nature" Report in 2021, the UN Environmental Program found that tackling critical planetary challenges including as pollution, climate change, and biodiversity loss was doable if parties worked together to meet the Sustainable Development Goals (Environment UN, 2021). Major current environmental issues may include climate change, pollution, environmental degradation, and resource depletion.

The conservation movement advocates for the preservation of endangered animals as well as the preservation of any ecologically vital natural regions, genetically modified foods, and global warming. The United Nations system has created worldwide frameworks for environmental challenges in three important areas, dubbed the "triple planetary crises": climate change, pollution, and biodiversity loss (UN News. 2021).

## 2. IMPACT OF ENVIRONMENTAL CHALLENGES ON LIFE

Environmental degradation is the deterioration of the environment caused by the depletion of resources such as air, water, and soil quality; the destruction of ecosystems; habitat destruction; wildlife extinction; and pollution. It is defined as any alteration or disturbance to the environment that is either detrimental or unwanted (Johnson et al. 1997). Environmental issues are the negative consequences of any human action on the environment. The biological and physical characteristics of the environment are both considered. Air pollution, water pollution, natural environment pollution, garbage pollution, and other major environmental issues are prompting widespread concern (Figure 2). There are numerous types of environmental degradation. The ecosystem gets degraded when natural habitats are destroyed or natural resources are exhausted. Attempts to address this issue include environmental protection and resource management (Babu et al., 2019).



**Figure2. Environment concerns**

Mismanagement that results in deterioration can also lead to environmental conflict, in which communities' band together to oppose the forces that mishandled the environment. Biodiversity, or the variety of life on Earth or in a specific habitat, is dwindling. Throughout the world, biodiversity levels have plummeted to dangerously low levels. Biodiversity has plummeted by 27% in the last three decades, according to the International Wildlife Federation. Biodiversity is in peril due to a variety of concerns such as urban development, deforestation, and climate change. The lack of biodiversity jeopardises the food chain, water sources, and other resources. Ecosystems decline until they cease to exist in the absence of sufficient biodiversity (Myers, 1993). The expense of biodiversity loss simply cannot be afforded by the globe. Combating biodiversity loss requires education and protection. Consider with a long-term perspective. Make environmentally friendly decisions. The greenhouse gas emissions don't come from cars or factories they come from deforestation. By 2030, we may only have 10 percent of the rainforests left the rest have been cut down for wood or wood pulp products, or cleared for agricultural uses. Portable water can be contaminated by airborne infections, poisons, and dangerous substances. An estimated 780 million people do not have any access to safe water. This isn't just a problem in developing countries. Our body, like the Earth, is mostly composed of water. To exist, both the land and your body require clean water. Furthermore, forests are home to more than 70% of the world's plant and animal species (Postel, 1994). Species are losing their habitat. Ecosystems become extinct. Climate change is continuing. There are fewer trees to absorb carbon dioxide and produce oxygen. It's all because of deforestation. People take down woods for a variety of reasons, including lumber and land, but no concept is good enough if it means there will be no forests left eventually. Several unintended consequences of deforestation exist (Babu et al., 2019).

### **3. STRATEGIES FOR SUSTAINABLE DEVELOPMENT**

Sustainable development means the rational or optimal use of resources in a way that maintains the pace of economic growth while maintaining intergenerational equity. This guide defines a sustainable development strategy as follows: A coordinated set of participatory and continuously improving processes of analysis, debate, capacity building, planning, and investment that integrates society's economic, social, and environmental goals and seeks compromise where it is not possible. To support the definition, this guide also offers a set of principles. These include a set of desirable processes and outcomes that, taken together, can ensure the success of sustainable development strategies.

To achieve sustainable development, the following needs to be done:

1. Limitation of human population.
2. Technological progress should be efficient and not consume resources.
3. Renewable resources should be extracted on a sustainable basis, i.e., the rate of extraction should not exceed the rate of regeneration.
4. For non-renewable resources, the rate of depletion should not exceed the rate of creation of renewable substitutes.
5. Inefficiencies caused by pollution should be corrected.

The principles emphasize local ownership of the strategy process, effective participation at all levels, and high-level engagement. They note the importance of convergence and coherence among different planning frameworks, integrated analysis, and capacity development.

#### **The following are the strategies of attaining sustainable development:**

1. Reduce, Reuse, and Recycle approach.
2. Use of the Input Efficient Technology.
3. Promoting environmental education and awareness.
4. Resource Utilization as Per Carrying Capacity.
5. Improving Quality of Life Including Social, Cultural and Economic Dimensions.

#### **1. Reduce, Reuse, and Recycle approach**

The 3-R approach of minimizing resource use, reusing them over and over again instead of sending them to the waste stream, and recycling materials goes a long way toward achieving sustainability goals. It reduces pressure on our resources and reduces waste generation and pollution. Industrial and household waste should be collected daily. These wastes should be divided into biodegradable and non-biodegradable wastes. Biodegradable wastes are those that can be decomposed and used as fertilizer for organic farming. The non-biodegradable waste such as plastic, etc. can be recycled and reused.

#### **2. Use of the Input Efficient Technology**

Input-efficient methods and techniques should be developed so that more production per unit of input is possible. This efficient use of natural resources leads to less exploitation of natural resources. An appropriate technology is one that is locally adaptable, environmentally friendly, resource efficient, and culturally

appropriate. It usually involves local resources and local labor. Local technologies are more useful, cost-effective, and sustainable. Nature is often used as a model, with the natural features of the particular region used as components. This concept is referred to as "designing with nature." The technology should use fewer resources and produce as little waste as possible.

### **3. Promoting environmental education and awareness**

Placing environmental education at the center of all learning will go a long way toward changing people's thought patterns and attitudes toward our earth and the environment. Introducing the subject as early as school will give young children a sense of belonging to the earth. 'Earth thinking' will gradually be incorporated into our thoughts and actions, which will contribute significantly to transforming our lifestyle into a sustainable one. The increasing use of fuels such as gasoline and diesel emits enormous amounts of carbon dioxide, which contributes to greenhouse effects. To curb pollution, the use of CNG and LPG should be encouraged. These fuels are cleaner, smoke-free and environmentally friendly. Use of non-conventional sources of energy is better. Gobargas in rural areas and CNG can be used in urban areas.

### **4. Resource Utilization as Per Carrying Capacity**

Climate is rich in sunlight, water and wind energy. These are free gift of nature which is inexhaustible and free from pollution. Efforts should therefore be made to harness solar and wind energy through the use of various technologies. This will not only solve the problem of economic growth, but also the problem of sustainable economic development.

### **5. Improving Quality of Life Including Social, Cultural and Economic Dimensions**

Any system can support a limited number of organisms in the long term, which is called carrying capacity. In the case of humans, the concept of carrying capacity becomes even more complex. This is because, unlike other animals, humans need not only food to live, but also many other things to maintain their quality of life. The sustainability of a system depends largely on the carrying capacity of the system. If the carrying capacity of a system is exceeded when the carrying capacity of a system is exceeded (e.g., by the over-exploitation of a resource), environmental degradation begins and continues until it reaches a point of no return. Carrying capacity has two basic components: support capacity, i.e., the ability to regenerate and assimilative capacity, i.e., the ability to tolerate various stresses. To achieve sustainability, it is very important to use resources based on the two characteristics of the system mentioned above. Consumption should not exceed regeneration, and no changes should be allowed that exceed the tolerance capacity of the system.

#### **Steps taken by government of India:**

The various steps taken by GOI will serve as crucial initiatives for the sustainable development in country, some existing schemes and programs towards sustainable development that are being undertaken by the government are:

- ✚ National Action Plan on Climate Change (NAPCC)
- ✚ National Solar Mission
- ✚ National Mission for Sustaining the Himalayan Eco-system
- ✚ National Mission for Sustainable Agriculture
- ✚ National Mission on Enhanced Energy Efficiency
- ✚ National Water Mission
- ✚ National Mission for a Green India
- ✚ National Mission on Strategic Knowledge for Climate Change

### **7. CAN WE ACHIEVE SUSTAINABLE DEVELOPMENT?**

In spite of the very difficult circumstances in which many developing countries currently find themselves in, sustainable development *is* achievable, however, it would require a lot of concentrated and coordinated effort. If appropriate supply-side policies, such as education and vocational programmes, were to be implemented, illiteracy rates would drop and people would be made more aware about the environment surrounding them which would contribute greatly to a rise in environmental awareness. In addition, an appropriate government, which prioritized the growth of green GDP instead of GDP measured by the usual methods, would have to come into power and use its budget efficiently in order to invest in green energies, health services, and benefits systems, amongst others. Of course, this is only touching the tip of the iceberg, nevertheless, it illustrates very well that sustainable development is achievable and straightforward, however, each of the steps underlined above are incredibly hard to achieve. Concluding, sustainable development is achievable, however, it is only achievable if everyone is dedicated to achieving it. In order for this to happen, the world needs a wakeup call of cosmic dimensions – the only worry is it might be too late by then.

#### IV. CONCLUSION

The three components of technology, human resources (environment), and democracy are connected in a humane, rational, democratic, and intellectual way in the notion of sustainable development. We can anticipate a bright future for sustainable development owned by responsible organisations, public and specialised trainings, and mass engagement if human beings and their green and environmental insights are the main actors of this process. Since we live as citizens in a biological-social environment and depend on agriculture for our livelihood, the ideas of sustainable development and "sustainable agriculture" are combined. Any constructive or developmental project in nations like Iran that does not prioritise the interests of future generations, environmental safety and stability, and the human element would be deemed antidevelopment and damaging. Involving knowledgeable and interested parties in the process, taking advantage of various forms of individual and group training, and seeking assistance from international observer organisations like the UN, FAO, and WHO are all necessary to achieve the significant and noteworthy goals of sustainable development.

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