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## Chapter 6

# Sustainable Management of Natural Resources for Preventing Desertification and Adapting to Climate Change in Developing Countries: Need for Policy

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**Abstract:** The paper discussed sustainable management of natural resources for preventing desertification and adapting to climate change in developing countries: Need for policy. It highlights the key concepts of sustainable management of natural resources, preventing desertification for enhancing sustainable management of natural resources, need for sustainable management of natural resources as well as challenges of sustainable management of natural resources. Sustainable management of natural resources involves the responsible planning, use, conservation and restoration of natural resources such as land, water, forests, minerals and biodiversity to ensure that they meet present human needs without compromising the ability of future generations to meet their own needs. Sustainable management of natural resources in developing countries is crucial for promoting long-term economic development, environmental health and social stability. The approach seeks to balance environmental health, economic development and social well-being by using resources efficiently and responsibly, avoiding overexploitation, maintaining ecological balance and biodiversity of natural ecosystems, promoting long-term resource availability through regeneration and conservation and involving local communities and respecting indigenous

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knowledge and rights. Developing countries often rely heavily on natural resources such as forest, water, mineral and arable lands for their livelihoods, economic growth and public revenue. However, mismanagement and overexploitation can lead to environmental degradation, conflict and poverty. Aligning natural resources management with climate change adaptation and mitigation plans and developing early warning systems for droughts, floods and other natural disasters remain paramount in order to prevent desertification and ensure environmental sustainability which enhances economic development.

**Keywords:** Sustainable, management, natural resources, desertification, climate change and adaptation

## Introduction

Sustainable resource management is essential for ensuring the availability of natural resources for future generations. It involves managing resources in a way that meets the needs of the present without compromising the ability of future generations to meet their own needs (International Resource Panel, 2019). Changes in climate interact with the underlying changes in the environment, adding further stresses to a deteriorating situation. A reduction in precipitation projected by some general circulation models (GCMs) for the Sahel if accompanied by high inter-annual variability could be detrimental to the hydrological balance and disrupt various water dependent socio-economic activities (Zinyowera et al., 2001).

African continent is believed to be particularly vulnerable to the impacts of climate change because of factors such as widespread poverty, recurrent droughts, inequitable land distribution, and overdependence on rain-fed agriculture. According to Intergovernmental Panel on Climate Change (IPCC), (2007), it is estimated that the impact of global warming on specific regions of the world, particularly Nigeria, especially drought-affected areas will likely increase. This means that droughts and desertification will get more severe in areas that are already prone to such disasters. Natural resources are usually affected by global warming arising from climate change.

Desertification is the process by which fertile land becomes barren and unsuitable for agricultural purposes due to a variety of reasons, including unsustainable agricultural practices or deforestation (DGB Group, 2023). Desertification affects over 3.2 billion people worldwide, making it a major environmental challenge. Human activities accelerate the issue of desertification in Africa even further. Overgrazing, negative agricultural practices and deforestation are three large contributors, all of which are encouraged by a growing population, much of which lives in extreme poverty and relies directly upon the land in order to survive. According to DGB Group (2023), deforestation also has a negative impact and severe consequences which leads to desertification. Planting trees is an important part of the solution to prevent further desertification in Africa, alongside the implementation of more environmentally-friendly agricultural methods. However, despite the gravity of the situation, there are several successful examples of desertification that was prevented or reversed around the world.

Sustainable management of natural resources involves utilizing natural resources in a way that maintains and improves the resilience of ecosystems and the benefits they provide. This approach aims to meet the needs of current generations without compromising the ability of future generations to meet their own needs, while also supporting the achievement of welfare goals outlined in the Act on the Wellbeing of Future Generations (Natural Resources Wakes, 2020). Natural resources are sources that are drawn from nature which are used to support life and meet people's desires, and used with few changes. Any natural substance that human beings use can be considered a natural

resource. Oil, coal, natural gasoline, metals, stone, and sand are natural resources (Mohd, Seca and Engku, 2023). Natural resources are assets that can be obtained from the environment such as water, soil, plants, wind, animals, minerals, sun among others. They are often seen in terms of economic value, because so many of them are crucial for people's livelihoods (United Nations Peace Building Commission, 2007). Natural resources provide fundamental support to life and economic processes.

Natural resource can be defined as a feature or component of the natural environment that is of value in serving human needs, for example, soil, water, wildlife, etc. Some natural resources have an economic value (e.g., timber) (United Nations Peace Building Commission, 2007). Mohd, Seca and Engku (2023) also defined natural resources as materials created by nature such as soil, water, land, minerals, vegetation, and wildlife, as well as power resources like coal, gas, and sunlight that fulfill human needs and desires.

According to Mitchell (2002), natural resources can be abiotic, biotic, and cultural attributes that exist on, in, or above the Earth. These sources play a critical role in shaping environmental settings and determining how they can be utilized by humans and other living organisms. These materials are considered "natural matter" until humans recognize their presence, attach value to them, and find ways to utilize them. When humans utilize these resources, they give them a new purpose and turn them into a source of subsistence, or a herbal resource. As a result, these natural materials fulfill a new function in human society (Mohd, Seca and Engku, 2023).

Natural resources provide benefits that are essential for meeting basic human needs such as air, shelter, food, and clothing. They are considered a part of humanity's natural heritage and are often protected in nature reserves. Barsch and Burger (2014) suggested that natural resources can be classified in various ways, and one common classification is based on their exhaustibility and regenerative power. At their most fundamental level, every man-made product is made up of natural resources.

Mohd, Seca and Engku (2023) categorized natural resources into two categories; renewable and non-renewable resources. Renewable resources refer to natural resources that are relevant for human planning such as forests or water. However, they can still be depleted. Whereas for non-renewable resources, the stock provided by each is constant in the period relevant for human planning which includes traditional energy sources such as gasoline or coal.

Natural resources management is the management of natural resources such as land, water, soil, plants, and animals, with a specific focus on how management influences the quality of life for both present and future generations (stewardship). Natural resources management involves managing the interaction of various fields such as natural heritage management, land use planning, water management, biodiversity conservation, and sustainability of industries such as agriculture, mining, tourism, fisheries, and forestry. This approach recognizes that human livelihoods depend on the health and productivity of our landscape and that humans have a responsibility to act as stewards of the land to maintain its health and productivity (Aggarwal and Elbow, 2016).

According to Natural Resources Wales (2020), sustainable management of natural resources involves utilizing these resources in a way that maintains and improves the resilience of ecosystems and the benefits they provide. This approach aims to meet the needs of current generations without compromising the ability of future generations to meet their own needs, while also supporting the achievement of welfare goals outlined in the Act on the Wellbeing of Future Generations (Natural Resources Wales, 2020).

Africa has numerous natural resources and they are in large quantities. These natural resources range from land, oil, water, fossil fuels and wildlife. Africa is home to the world's largest arable land,

water, oil natural gas, minerals, forest, and wildlife. It is home to about 30% of the world's natural gas and 12 percent of the world's oil reserve. Africa has 40 percent of the world's gold and 90 percent of Chromium and Platinum. Importantly, Africa is home to 65 percent of the world's arable land and 10 percent of the planets internal renewable fresh water (UNEP, 2022).

Nigeria is a country in Africa which is rich in natural resources. The Nigerian economy highly depends on these resources. Nigeria is richly endowed with numerous natural resources ranging from industrial metals to various precious stones such as Barites, Gypsum, Kaolin, Marble, etc. Almost all the states in Nigeria have one type of natural resources and the other (Aggarwal and Elbow, 2016).integration of geospatial technologies into environmental education offers transformative potential for enhancing place-based learning and fostering sustainability awareness. Geospatial tools such as Geographic Information Systems (GIS), Global Positioning Systems (GPS), and remote sensing technologies allow learners to analyze spatial patterns, engage in real-world problem-solving, and better understand human-environment interactions. This chapter explores the role of geospatial technologies in environmental education, examines case studies, and provides practical strategies for integrating these tools into curricula. It highlights how this integration cultivates critical thinking, promotes environmental stewardship, and empowers learners to become active participants in sustainable development.

Environmental education is evolving to address complex, dynamic environmental issues such as climate change, biodiversity loss, and pollution. Traditional pedagogical approaches often fall short in engaging learners with the spatial and systemic nature of environmental challenges. In this context, **geospatial technologies**, including GIS, GPS, and remote sensing—provide powerful tools for enriching learning experiences, particularly through **place-based learning** that emphasizes the local context and personal relevance (Gruenewald, 2003; Bednarz & van der Schee, 2006).

The application of these tools not only enhances conceptual understanding of environmental systems but also supports the development of sustainability competencies, such as systems thinking, problem-solving, and civic engagement (Tilbury, 2011). This chapter examines the integration of geospatial technologies into environmental education to promote place-based learning and sustainability awareness.

### **Concept of Sustainable Management of Natural Resources**

Natural resources management is the management of natural resources such as land, water, soil, plants, and animals, with a specific focus on how management influences the quality of life for both present and future generations (stewardship). Natural resources management involves managing the interaction of various fields such as natural heritage management, land use planning, water management, biodiversity conservation, and sustainability of industries such as agriculture, mining, tourism, fisheries, and forestry. This approach recognizes that human livelihoods depend on the health and productivity of the landscape and that humans have a responsibility to act as stewards of the land to maintain its health and productivity (Aggarwal and Elbow, 2016).

Natural resources management is established on these basic principles; legitimacy, transparency, accountability, involvement, fairness, integration, capability, and adaptability. It entails managing the way people and the natural environment interacts. It is the sustainable utilization of major resources such as land, water, air, minerals, forest etc. because natural resources provide the basic and fundamental life support for humans (Tayagi, 2021). This support is for both consumption and for public goods and services. Some of the key areas natural resources management is concerned are

in the area of sustainable management of land resources, maintaining and enhancing water assets, protecting and enhancing the marine and coastal environment, conserving and recovering biodiversity, enhancing skills, capacity, and engagement and delivering high-quality planning that leads to effective action.

Natural resources are closely linked to the global agenda of Sustainable Development Goals (SDGs), a principle that forms a basis for land management and environmental practices worldwide. Sustainable management of natural resources involves a scientific and technical understanding of resources and ecology, as well as an understanding of the supportive capacity of those resources. This approach aims to meet the needs of the current generation without compromising the ability of future generations to meet their own needs. This concept helps in sustainably managing natural resources as the resources are utilized and saved.

According to Tayagi (2021), sustainable management of natural resources demands the following:

- Using resources carefully and wisely as these resources are limited and finite.
- A long-term perspective that takes into account the needs of future generations, so that these resources will last for the generations to return and cannot merely be exploited for short-term gains.
- Minimize the damage caused to the environment during the extraction and use of these resources.
- Planning for the safe disposal of the waste which is generated during the extraction and use of these resources.

The United Nations Division for sustainable development indicated the following areas to be within the scope of sustainable development, namely; agriculture, education, international law, energy, atmosphere, sustainable tourism, biodiversity, biotechnology, finance, technology, capacity building, forest, toxic chemical, climate change, fresh water, institutional arrangement, human settlement, land, transport, industry, water sanitation (Aggarwal and Elbow, 2016).

From the foregoing, there is need for sustainable management of natural resources. The reasons for sustainable management of natural resources are not farfetched. The resources of the earth are limited in supply and most of them especially the non-renewable ones have fixed quantity deposited. Human population is dynamic and increasing at a very rapid rate. Sustainable management enables for controlled utilization of the fixed quantities of resources to meet the need of the present generation while allowing the generations yet unborn the access to the same resources. In the spirit of sustainable management, many international organizations such as OPEC have imposed a production ceiling on its member states in order to avoid flooding their products in the world market thereby decreasing wastage of the product which should be used by future generations.

Organization for Economic Co-operation and Development (2019) summarized the contribution of sustainable natural resources to development in the following:

- Sustainable natural resources management is as much a question of sustainable economic development as it is of environmental protection.
- Natural resources have proven to be both opportunity and curse for nations endowed with them.
- Getting prices right for natural resources is of utmost importance for more sustainable management and long-term benefits from resource-related wealth.
- Multi-stakeholder participation processes improve the robustness and legitimacy of decision making and are more likely to lead to sustainable outcomes.
- Transparent and effective mechanisms for revenue management are essential instruments for ensuring that natural resource wealth translates into sustained economic development.
- Knowledge, social and economic conditions are in constant flux, which means that institutions and policies are more likely to succeed over the longer term if they are able to respond and adapt.

## **Preventing Desertification for Enhancing Sustainable Management of Natural Resources**

Desertification is a serious problem across significant areas of the African continent. Widespread land degradation and soil erosion affect the livelihoods of local communities and wildlife. There are two main drivers behind desertification, namely; climate variations and human activities. Large parts of Africa experience a rather hot and dry climate, one which is becoming even more extreme and unpredictable due to climate change. Ever-growing populations are also increasing the demand for overgrazing, agriculture and deforestation, which degrade the land even further (Organization for Economic Co-operation and Development, 2016).

According to DGB Group (2023), the Great Green Wall is a massive tree-planting initiative that aims to combat desertification in Africa. The initiative, which was launched in 2007, seeks to plant a wall of trees spanning over 8,000 kilometers from west to east of the African continent. Participating countries include Djibouti, Eritrea, Ethiopia, Sudan, Chad, Niger, Nigeria, Mali, Burkina Faso, Mauritania, and Senegal. The project aims to reforest 100 million hectares of degraded land, providing a host of environmental benefits, including soil conservation, carbon sequestration, and biodiversity conservation. More than 20,200 hectares of trees have been planted so far in Senegal, and overall more than 181,000 hectares of land have been restored (DGB Group, 2023).

Preventing desertification is crucial for sustainable resource management. It involves strategies like reforestation, water conservation, and sustainable land management practices to restore degraded land and improve soil health. These measures not only combat desertification but also enhance agricultural productivity, mitigate climate change, and improve livelihoods (Mohd, Seca and Engku, 2023).

Although characterized by the collapse of the underlying ecological basis of traditional agriculture, desertification is an environmental problem born out of the interplay of natural forces and human mismanagement. The United Nations Convention to Combat Desertification (UNCCD) also acknowledges the complex interactions of human activities and climatic variations as the cause of desertification. The Convention defines desertification as land degradation in arid, semi-arid and dry sub-humid areas resulting from various factors, including climatic variations and human activities. Such human activities may be as a result of political, social, cultural and/or economic factors. The process of desertification is generally perceived to be slow and therefore apparently inconspicuous.

In dry seasons, the desert could be seen to be expanding only for it to shrink back in wet years or seasons. What may actually be happening is that isolated areas that are degraded due to human activities and/or climatic variations expand subtly over time and eventually merge. Subsequent human activities will accelerate the degradation until the land is bereft of vegetation and turns into a desert. Drought, especially if prolonged and/or repeated at short intervals, exacerbates and aids the process of desertification (Mohd, Seca and Engku, 2023).

The National Policy on Drought and Desertification (NPDD) which was established in 1991 in Nigeria recognizes that climate change could intensify drought and desertification in the northern part of the country that are very prone to these environmental problems. In this regard, specific strategies must be implemented to moderate the negative impacts of climate change on drought and desertification. The specific focus of the policy with respect to climate change is the equipment of relevant agencies, institutions and citizens adequately to collect, analyze and use climate data effectively to ameliorate and combat drought and desertification in Nigeria.

Some of the implementation strategies for the policy that implicitly indicate climate adaptation preparedness include: (i) strengthening of agencies, institutions and facilities for the collection and analyses of meteorological and hydrological as well as for dissemination of information; (ii)

upgrading the existing national early warning facilities for more efficient service delivery; (iii) developing appropriate awareness programmes for formal and informal education to enhance knowledge on climate and environment issues; and (iv) encouraging appropriate land use that enhances carbon dioxide sequestration, such as afforestation, reforestation and agroforestry. This also reduces soil erosion and increases crop productivity for economic development.

The NPDD was preceded by a National Action Programme (NAP) to combat desertification and mitigate the effects of drought and was developed in 2000, and it remains the main implementation modality for the policy. NAP was developed in line with Article 10 of the UN Convention to combat desertification as a key operational tool for the implementation of the Convention. The document spells out long-term integrated strategies that focus simultaneously on improved productivity of land, and the rehabilitation resources in dry sub-humid, semi and arid areas of Nigeria, with particular emphasis on agriculture, water resources management and environmental rehabilitation, regeneration and conservation.

In addition, Nigeria has in place a Drought Preparedness Plan (2005) which, although may not have explicitly addressed climate change, contains a number of adaptation strategies in some of its specific objectives. There are also environmental laws that are meant to regulate the activities of the people on the environment and help to conserve the natural resources. Legal Career Path (2022) defined environmental laws as the collection of laws, regulations, agreements and common law that governs how humans interact with their environment. Environmental laws are the tools which help manage the conservation of natural resources in a country (Mustapha and Naibbi, 2017).

The following laws are some of the environmental laws in Nigeria; namely; Factories Act (1917), Civil Aviation Act (1937), Exclusive Economic Decree (1965), Nigeria Atomic Energy Commission Decree (1985), Natural Resources Conservation Council Decree (1985), River Basins Development Authorities Decree (1989), among others. Other environmental laws in Nigeria include National Environmental Protection (Effluent Limitation) Regulations, National Environmental Protection (Pollution Abatement in Industries and Facilities Generating Wastes) Regulations, National Environmental Protection (Management of Solid and Hazardous Wastes) Regulations, Environmental Impact Assessment Act of 1992 (EIA Act), among others.

In an attempt to implement the Environmental Policy, Nigeria has enacted specific policies and action plans that, if properly implemented could be adapted to support national climate change adaptation response efforts, particularly with respect to:

- Drought and desertification (National Policy on Drought and Desertification; Drought Preparedness Plan, 2007).
- Erosion, flood control and coastal zone management (National Policy on Erosion, Flood Control and Coastal Zone Management, 2005).
- Forestry (Draft National Forest Policy, 2006).
- Biodiversity protection (National Biodiversity Strategy and Action Plan, 2004).

In 2011, the following environmental laws came into effect; National Environmental Protection of Endangered Species in International Trade Regulations, National Environmental Standards for Telecommunications and Broadcasting Facilities Regulations, National Environmental Soil Erosion and Flood Control Regulations, National Environmental Control of Bush/Forest Fire and Open Burning Regulations, National Environmental Domestic and Industrial Plastic, Rubber and Foam Sector Regulations, National Environmental Coastal and Marine Areas Protection Regulations, National Environmental Construction Sector Regulations, National Environmental Control of Vehicular Emissions from Petrol and Diesel Engines Regulations, National Environmental Non-

Metallic Minerals Manufacturing Industries Sector Regulations, National Environmental Surface and Groundwater Quality Control Regulations and National Environmental Electrical/Electronic Sector Regulations (Oruonye and Ahmed, 2011).

There are also about five (5) key principles of environmental law, namely; Sovereignty and Responsibility Principle, the Precautionary Principle, The Prevention Principle, the "Polluter Pays" Principle and Sustainable Development Principle. These principles were formulated to help in protecting the environment and invariably conserve the natural resources.

Without environmental laws it will be impossible to manage the use of the environment. Environmental laws are essential for the conduct on the environment, considering that without these laws the environment will be exploited and harmful materials introduced to it. Therefore, the main objective of environmental law is the protection of human health as well as the environment (Budnukaeku and Oku, 2021). The enforcement of environmental regulations helps to protect the environment from man's excesses that leads to environmental degradation (Oruonye and Ahmed, 2011).

Environmental laws also help in pollution prevention, risk assessment and risk reduction and identifying those issues which pose the greatest risks to human health and the environment and taking action to reduce danger on the environment. Environmental laws also help in protecting people and the environment from significant health risks, sponsors and conducts research, and develops and enforces environmental regulations. Environmental law is necessary to combat issues related to the environment and conservation of natural resources. These issues are related to global warming, climate change, greenhouse gas emissions, acid rain, hunting of endangered species, deforestation, depletion of natural resources, pollution of water, air and soil (Conservative Energy, 2021).

### **Need for Sustainable Management of Natural Resources**

All sources that are used and consumed by humans are ultimately derived from natural resources. However, due to factors such as population growth, industrialization, and urbanization, the demand for these resources is steadily increasing while their availability is limited. This has concerns about the sustainability of resource use and the need for more responsible management practices to ensure that these resources are available for future generations. Therefore, there is a need for sustainable management of natural resources. These include:

- i. Judicious use of natural resources and avoiding wastage of natural resources.
- ii. Long-term planning is essential for the sustainable use of natural resources, ensuring that they are available not only for the present but also for future generations.
- iii. The exploitation of natural resources should not be limited to benefiting only a few people or groups but should be distributed equitably for the benefit of all.
- iv. When extracting and using natural resources, it is important to plan for the safe disposal of waste to prevent damage to the environment.

Determining how people can and should access, benefit from, participate in decision-making on, and have responsibility over natural resources has been shaped by concepts such as property and rights. On the one hand, property rights divide lands and territories into private property, where rights are held by individuals or companies; common property, where rights are shared by a community; public property, where rights are held by government; and open access areas, where no specific rights are assigned (Aggarwal and Elbow, 2016). Property rights are closely tied to rights over natural resources, which include the right to use a resource, such as hunting in a forest; or management rights that grant authority to decide on use, for example, imposing seasonal

hunting restrictions. In terms of governance, different types of ownership and access rights can be held simultaneously by several actors: a wetland can be owned by the state, managed by a local council, and used as fishing grounds by communities.

Inclusive decision making is key for sustainable resource management. Just as gender norms have influenced structures for access and use, they have also shaped behaviors and the knowledge acquired, with women holding unique agroecological expertise linked to crop resilience and nutrition (UN Women, 2018). So, unless decision-making processes are gender-responsive and inclusive, they risk overlooking women's specific needs and roles, and will fail to ensure the inclusion of ecological knowledge important for enabling sustainable practices.

The same can be said for including Indigenous Peoples and local communities in resource management. They play significant contributions to the safeguarding and sustainable use of natural resources and biodiversity. Important benefits come with inclusive and community-led governance structures and decision-making processes, which, in addition to protecting and enabling sustainable use of resources, can strengthen community support systems and local economies, as well as revitalize Indigenous and local knowledges and languages (Parkes and Hoewitz, 2009).

In order to better balance the three dimensions of sustainable resources governance, social justice, environmental health, and economic development there is need for a rethink on economic, social, political, and technological systems that currently enable damaging production practices and wasteful resource consumption. Other ways of living are possible, from the ways the societies and economies are structured, the relationships formed with each other and with ecosystems, to ensuring that the priorities of leaders align with the interests of the many rather than the few. To realize these shifts, governments should develop extended producer responsibilities and supply chain legislation to enhance fairer distribution of benefits and harms stemming from resource use and promote the protection of human rights in ways that ensure ecological wellbeing and social justice (Aggrawal and Elbow, 2016).

Decision making must be inclusive and account for the needs, rights, and knowledges of historically marginalized communities and groups. Governance structures must recognize and support pre-existing sustainable practices at local and regional levels, as well as nourish the emergence of more sustainable patterns of resource use and management. This will require strengthening tenure rights and re-distributing power across all stages of decision-making.

### **Challenges of Sustainable Management of Natural Resources**

Sustainable management of natural resources faces numerous challenges, primarily revolving around balancing human needs with environmental preservation. Key challenges include balancing economic growth with environmental protection, the impact of climate change on resource availability, overexploitation of resources, and the need for better governance and policy frameworks. Resource depletion, overconsumption and unsustainable resource use are leading to the depletion of natural resources, such as forests, water, and minerals.

- i. **Biodiversity Loss:** Unsustainable resource management can contribute to biodiversity loss by destroying habitats and reducing the availability of resources for species.
- ii. **Environmental Degradation:** Unsustainable resource management can also lead to environmental degradation, such as pollution, soil erosion, and desertification.
- iii. **Intergenerational Equity:** Sustainable resource management is about ensuring that future generations have access to the same resources and opportunities that is being enjoyed today.

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According to Mohd, Seca and Engku (2023), there are a large number of challenges that need to be met for sustainable management of natural resources in order to achieve a better future. Some of these key challenges include the following:

a. **War and Instability:** When there is turmoil, instability and war between nations it stands to reasons that sustainable development cannot occur. For instance, the war in Ukraine has had an impact on sustainable development. In fact, one of the biggest issues that have affected countries outside of Ukraine are issues surrounding food sustainability since Ukraine and Russia are big producers of wheat and barley. In fact, Russia and Ukraine account for around 30% of all exports around the world, which is a big figure and ultimately has a significant impact on food production and availability. This is one of the effects of globalization is that nations have become dependent on each other to support their own standards of living. It is difficult to maintain a civil society and the well-being of people when there is war or the threat of conflict over a country. In these cases, sustainable development goals cannot be easily met.

b. **Suitability and Availability:** Another issue is the ability of a nation to implement sustainable development programmes in their country. It is common for developed nations to suggest to developing nations that the process they use in their own countries should be future proofed and sustainable, but this raises the question whether this is firstly possible and secondarily pragmatic. This is why developing countries need subsidies and support from the developed world to help them reduce their liabilities towards non-sustainable enterprises. Take for example forestry. In some countries their vast forests are resources that they can use to improve the lives of their citizens. However, this might come at a cost to biodiversity and of the natural resources that are being consumed. It can be easy for a western developed nation to suggest that these forms of economic development should be reduced. Greenhouse gas emissions and environmental issues are important but without incentives and buy-in from governments, policy makers and the private sector, it is unlikely that sustainable development initiatives surrounding will be a priority. Sustainable development programmes need to be tailored to fit the local context. They need to take into consideration the current level of developmental stage each country is currently at, and support them accordingly, to implement competitive and useful sustainable development programmes that do not hinder their development. There is no point in addressing global sustainable developmental issues at a cost of the progress and improvement of other developing nations.

In many cases where there are issues surrounding environmental degradation it is important to introduce modern technologies that can help provide better synergies between the use of a country's resources and its sustainability of that resource.

c. **Governmental Issues:** Other issues relate to what initiatives governments may want to sign-up to, and how keen they are on sustainable development. Most governments sign up to issues surrounding global warming and other climate issues, but not always. In some cases, there is a political initiative to reject environmental issues and sustainable development goals to instead address the immediate needs of their country or populous. For example, promoting and supporting legacy fossil fuel industries because they play a big part in supporting deprived local communities and areas. Closing certain industries without replacing them can lead to certain communities suffering job losses and poverty. In these locations many governments are resistant to change related to sustainable development programmes.

Often political parties can get into power based around supporting certain stakeholders and groups that are opposed to and have incompatible view with sustainable developmental goals. For instance, gaining support from the fossil fuel companies and lobbyists. Once in power it is difficult for a

government to then reverse those policies with more sustainable decision-making since their support base have incompatible agendas.

Ultimately, sustainable development needs to take place within the right political climate for it to be successful and often sustainable development only works if it offers positive results for the government in question.

d. **Poverty and Unemployment:** One of the goals of sustainable development is to end poverty but this is not an easy task and cannot be done without addressing a number of other issues that contribute to poverty. Some of the issues relate to inequalities and economic opportunities that people face. This can be inequalities between different countries. It is well known that people in developed nations tends to be (as a whole group) better off financially than those individuals who live in developing nations. However, inequalities can occur within a country itself. For example, the difference in wealth that may be found in urban areas when compared to some rural locations where employment can be difficult to obtain or is less well paid.

Inequalities also occur between men and women. In many countries women lack access to well-paid employment or any employment at all. Often, sustainable development programmes in term of employment initiatives have goals related to equality of opportunity. Without addressing the issues surrounding the causes of poverty within any given community, then it can be difficult to reduce poverty, and in turn also difficult to address some of the wider goals and challenges of sustainable development.

Unfortunately, addressing poverty and global development has become more difficult after 2020 with additional global challenges such as the global downturn, recession and a slow recovery from the Covid-19 pandemic.

e. **Population Growth:** Another potential challenge for sustainable development is population growth. As the United Nations indicated in their reports, population growth in developing countries can be seen as both a success and a challenge for the future. The larger the world's population, the more resources are needed to ensure that people remain out of poverty and have utilities such as fresh water and electricity.

Environmental management is much more than biophysical manipulation and control. It concerns the mutually beneficial management of the humankind-nature interaction to ensure environmental and social equality for future generations. It begins with a sense of collective vision about the future, and continues with difficult decisions about the appropriate balance between industrial production, consumption and environmental quality. The nature of these decisions implies that the realization of sustainable development, no matter how it is defined and on what scale, is an intensely political process involving continual tradeoffs between economic, social and biophysical needs and objectives. It is a political process of mediation in which old Right-Left thinking is largely irrelevant. This no doubt, is the fascinating human dimension in environmental management (Carley and Christie, 2000).

The objectives of sustainable development and integrated environmental development challenges pose problems for institutions, national and international, that were established on the basis of narrow preoccupations and compartmentalized concerns. Governments' general response to the speed and scale of global changes has been a reluctance to recognize sufficiently the need to change.

The point of fact is that the challenges are both interdependent and integrated requiring comprehensive approaches and popular participation. Yet, most of the institutions facing those challenges tend to be independent, fragmented, working to relatively narrow mandates

with close decision processes. Those responsible for managing natural resources and protecting the environment are institutionally separated from those managing the economy. The real world of interlocked economic and ecological systems will not change; the policies and institutions concerned must. Thus, there is a growing need for effective international co-operation to manage ecological and economic interdependence (Aggarwal and Elbow, 2016).

## Conclusion

The need for sustainable management of natural resources lies in protecting the ecosystems foundation, supporting economic and social development and ensuring fairness and security of current and future generations. Developing countries face the dual challenge of promoting economic growth while preserving their natural resource base. The natural resources which include the flora and fauna, renewable and non-renewable are depleting and have been impacted adversely through the activities of man. The sustainability of the natural resources therefore becomes the sole objective of humans. The natural resources are important to man as it serves man's basic needs. As natural resources play an essential role in supporting the livelihoods of the majority of the world's poor, improvements in managing and extracting natural resources and practices can have huge repercussion on ecosystems, the environment they rely on, as well as a country's potential to meet the Millennium Development Goals (MDGs). Every effort at preservation, sustainability and accountability is the basic mandate of all. Effective policy interventions can support sustainable management of natural resources by integrating environmental, economic and social goals. It is paramount to establish clear legal frameworks for resource use and protection, enhance institutional capacity for environmental monitoring and enforcement and combat corruption in resource management through transparency and accountability.

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