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NATURAL RESOURCE MANAGEMENT STRATEGIES FOR SUSTAINABLE DEVELOPMENT: A CRITICAL ANALYSIS OF POLICY FRAMEWORKS

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ABSTRACT
Natural resource depletion, which is unprecedented, is one of the most important threats to sustainable development in the 21st century. The policy frameworks in this paper are critical analyses of natural resource management at the global, regional, and national levels. By providing a literature review and analyzing the data presented by the authoritative sources, such as UNEP, FAO, and IRENA, this paper will discuss the efficiency of existing strategies of managing the available resources to attain the objectives of sustainability. The study shows that the world's resource mining has increased threefold in the last 50 years, and the figures are likely to rise by another 60 percent by 2060 should the current trends prevail. The analysis indicates that the extraction and processing of resources contribute more than 60 percent of greenhouse gases and 40 percent of health contributions to air pollution issues. The water problem is experienced by about 3.2 billion individuals in agriculture, and deforestation is being caused at a terrifying rate despite global conservation efforts. It compares the key policy frameworks, such as the Sustainable Development Goals (SDGs) and SDG 12, sustainable consumption and sustainable production, and scrutinizes case studies in different nations that are applying the principles of the circular economy. The results have shown that high levels of inequality exist in the consumption of resources, with high-income countries consuming six times more resources and creating ten times the impact of climate change than the low-income countries. The paper suggests combined policy solutions with a focus on resource efficiency, the adoption of a circular economy, enhanced governance instrumentation, and the harmonious distribution of resources. It ends by concluding that to have sustainable natural resource management, there is an urgent and coordinated action at the global level that involves a combination of technological innovation, policy reform, and behavior change that will guarantee intergenerational equity and planetary health.

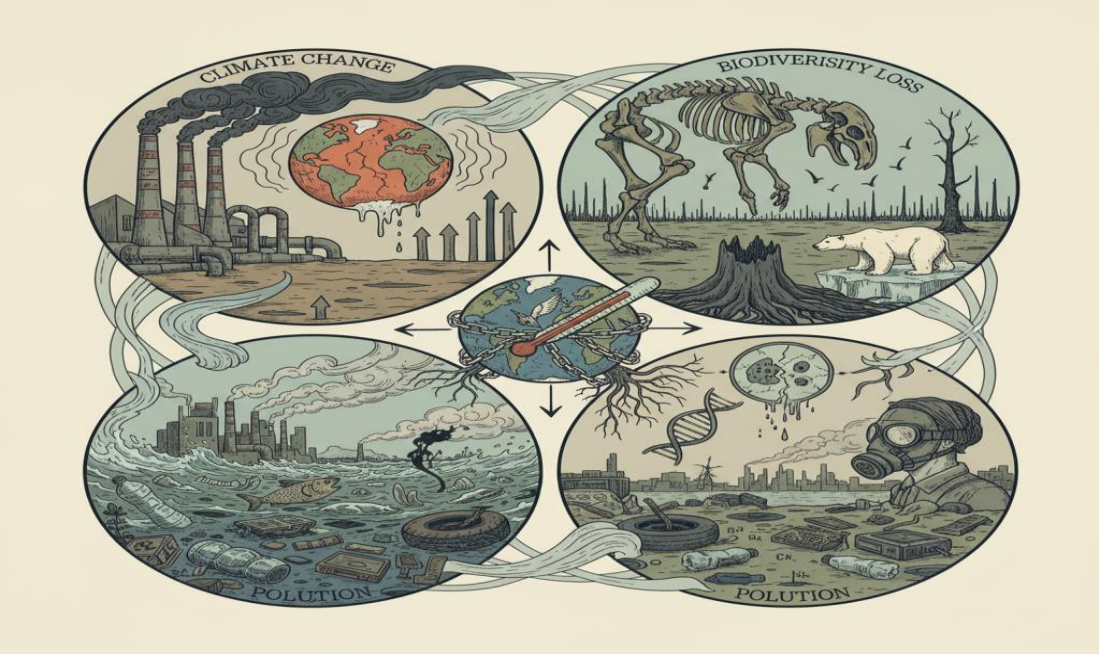
Keywords: Natural resource management, Sustainable development, Policy frameworks, Resource depletion, Circular economy, SDG implementation, Environmental governance, Resource efficiency, Water scarcity, Climate change mitigation.'

1. INTRODUCTION

The basis of the human civilization and economic growth is made up of natural resources. The accessibility and sustainable use of resources like water, forests, minerals, and fossil fuels directly determine the prosperity of the world, environmental stability, and human well-being. The growing rate of resource exploitation due to population increase, urbanization, and consumption trends has, however, led to a triple climate change, biodiversity reduction, and pollution planetary crisis (United Nations Environment Program [UNEP], 2024).

According to the reports published in the Global Resources Outlook 2024, the extraction of natural resources has tripled over the last five decades and, compared to 1970 (30 billion tonnes of natural resources), this growth increased to 106 billion tonnes in 2020, which corresponds to an average of 23-39 kilograms of materials per day, per capita (UNEP & International Resource Panel [IRP], 2024). This growth curve has been estimated to continue exponentially, and by 2060, the rate of resource extraction could be 60 percent higher than in 2020, assuming that the current consumption trends remain the same.

Image 1: Triple Planetary Crisis



The consequences of unsustainable exploitation of resources are immense and far-reaching, as far as the environment is concerned. Over 60 percent of the total global greenhouse gas emissions and 40 percent of the health impacts of the air pollution are attributed to resource extraction and processing activities (Resource Panel, 2024). Biomass is extracted and processed (crops and forestry products), which leads to the loss of biodiversity and water stress of 90% of the land, and also, one-third of the amount of greenhouse gas emissions is formed. Equally, the mining and refining of fossil energy, metals, and non-metallic minerals together contribute to 35 percent of the worldwide emissions (UNEP, 2024).

It is against this context that the international community has come up with different policy frameworks that are geared towards ensuring sustainable management of natural resources. Sustainable consumption and production is a sustainable development goal of the United Nations 2030 Agenda that offers a wide-ranging approach to dealing with the issues of resource sustainability (United Nations, 2015). Nevertheless, the achievement of these objectives is still lacking, and current trends show that the world is not moving in the right direction to achieve Sustainable Development Goals by 2030.

The current research paper critically looks at the policy frameworks that are used to control the natural resource management processes at global, regional, and national levels. It compares the success of the existing strategies in the attainment of the sustainable development targets and finds gaps, challenges, and possibilities to improve them. The paper relies on information provided by other authoritative organizations, such as the United Nations Environment Program, Food and Agriculture Organization, International Renewable Energy Agency, and scholarly peer-reviewed information to present evidence-based policy suggestions.

1.1 Research Objectives

The main research questions to be addressed are: (1) to examine the present global trends in the extraction and consumption pattern of natural resources, (2) to assess the effectiveness of the current policy frameworks in encouraging sustainable resource management, (3) to determine the inequality in access and impact on different income groups and regions, (4) to examine successful case studies of sustainable resource management implementation and (5)

to examine comprehensive policy recommendations aimed at promoting sustainable natural resource management in line with the 2030 Agenda.

1.2 Significance of the Study

The present research is a contribution to the expanding literature on sustainable development as it presents a thorough and statistically driven discussion of the policy frameworks of natural resource management. It provides critical information to policymakers, researchers, and practitioners who are geared towards sustainable resource governance. The immediate need to tackle the issues of resource sustainability cannot be overestimated since the timeframe within which it is possible to take any action is becoming shorter every year. This is necessary in order to ensure a livable planet for both current and future generations, as well as understanding the success of current policies and the way forward.

2. LITERATURE REVIEW

2.1 Theoretical Foundations of Natural Resource Management

The idea of natural resource management has undergone a lot of development since the 1972 Stockholm declaration on the human environment, whose primacy set the principles of conserving the environment. Principle 2 of the Declaration focused on the fact that all-natural resources, such as air, water, land, flora, and fauna, should be conserved in the interest of the current and future generations through proper planning and management (International Institute for Sustainable Development [IISD], 2024). This rule of intergenerational fairness is still prominent in the current discourse of sustainability.

Sustainable development is a conception that was popularized by the Brundtland Commission in 1987, and it describes development that will not affect the capacity of future generations to fulfill their needs without jeopardizing the ability of the current generation to fulfill theirs. This definition has had significant impacts on the natural resource management policies in the global community and the focus on the interrelations of economic development, social equity, and environmental protection. Recent academic efforts have also narrowed these ideas down to create regenerative systems models by incorporating the ecosystem resilience framework alongside intergenerational wellbeing (Sustainability Science, 2024).

2.2 Global Resource Consumption Trends

Modern studies indicate that there are serious consumption patterns of resources in the world. The analysis prepared by the International Resource Panel reveals an average annual growth of material consumption at an average rate of more than 2.3, and the growth is facilitated mainly by the expansion of infrastructure and consumption among the upper-middle and high-income nations (UNEP & IRP, 2024). This trend of growth has a high level of regional inequalities, as rich countries are using six times the materials per household as the poor countries and ten times the climate impacts.

The sectoral pattern of resource demand shows that the built environment and the mobility sectors are the top resources of global material demand, with the food and energy sectors being closely behind. All four industries contribute to about 90 percent of the world's material consumption (Resource Panel, 2024). These consumption patterns are very important in understanding how an effective intervention strategy and policy framework should be designed.

2.3 Water Resources and Scarcity Challenges

Water scarcity is one of the most urgent issues in terms of natural resource management in the world. UN-Water (2024) states that in 2021, 720 million residents of countries with a high and critical amount of water stress lived, which is 10 percent of the world population. According to the Food and Agriculture Organization (FAO, 2020), 3.2 billion individuals live in agricultural regions experiencing high-to-very-high water shortages or scarcity, as well as 1.2 billion individuals live in agricultural regions with severely high-level water constraints.

Water stress is even anticipated to become more dramatic in its severity. It is estimated that three in every four individuals around the globe might be affected by drought by the year 2050, and the current cost of drought already amounts to more than 307 billion dollars every year (United Nations University Institute for Water, Environment and Health [UNU-INWEH], 2024). The total water withdrawal in agriculture accounts for 72 percent of all water withdrawals in the world, relative to 16 percent using water in municipal and 12 percent for industrial purposes (UN-Water, 2021), which indicates the high significance of water management in food security.

2.4 Forest Resources and Biodiversity Conservation

Forest ecosystems are important in regulating climate, the preservation of biodiversity, and well as human livelihood.

Image 2: Forest Conservation

Nevertheless, due to the alarming rates of deforestation and forest degradation, international conservation efforts are still not able to be effective. FAO Forest Resources Assessment indicates that there are 4.06 billion hectares of forest cover, which means 31 per cent of the total earth surface, but the territory is shrinking, especially in tropical areas (FAO, 2021).

In 2015, human-induced forest fires that afflicted about 98 million hectares around the world caused harm of about 4% to tropical forests. It has been found that 29-37% of all loss of forests in the world in 2003-2018 was caused by fire, and the trends toward the increase and more and more severe fires are observed all over the world (FAO, 2021). The effects of loss of forests are not limited to carbon emissions to biodiversity loss, ecosystem services disruption, and risks of emerging infectious diseases.

2.5 International Policy Frameworks and Agreements.

Global natural resource management is based on international treaties and agreements. CBD focuses on sustainable development via the conservation of biological diversity, where environmental health is balanced with human development requirements. The issue of land degradation and sustainable land management is addressed in the United Nations Convention to Combat Desertification (UNCCD). More than 200 countries are bound together in an interconnected system of international environmental governance by these frameworks, the Paris Agreement on climate change, and the 2030 Agenda for Sustainable Development (World Jurisprudence, 2024).

3. METHODOLOGY

This study utilizes a mixed research design that involves the quantitative analysis of data and qualitative analysis of policy. The paper uses secondary sources in the form of official international entities such as the United Nations Environment Programme, the Food and Agriculture Organization, the International Renewable Energy Agency, UN-Water, and the International Resource Panel. The sources of the data were chosen on the basis of scientific rigor, international reputation, and a broad overview of the indicators of natural resource management.

3.1 Data Collection and Sources

The most relevant sources of primary data are the Global Resources Outlook 2024, published by UNEP and the International Resource Panel, which offers the analysis of the patterns of resource extraction, environmental effects, and the policy options in general. The Progress Reports of UN-Water and the State of the World Land and Water Resources publications of FAO have provided the data on water-related statistics. The data on renewable energy was obtained in accordance with the reports of IRENA published as Renewable Capacity Statistics and Energy Statistics. The sources are the most authoritative and up-to-date sources of information concerning the global management of natural resources.

3.2 Analytical Framework

The analytical framework studies the management of natural resources based on various aspects: patterns of resource extraction and consumption; environmental effects as greenhouse gas emissions and loss of biodiversity; policy performance at the global, regional, and national levels; and distributional equity across income groups and geographical regions. Such a multidimensional strategy allows evaluating the existing issues holistically and finding a way to enter a new direction to sustainable management of resources.

3.3 Limitations

The limitations of this study are that it uses aggregated data of the whole world and regions over time, which can obscure local differences and local-specific issues. Moreover, the policy development life cycle is very dynamic; thus, some of the policy developments that might have occurred post-data collection may not be fully reflected. In spite of these shortcomings, the study results are solid and sound since they use sources of authoritative international data.

4. RESULTS AND ANALYSIS

4.1 Trends of resource extraction all over the world.

The evaluation of the world material mining data indicates that the world material consumption has increased exponentially in the last fifty years. The table below illustrates the most important statistics in the resource extraction trends and projections.

Table 1: Global Natural Resource Extraction Trends (1970-2060)

Year	Resource Extraction (Billion Tonnes)	Per Capita Consumption (kg/day)
1970	30	23
2020	106	39
2060 (Projected)	170	~52

Source: UNEP & International Resource Panel (2024). Global Resources Outlook 2024.

The statistics prove that there is a triple growth in resource extraction over the period of 50 years, and the per capita consumption growth is 70 percent. Unchecked, it is projected that the number will rise by 60 percent by 2060 over the present 2020 levels, which is unsustainable and would be well beyond the capacity of the planet.

4.2 Environmental Impact Assessment

The side effects of the extraction and processing of the resources have a significant impact on the environment and are complex. The table below presents an overview of environmental impact indicators.

Table 2: Environmental Impacts of Resource Extraction and Processing

Impact Category	Percentage Contribution
Total Greenhouse Gas Emissions	Over 60%
Health-related Air Pollution Impacts	40%
Land-related Biodiversity Loss (Biomass)	90%
GHG Emissions from Biomass Processing	33%
GHG Emissions from Fossil Fuels & Minerals	35%

Source: UNEP (2024); Resource Panel (2024).

4.3 Water Scarcity Analysis

Water scarcity is a pressing issue because it impacts billions of individuals all over the world, and most importantly, agricultural production and food security are severely impacted.

Image 3: Water Scarcity Crisis

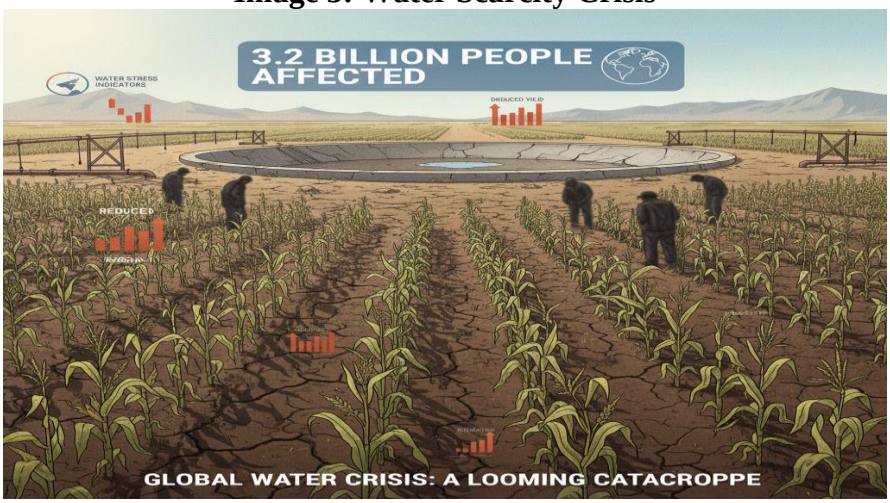


Table 3: Global Water Scarcity Indicators

Indicator	Value/Population Affected
People in high/critical water stress (2021)	720 million (10% global population)
People in water-stressed agricultural areas	3.2 billion people
People in severely constrained agricultural areas	1.2 billion people
Children in high/extreme water vulnerability	450 million children
Annual drought costs (current)	$307 billion+

Projected drought-affected population (2050)	3 out of 4 people globally
Agricultural water withdrawal percentage	72% of total withdrawals

Sources: UN-Water (2024); FAO (2020); UNU-INWEH (2024); UNICEF (2021).

4.4 Resource Consumption Disparities

The existing trends in the consumption of resources across the globe indicate that the income groups are heavily uneven, with the richer nations taking dissimilar proportions of the natural resources and yet causing immeasurably greater effects upon the environment.

Image 4: Resource Consumption Disparities

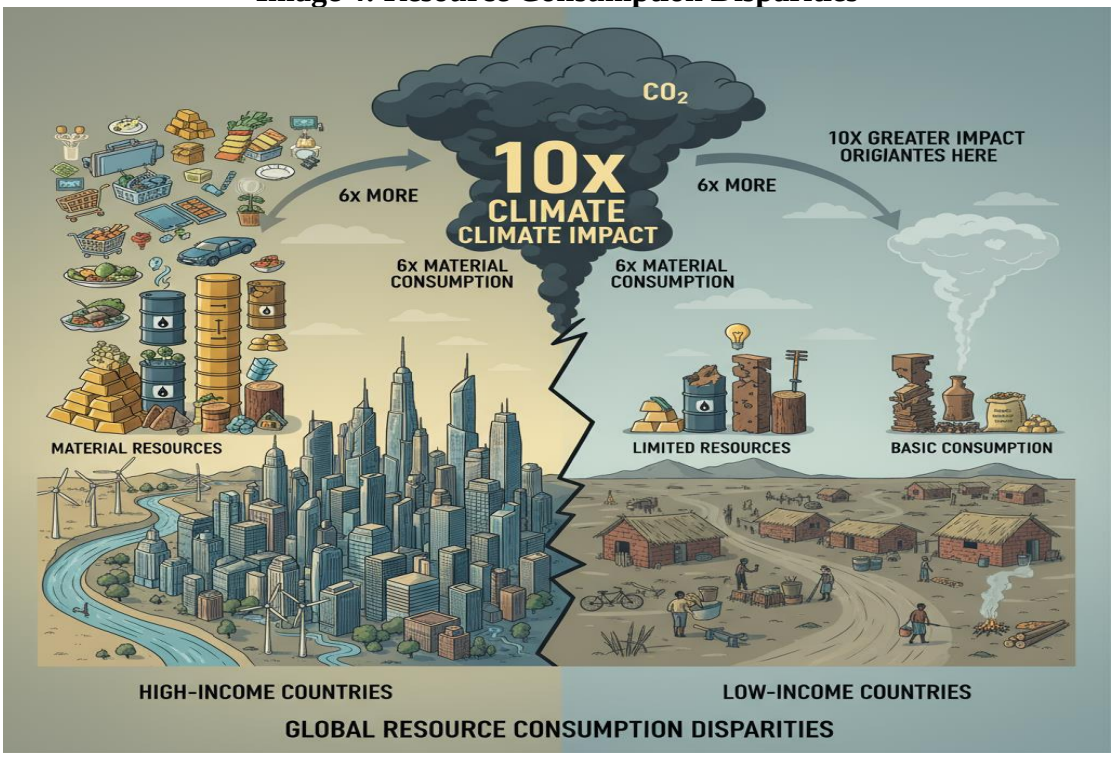


Table 4: Resource Consumption Disparities by Income Group

Metric	High-Income Countries	Low-Income Countries
Material Consumption (relative)	6x higher	Baseline
Climate Impacts (relative)	10x higher	Baseline
Resource Use Growth (50 years)	Doubled+	Limited growth

Source: UNEP (2024); Resource Panel (2024).

4.5 Renewable Energy Transition Progress

The transition to renewable energy represents a critical component of sustainable natural resource management. Recent data from the International Renewable Energy Agency demonstrates significant progress, though current rates remain insufficient to meet climate targets.

Image 5: Renewable Energy Transition

Table 5: Global Renewable Energy Capacity Indicators

Indicator	Value/Status (2024)
Renewable capacity additions (2024)	585 GW
Renewable stock growth rate	15.1%
Share of global power additions	92.5%
Renewable share of global installed capacity	46%
Required annual additions to meet the 2030 target	1,120 GW per year
Projected PV waste (2030)	4 million tonnes

Source: IRENA (2025); IRENA Renewable Capacity Statistics 2025.

5. DISCUSSION

5.1 Critical Analysis of Current Policy Frameworks

It is shown that the world is still off-track towards sustainable natural resource management, even taking into consideration the full-scale international policy frameworks such as the 2030 Agenda of Sustainable Development and the Paris Agreement. By 2024, 530 policies pertaining to sustainable production and consumption have been presented in 71 countries, with only a 6 percent growth over 2023 (United Nations, 2024). This small percentage of policy uptake is a contrast to the rate of change in resource consumption and environmental degradation, which is growing exponentially.

The disconnection between the promises and the results of policy implementation is based on a few factors. To begin with, national policies on most issues have no proper enforcement mechanisms or binding targets. Second, the economic incentives in most cases prefer short-term exploitation of resources rather than sustainability. Third, lack of financial and technical assistance hampers the ability of the developing countries to adopt sustainable resource

management practices. Fourth, the lack of full governance systems cutting across sectors and scales is a limitation to the effectiveness of policies.

5.2 Dimensions of Equity and Justice

Such dramatic differences in the level of resource use and the ecological effects of high-income and low-income nations give rise to such essential questions as equity and environmental justice. The consumption level of high-income nations is six times higher, and climate impacts are ten times higher (UNEP, 2024). Such unfair allocation carries on historical trends of resource overuse and environmental dumping on disadvantaged people.

Environmental justice as a concept requires that policy systems should deal with these disparities with mechanisms that focus on equal access to resources, equal or fair distribution of environmental benefits and burdens, as well as meaningful involvement of the marginalized groups in decision-making processes. The common but differentiated responsibilities principle, which is enshrined in the international environmental agreements, acknowledges that developed countries are more responsible for solving environmental problems, considering that they have contributed largely to the depletion of resources and degradation of the environment in the past.

5.3 Circular Economy as a Transformative Approach

The circular economy model provides an exciting platform through which economic growth can be decoupled from the use of resources. The potential of waste reduction, resource efficiency, and sustainable economic development can be proven by successful implementations in such countries as Sweden. The circular economy projects in Sweden have managed to cut down waste in the landfills and generate new business and jobs (Upcycle Luxe, 2024).

Image 6: Circular Economy Model

Nevertheless, the implementation of the principles of a circular economy worldwide must consider the eradication of systemic barriers, such as inadequate waste management and

recycling infrastructure, consumer knowledge, and behavior change, unified principles of circular design, and policy incentives of the circular business models. The waste output of the renewable energy industry, whose solar PV waste is expected to rise to 4 million tonnes per year in 2030 compared with 0.2 million tonnes in 2021, highlights the immediate need to introduce solutions of a circular economy in all industries (IRENA, 2024).

5.4 Sustainability of Water and Agriculture.

The food security and well-being of people are threatened with extinctions by the water scarcity crisis. Among other things, water security is an urgent policymaking priority because, as of 2020, there are 3.2 billion residents of agricultural zones affected by water scarcity, and 3 out of 4 people may experience the impact of drought by 2050 (FAO, 2020; UNU-INWEH, 2024). The agricultural water withdrawal comprises 72 percent of the total world water withdrawals, indicating that there is a significant requirement to enhance irrigation performance and environmental agriculture.

Effective water management practices involve a combination of technological solutions, changes in policy, and behavioral modification. These are accurate irrigation technologies, water pricing systems that will reflect the real scarcity value, watershed-oriented management systems, and climate-resilient agro systems. The reports of the State of the World's Land and Water Resources conducted by the FAO highlight the fact that technical responses are not enough and that there must be inclusive systems of governance that facilitate equal access to water and participation of stakeholders in governance.

5.5 Transition and Implications of Renewable Energy Resources and Implications.

Sustainable resource management is both an opportunity and a challenge under the renewable energy transition. Although the renewable capacity additions in 2024 have hit a record of 585 GW, which is 92.5 percent of the total global power additions, the growth rates are still not high enough to meet the COP 28 aspiration of tripling the global renewable capacity by 2030 (IRENA, 2025). To achieve this target, the additions should go beyond 1,120 GW per year throughout the decade.

Another question that the transition to renewable energy should also pose is the resource needs to produce solar panels, wind turbines, and battery storage devices. There are critical minerals such as lithium, cobalt, and rare earth elements, which suffer limitations in supply and issues concerning their mining in terms of environmental concerns. These layers should be met by developing circular economy strategies of renewable energy technologies, diversification of supply chains, and recycling infrastructure.

6. POLICY RECOMMENDATIONS

Through the examination of the current trends, gaps in the policies, and good example case studies, this section outlines detailed recommendations that can be made to improve the natural resource management structures.

6.1. Enhancing International Governance Institutions

The international cooperation should be reinforced by providing better coordination among multilateral environmental agreements, binding targets with effective monitoring and enforcement frameworks, providing new financial and technical assistance to developing nations, and incorporating natural resource concerns into trade and financial policies. The whole process of the distribution of resources and responsibilities among the nations must be guided by the principle of common but differentiated responsibilities.

6.2. Accelerating the Adoption of the Circular Economy

Governments must adopt extensive circular economy policies, such as using compulsory product design criteria of durability and recyclability, producer responsibility, recycling infrastructure and technology, consumer education policies, and financial incentives for the

use of circular business models. The policy frameworks need to cover the product lifecycle that ranges from design to end-of-life management.

6.3 Improving the Water Resource Management

To handle water scarcity, it is necessary to employ integrated water resources management strategies such as enhancing irrigation efficiency using precision agriculture and drip irrigation systems, water pricing reforms with a value of scarcity but not neglecting vulnerable populations, water storage and distribution infrastructure investments, watershed-based management strategies, and climate adaptation strategies. Both technological interventions and nature as solutions, such as the restoration of wetlands as well as green infrastructure, should be considered the priority.

6.4.1 Sustainable Consumption Patterns

In high-income countries, it is necessary to reduce the level of material consumption to be able to attain global sustainability. Interventions in policy should involve progressive consumption tax on the products that are resource-intensive, government awareness campaigns to engage in sustainable lifestyles, sustainable procurement policy of government institutions, planned obsolescence restrictions, and endorsement of the sharing economy models. These steps must be introduced slowly so that social acceptance is achieved, and the economic disruption is reduced.

6.5 Moving toward Renewable Energy Implementation

To speed up the implementation of renewable energy, it is necessary to lift regulatory restrictions on the development of renewable energy, financial incentives, such as feed-in tariffs and tax credits, investment in grid infrastructure and energy storage, research and development of emerging technologies, and a circular economy approach to renewable energy equipment. Technology transfer and capacity building in the developing nations should be enabled through international cooperation.

6.6 Providing Inclusive Governance

This demands proper involvement of all stakeholders, especially the marginalized communities, to have good resource governance. The policies must be used to note the rights and the traditional knowledge of the indigenous people, gender sensitive approaches in resource management, clarity in the decision-making process, access to justice and grievance systems, and capacity building to help in the engagement of the civil society. The systems of inclusive governance must tackle cases of inequality of power and the distribution of benefits equally.

7. CONCLUSION

This critical look through the strategies and policy frameworks of managing natural resources shows a key point of Junction between the human race and the limited resources available on the earth. The figures clearly show that the current consumption report is unsustainable, and the extraction of resources has already tripled in the last 50 years and is projected to rise by 60 percent by the year 2060 unless there is immediate action taken. The impact on the environment is extreme, and the extraction and treatment of resources take up more than 60 percent of the greenhouse emissions, 90 percent of the biodiversity, and have numerous health implications on billions of individuals worldwide.

The discussion shows that there is a deep unfairness in the allocation of resources and the spreading of environmental impact. The high-income countries use six hundred percent more resources per capita and produce one hundred percent more climate effects than the low-income countries. Such inequalities are the historical trends of resource overexploitation, and the extreme necessity of a policy based on the principles of environmental justice and common and differentiated responsibilities.

One of the most urgent issues of resources becomes water scarcity, which now affects 3.2 billion people in agricultural regions, according to projections, every three out of every four may experience drought effects by 2050. The renewable energy transition, although with positive trends with record capacity additions in 2024, is still not a sufficient move to achieve the international climate goals without a rapid implementation process and a circular economy to deal with the increasing waste streams.

Current policy frameworks, such as the 2030 Agenda of Sustainable Development and multilateral environmental agreements, offer some valuable pillars towards sustainable management of resources. Nevertheless, their effectiveness is constrained by implementation gaps, low enforcement mechanisms, a lack of adequate financing, and the coordination of sectors and levels of governance. The 6 percent sustainable consumption and production policy rise per year is a small figure compared to the increasing rate of consumption of resources and environmental degradation.

The way ahead needs coordinated multidimensional action. It is necessary to enhance mechanisms of world governance by applying binding targets and effective enforcement. By speeding up the pace of the adoption of the circular economy, it will decouple economic growth and consumption of resources and generate jobs. Water scarcity can be overcome through integrated water resource management techniques that combine technological innovation and participatory governance. By encouraging sustainable consumption practices in developed nations, the world can reduce its demand for resources by about 30 percent and thus help the developing nations to develop.

Renewable energy transition should be brought in at a much faster rate, and capacity additions should measure to over 1,120 GW each year to achieve the 2030 goal. This shift should be supported by circular economy strategies to deal with the resource needs of renewable energy technologies and vulnerabilities of the supply chain of resource-heavy minerals.

Such inclusive systems of governance that guarantee authentic participation of isolated communities, especially indigenous groups and women, are essential in effective and fair resource management. All policy interventions should include the recognition of the traditional knowledge, gender responsiveness, and transparency in the decision-making process.

The scientific facts are obvious and striking: the time to act to have a habitable planet is short. Whether change is needed is no longer a question of interest; the more pressing question is how to effect it as quickly and, on the magnitude, needed. This requires political goodwill, investment of funds, technological advancements, and a change of behavior on unprecedented levels. Any lack of decisive action will cause an apocalypse in environmental degradation, economic, and human suffering on a large scale.

To achieve success, it is necessary to redesign our economic systems, production processes, and consumption patterns to be able to live within the planetary boundaries and provide social equity and human well-being. The shift to sustainable natural resource management is not just an environmental necessity but a moral necessity for the present and future generations. Through the concerted international effort, with enlightenment by science and with the principles of justice and fairness, the goal of sustainable management of natural resources can still be attained. The decision before humanity is now either to proceed on the present unsustainable path toward an ecological disaster, or to pursue transformational change to a sustainable and equitable future.

The study is relevant to the realization of complex challenges and opportunities in the natural resource management policy. It offers evidence-driven suggestions to policymakers, practitioners, and researchers in the direction of attaining sustainable development. Further

studies are required to focus on particular sectoral measures, the study of the policy implementation issues in a variety of settings, and the elaboration of innovative governance systems to speed up the process of transforming to the sustainable management of resources.

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