

JUDICIARY'S ROLE IN ENVIRONMENTAL PROTECTION: A SOCIO-ECONOMIC PERSPECTIVE ON LAND DEGRADATION, DESERTIFICATION AND DROUGHT RESILIENCE

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ABSTRACT

Land restoration and drought resilience are vital components of environmental sustainability, especially in climate change and land degradation. These efforts have significant implications for ecosystems, biodiversity, human well-being, and economic prosperity. The economic aspect involves evaluating the financial implications of restoration projects and resilience measures, balancing the upfront costs with long-term benefits such as increased agricultural productivity, improved water availability, reduced disaster risk, and enhanced ecosystem services. Economic incentives, including subsidies, grants, tax incentives, carbon credits, and payments for ecosystem services, play a crucial role in promoting sustainable practices. The judicial approach emphasizes the judiciary's role in interpreting and enforcing environmental laws, ensuring compliance, and holding entities accountable for actions contributing to land degradation and inadequate drought response. Judicial interventions, such as public interest litigation, protect community and indigenous rights, oversee restoration project implementation, and ensure transparency and accountability. Integrating economic considerations with legal frameworks and judicial oversight enables the development of comprehensive strategies to address environmental challenges, promote sustainable development, and safeguard the rights of present and future generations.

Keywords: Land Restoration, Drought Resilience, Economic Incentives, Judicial Approach, Climate Change.

INTRODUCTION

“A nation that destroys its soil, destroys itself. Forests are the lungs of our land, purifying the air and giving fresh strength to our people.”

-Franklin D Roosevelt

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Land¹ restoration and drought resilience are essential components of environmental sustainability, particularly in the face of increasing environmental challenges such as climate change and land degradation. These issues have far-reaching implications not only for ecosystems and biodiversity but also for human well-being, livelihoods, and economic prosperity.

The economic aspect of land restoration and drought resilience involves assessing the financial implications of implementing restoration projects and resilience measures². This includes analyzing the upfront costs of such initiatives against the long-term benefits they bring. For example, while restoration projects may require significant investment in terms of resources, technology, and labour, they can yield substantial returns over time. These returns may include increased agricultural productivity, improved water availability, reduced risk of natural disasters, and enhanced ecosystem services such as carbon sequestration and biodiversity conservation. Additionally, investing in land restoration and drought resilience can lead to avoided costs, such as those associated with disaster recovery, healthcare expenses due to environmental degradation, and loss of agricultural output³.

Moreover, creating economic incentives is crucial for encouraging participation in land restoration and drought resilience efforts. Governments can provide financial support in the form of subsidies, grants, and tax incentives to incentivize individuals, communities, and businesses to adopt sustainable practices. Market-based mechanisms such as carbon credits and payments for ecosystem services can also generate revenue for landowners who contribute to environmental conservation and restoration⁴.

On the other hand, the judicial approach⁵ to land restoration and drought resilience involves the role of the judiciary in interpreting and enforcing environmental laws and regulations. Courts play a vital role in ensuring compliance with legal standards and holding governments,

¹ 'Essay on Land Restoration, Desertification, and Drought Resilience' <<https://www.selfstudymantra.com/2024/05/essay-on-land-restoration-desertification-and-drought-resilience.html>> accessed 11 July 2024

² Ayisi F, 'Land Restoration, Desertification, And Drought Resilience' <<https://m.peacefmonline.com/pages/comment/features/202406/504031.php>> accessed 11 July 2024

³ Kurian OC, 'Restoring Land, Building Resilience, and Protecting Public Health' <<https://mena-forum.com/restoring-land-building-resilience-protecting-public-health/>> accessed 11 July 2024

⁴ Zarza LF, 'World Environment Day 2024: Land Restoration and Resilience against Desertification and Drought' <<https://smartwatermagazine.com/news/smart-water-magazine/world-environment-day-2024-land-restoration-and-resilience-against>> accessed 11 July 2024

⁵ Schueneman T, 'Sustaining Our Planet: World Environment Day 2024 and Its Relevance to Environmental Challenges' <<https://globalwarmingisreal.com/2024/06/04/sustaining-our-planet-world-environment-day-2024-and-its-relevance-to-environmental-challenges/>> accessed 11 July 2024

corporations, and individuals accountable for actions contributing to land degradation and insufficient drought response. Judicial interventions, such as public interest litigation (PIL), can address issues related to environmental protection, land use, and water management, thereby compelling authorities to take necessary actions to mitigate environmental harm and restore degraded lands⁶.

Furthermore, the judiciary can protect the rights of communities and indigenous peoples to their traditional lands and resources, ensuring that restoration efforts are carried out to respect these rights. Courts can also establish oversight mechanisms to monitor the implementation of restoration projects and ensure transparency and accountability in environmental governance.

Our planet is facing a climate crisis, as highlighted in the 2020 Emissions Gap Report by the United Nations Environment Programme⁷. Despite a temporary decrease in carbon dioxide emissions due to the COVID-19 pandemic, the world is still on track for a 3°C temperature increase this century, far exceeding the goals set by the Paris Agreement⁸. This trajectory would lead to severe consequences for both people and the environment. However, there is reason for optimism. Many governments are now committing to achieving net-zero emissions by around the middle of the century. Businesses are also stepping up efforts to transition their operations in line with the Paris Agreement's objectives. Additionally, children and youth are actively advocating for climate action, contributing to a global environmental rights movement. Moreover, judiciaries worldwide are increasingly playing a crucial role in addressing climate change, as evidenced by the findings of this report.

In essence, the economic aspect and judicial approach to land restoration and drought resilience are interconnected and complementary. By integrating economic considerations with legal frameworks and judicial oversight, comprehensive strategies can be developed to address environmental challenges effectively while promoting sustainable development and safeguarding the rights of present and future generations.

⁶ Admin B, 'World Environment Day '24: Land Restoration & Sustainability'

<<https://sustainabilitymag.com/articles/world-environment-day-24-land-restoration-sustainability>> accessed 12 July 2024

⁷ Kaminski I, 'Fighting for the Rights of Future Generations'

<<https://newhumanist.org.uk/articles/6073/fighting-for-the-rights-of-future-generations>> accessed 12 July 2024

⁸ 'Climate Action' (*Global Communities*, 26 April 2022) <<https://globalcommunities.org/our-work/sustainable-development/resilience/climate-action/>> accessed 12 July 2024

ROLE OF JUDICIARY

Nearly 30 per cent of India's landscape is suffering from degradation or desertification⁹. Successive surveys on land degradation in India show that, despite numerous announcements and policy changes, the problem of desertification and land and forest degradation continues to worsen. This issue poses significant threats to the environment, biodiversity, local economies, and food security. Both globally and nationally, India has been proactive in addressing this challenge. Internationally, India has committed to restoring its extensive landscape through initiatives such as the Nationally Determined Contributions (NDC) under the UNFCCC¹⁰, the Convention on Biodiversity Targets (CBT), the Land Degradation Neutrality (LDN) targets under the UNCCD¹¹, and the Bonn Challenge led by the IUCN¹².

The climate ambitions of countries worldwide are still insufficient to tackle the challenge of climate change effectively. Consequently, individuals, communities, non-governmental organizations (NGOs), businesses, and local governments have increasingly turned to the courts for relief. They seek to enforce existing climate laws, integrate climate action into current environmental, energy, and natural resources laws, define fundamental climate rights and obligations more clearly, and obtain compensation for climate-related damages¹³. As these legal actions become more common and numerous, they contribute to a growing body of legal precedent, gradually shaping a more coherent field of climate law.

Addressing land degradation and promoting restoration on a national scale is crucial for India due to its significant impact on the economy and the well-being of millions. ¹⁴India, with over 1.3 billion people, accounts for 18% of the global population but occupies only 2.4% of the world's land area (Space Application Centre, 2021). The country also supports 18% of the global livestock population. Out of India's total land area of 328.72 million hectares (MHA),

⁹ Tripathi B, 'As India Hosts Global Desertification Meet, a Third of Its Land in Crisis' (*Indiaspend*, 2 September 2019) <<https://www.indiaspend.com/as-india-hosts-global-desertification-meet-a-third-of-its-land-in-crisis/>> accessed 12 July 2024

¹⁰ United Nations Framework Convention on Climate Change

¹¹ United Nations Convention to Combat Desertification

¹² Author, "Strategies for Mitigating the Impacts of Drought: Building Resilience and Water Conservation" (*Diverse Daily*, 16 May 2024) <<https://diversedaily.com/strategies-for-mitigating-the-impacts-of-drought-building-resilience-and-water-conservation/>> accessed 13 July 2024

¹³ Bahena V, 'Drought, Displacement, Debt' (*TouristSecrets*, 27 December 2023)

<<https://www.touristsecrets.com/travel-tips/drought-displacement-debt/>> accessed 13 July 2024

¹⁴ Singh J (*Regeneration of degraded land in India*, 2020) <<https://www.rgics.org/wp-content/uploads/Land-Regeneration.pdf>> accessed 13 July 2024

around 228.3 mha are classified as arid, semi-arid, and dry sub-humid regions, and 83.69 mha of this land is affected by desertification.

Agriculture is a cornerstone of India's economy, employing 54.6% of the nation's workforce in farming and related activities. According to the Ministry of Agriculture and Farmers Welfare (2021), the net sown area in India is 139.42 MHA. Of this, 68.65 MHA (49.24%) is irrigated, while the remaining 70.77 MHA (50.76%) relies on rainfall. Rainfed areas often face resource shortages, land degradation, and unpredictable weather, leading to low productivity.

In the case of *M.C. Mehta v. Union of India*¹⁵, the Supreme Court ruled that life, public health, and the environment take precedence over issues like unemployment and revenue loss. The concept of 'sustainable development,' as defined by the Brandt Commission¹⁶ over 30 years ago, remains relevant today. This concept refers to development that meets current needs without hindering future generations from meeting their own needs. Similarly, in the *Narmada Bachao Andolan v. Union of India and Others*¹⁷ case, the Court stated that sustainable development involves the level and type of development that nature and ecology can support, with or without mitigation measures. The current standard requires that the risk of environmental or health harm be assessed in the public interest, using a "reasonable person's" perspective.

The judiciary in India plays a pivotal role in fostering drought resilience through the interpretation and enforcement of laws related to water management, land use, and environmental protection. By ensuring compliance with these laws, courts help mitigate the impacts of drought, promote sustainable resource management, and protect vulnerable communities. The judiciary's interventions are crucial in maintaining water security and ecological balance, which are essential for drought resilience.

One of the primary functions of the judiciary in drought resilience is the enforcement of water management laws. For instance, in the landmark case of *Re M.C. Mehta*, the Supreme Court directed the implementation of measures to clean the Yamuna River and improve its water quality. This case emphasized the need for effective water management practices to ensure sustainable water resources. By adjudicating disputes over water rights and ensuring

¹⁵ *MC Mehta v Union of India & Ors* [2004] Indian Kanoon (Supreme Court of India)

¹⁶ Development that meets the needs of the present without compromising the ability of future generations to meet their own needs.

¹⁷ *Narmada Bachao Andolan vs Union of India And Others* [2000] Indian Kanoon (Supreme Court of India)

equitable distribution, the judiciary plays a crucial role in maintaining water availability during droughts. The court's directives to regulate groundwater extraction and promote water conservation measures help mitigate the adverse effects of drought.

Environmental protection is another critical area where the judiciary's role is significant. In the *S. Jagannath vs. Union of India*¹⁸ case, the Supreme Court ordered the closure of shrimp farms that were degrading coastal environments, highlighting the need to protect ecosystems that support water retention and quality. Wetlands, forests, and other ecosystems play a vital role in enhancing resilience to drought. By enforcing laws aimed at protecting these natural habitats, the judiciary ensures the sustainability of water resources and helps maintain the ecological balance necessary for drought resilience.

The judiciary also addresses land use and agricultural practices, which are crucial for drought resilience. In the *Vellore Citizens Welfare Forum vs. Union of India*¹⁹ case, the Supreme Court introduced the "precautionary principle" and "polluter pays principle," mandating that industries take proactive measures to prevent environmental degradation. This case underscored the importance of sustainable agricultural practices and land use policies. Courts ensure compliance with zoning regulations and promote practices that conserve water and soil, thereby enhancing the resilience of agricultural communities to drought.

Protecting vulnerable communities is another essential aspect of the judiciary's role in drought resilience. In the *Re. Narmada Bachao Andolan* case, the Supreme Court addressed the rights and rehabilitation of communities displaced by the Sardar Sarovar Dam project. The court's intervention ensured that marginalized populations affected by water projects were provided with adequate compensation and rehabilitation, emphasizing the need to protect the rights of vulnerable communities during drought conditions.

The judiciary's ability to issue directives and orders further supports drought resilience. For example, the National Green Tribunal (NGT) has been proactive in issuing orders to protect water bodies, regulate sand mining, and promote rainwater harvesting. These orders are vital for implementing restoration projects and developing infrastructure to mitigate drought impacts. The NGT's interventions highlight the judiciary's role in promoting effective and sustainable resource management practices.

¹⁸ *S Jagannath vs Union of India & Ors* [1996] Indian Kanoon (Supreme Court of India)

¹⁹ *Vellore Citizens Welfare Forum vs Union Of India & Ors* [1996] Indian Kanoon (Supreme Court of India)

The judiciary in India plays a multifaceted role in fostering drought resilience by enforcing water management laws, protecting environmental resources, regulating land use and agricultural practices, and safeguarding vulnerable communities. Through landmark cases and proactive interventions, the judiciary ensures sustainable practices that enhance resilience to drought, maintain ecological balance, and promote social equity. These judicial actions are crucial for building a resilient society capable of withstanding the challenges posed by drought.

A SOCIO-ECONOMIC PERSPECTIVE

Desertification,²⁰ land degradation and drought (DLDD) have significant socio-economic impacts in India, a diverse ecosystem with a large rural population dependent on natural resources.²¹ Dichloro-diphenyl-trichloroethane (DDT) can reduce agricultural productivity, affect farmers' livelihoods, and increase food prices. The economic costs are not limited to agriculture but also affect other fields such as livestock and forestry. Biodiversity loss affects ecotourism, which is an important source of income for many communities²².

DDT can lead to food and water insecurity, increase poverty, and lead to forced migration. This leads to more cities, increased demand for resources, and increased social problems. Population health may suffer due to food shortages and increased exposure to dust and heat. To reduce these impacts, it is important to implement sustainable land management practices, promote water conservation, and diversify sources of income for rural communities²³. Reforestation and reforestation programs can help fight climate change by restoring degraded land and sequestering carbon. Policies should also focus on providing a social safety net for those vulnerable to the effects of DDT. Education and awareness programs are important to inform communities about the causes and consequences of DDT and the steps that can be taken to

²⁰ 'Desertification and Land Degradation: Evolution and Management' (*Land Degradation and Desertification: 1. 1. Introduction – Land use*) <<https://www.greenfacts.org/en/land-degradation-desertification/1-2/index.htm>> accessed 14 July 2024

²¹ Abdi OA, Glover EK and Luukkanen O, 'Causes and Impacts of Land Degradation and Desertification: Case Study of the Sudan' (*International Journal of Agriculture and Forestry*, 2013) <<http://article.sapub.org/10.5923.j.ijaf.20130302.03.html>> accessed 14 July 2024

²² 'Ecosystem Change' (3. *How have ecosystem changes affected human well-being and poverty alleviation?*) <<https://www.greenfacts.org/en/ecosystems/millennium-assessment-3/3-human-wellbeing-poverty.htm>> accessed 14 July 2024

²³ Vigil S, 'Addressing the Land Degradation-Migration Nexus: The Role of the United Nations Convention to Combat Desertification' (*SEI*, 23 October 2019) <<https://www.sei.org/publications/addressing-the-land-degradation-nexus-the-role-of-the-united-nations-convention-to-combat-desertification/>> accessed 14 July 2024

reduce its effects²⁴. This can empower communities to take ownership of their land and resources and make decisions that benefit their communities and the environment.

About 30% of India's land area has been affected by land degradation, resulting in a loss of 2.5% of India's Gross Domestic Product (GDP) in 2014 -15. The annual cost of land degradation will exceed the total cost of land recovery by 2030²⁵. Desertification affects rural communities by reducing productivity and livestock production. Drought and desertification can kill animals. People often move from rural areas due to these problems to cities or other rural areas.

Special Case Study²⁶: In the Bani grasslands of Gujarat, once known as the best in Asia, grass productivity has decreased significantly due to drought. The main reason is the invasion of trees (*Prosopis juliflora*). Economic evaluations suggest that the removal of *Prosopis* is a good policy to maintain the livestock economy and prevent pasture degradation. The cost per hectare due to land subsidence is INR²⁷ 27.6453. In short, addressing desertification, land degradation, and drought is critical to India's sustainable development, livelihoods, and economic well-being. Effective policies and social interventions are essential to mitigate these impacts and restore degraded land. In conclusion, DDT is a major challenge for India's socio-economic development. But with the right policies and actions, we can reduce impacts and ensure sustainability for all. This is a shared responsibility that requires the participation not only of governments and NGOs but also of the communities concerned. Together, we can turn the tide against DLDD and build a stronger and more sustainable India.

RECENT POLICY DEVELOPMENTS ADDRESSING DESERTIFICATION, LAND DEGRADATION, AND DROUGHT IN INDIA

India is working hard to address the challenges of desertification, land degradation, and drought through targeted interventions:

²⁴ Barman T, 'Biodiversity and Climate Change: India: Term Paper: Geography' (*Geography Notes*, 8 June 2017) <<https://www.geographynotes.com/term-paper/biodiversity/biodiversity-and-climate-change-india-term-paper-geography/4557>> accessed 14 July 2024

²⁵ Desertification, Land Degradation and Drought, and the Role of Geneva' (*Geneva Environment Network*, 30 May 2024) <<https://www.genevaenvironmentnetwork.org/resources/updates/desertification-land-degradation-and-drought-and-the-role-of-geneva/>> accessed 14 July 2024

²⁶ The Technical Support Team (TST), co-chaired by the Department of Economic and Social Affairs and the United Nations Development Programme

²⁷ Indian National Rupee

Integrated Approach

The Indian government has adopted an integrated approach to combat land degradation and desertification. This includes policies, programs, and international commitments aimed at environmental sustainability, food security, and social development.

The Delhi Declaration (2019)

India has taken the lead in bringing up the issue of poverty in international forums. The Delhi Declaration emphasized better access to and protection of land, and gender change initiatives. Land conservation and ecosystem management: India is focusing on improving forestry, sustainable land management, agriculture, and water conservation, especially in arid and semi-arid regions.

BIWAL²⁸ Project

The BIWAL project is to revive old tanks in the Bundelkhand region to increase water levels in wells, expand irrigated areas, and improve life.

WADI²⁹ Model

Sustainable agriculture as shown in the WADI Model offers solutions to combat desertification and land degradation. These projects will contribute to a sustainable and sustainable future. In short, India's policies and programs demonstrate its commitment to protecting the country's natural heritage, achieving climate neutrality and land degradation goals, and ensuring the well-being of citizens and ecosystems.

SUGGESTIONS

Addressing a Land Degradation Neutral World (LDNW) within the Sustainable Development Goals (SDG) framework offers substantial short-term benefits and is crucial for ensuring long-term food security, poverty elimination, and sustainable development³⁰.

²⁸ Bundelkhand Initiative for Water Agriculture and Livelihoods

²⁹ Wastelands Development in India

³⁰ 'Sustainable Land Management Practices and Their Benefits' (*Constructive Voices*, 8 January 2024)

<<https://constructive-voices.com/sustainable-land-management-practices-and-their-benefits/>> accessed 14 July 2024

Need For Scientific And Technical Basis

Progress towards LDNW requires updated scientific and technical knowledge.

Establish a global authority on land and soil knowledge, in collaboration with the Food and Agricultural Organisation (FAO), United Nations Environment Program (UNEP), and the Global Environment Facility³¹.

Develop a global database to measure and monitor impacts on productivity, environment, and populations at various levels.

Generate pilot projects in regions with (DLDD) hotspots.

Quantify impacts of Sustainable Land Management (SLM) and interventions on soil quality, water resources, affected populations, and land cover³².

Incorporating Traditional and Local Knowledge

Traditional practices in low and middle-income countries can aid in rebuilding ecological infrastructure and reversing land degradation³³.

Combine scientific information with indigenous knowledge for better decision-making.

Utilizing Advanced Technologies

High-resolution satellite images and meteorological data, alongside ground-based data, are essential for analyzing DLDD processes.

Strengthen policymakers' capacities to use Earth observation and in-situ data for monitoring and predicting land degradation and droughts³⁴.

³¹ Ziadat F and others, 'Participatory Land Resources Planning to Promote Sustainable Landscape Management in Rainfed Areas-Morocco' (*Frontiers*, 19 July 2022) <<https://www.frontiersin.org/journals/sustainable-food-systems/articles/10.3389/fsufs.2022.848043/full>> accessed 14 July 2024

³² Editor in chief: Silvia Richter s.richter@dlg.org, Erlewein A and Hecheltjen A, 'Land Degradation Neutrality – a New Impetus for Addressing the Degradation of Land and Soils' (*International Journal for Rural Development*, 27 March 2018) <<https://www.rural21.com/english/a-closer-look-at/detail/article/land-degradation-neutrality-a-new-impetus-for-addressing-the-degradation-of-land-and-soils.html>> accessed 15 July 2024

³³ United Nations Development Programme. 2017. Community Approaches to Sustainable Land Management and Agroecology Practices. UNDP, New York.

³⁴ Refer to Reference 33

Baseline Assessments and Monitoring

Despite current dataset limitations, baseline assessments and periodic monitoring using biophysical and socio-economic indicators are crucial.

Emerging mapping and spatial analysis tools are vital for measuring ecosystem status and trends and for policy-making.

National, sub-national, and local assessments will aid governments, corporations, and communities in forming effective policies and action plans³⁵.

Partnerships and Resource Mobilization for a Landscape-Based Multi-Sectoral Approach

Importance of Partnerships

Partnerships at all levels are necessary for achieving an LDNW.

Development banks and the Global Environment Facility (GEF) play a crucial role.

Increased resource allocation to the GEF land degradation focal area offers multiple benefits.

Inclusive partnerships involving governments, corporations, and communities are essential for leveraging resources and managing land sustainably.

Engagement of All Economic Sectors

All economic sectors benefit from nature and must engage in transitioning to a green economy within sustainable development and poverty eradication contexts.

Land regeneration should be the foundation of an integrated development strategy.

Common goals include food and water security, job creation, sustainable livelihoods, drought and disaster mitigation, and reducing poverty and socio-economic inequality³⁶.

³⁵ 'Fao.Org' (*Sustainable Land Management | Land & Water | Food and Agriculture Organization of the United Nations | Land & Water | Food and Agriculture Organization of the United Nations*) <<https://www.fao.org/land-water/land/sustainable-land-management/en/>> accessed 15 July 2024

³⁶ 'Wikifreedom - Your AI-Powered Encyclopedia of Unbounded Knowledge' (Wiki) <<https://freedom-gpt-wiki.vercel.app/wiki/sustainable-land-use>> accessed 15 July 2024

Other Innovative Suggestions³⁷

Encourage farming techniques that maintain soil health, such as crop rotation, agroforestry, and the use of organic fertilizers.

Develop efficient irrigation systems and promote rainwater harvesting to optimize water use in agriculture and daily life.

Invest in reforestation and afforestation projects to reclaim degraded areas and improve land productivity.

Empower local communities to take part in land management decisions and actions, ensuring their involvement and benefit.

Create and enforce policies that support sustainable land use and penalize practices that lead to degradation.

Provide subsidies and financial incentives for farmers and businesses that adopt sustainable practices.

Increase public understanding of the causes and impacts of desertification and land degradation through education and outreach programs.

Support research into new technologies and methods for preventing land degradation and managing drought.

Encourage the development of alternative income sources for rural communities to reduce pressure on land resources.

Collaborate with international organizations and other countries to share knowledge, resources, and strategies for combating desertification and drought.

³⁷ Insights G, 'Sustainable Land Management: Balancing Ecology with Human Needs' (*Gray Group International*, 12 April 2024) <<https://www.graygroupintl.com/blog/sustainable-land-management>> accessed 15 July 2024

The Judiciary Can Significantly Enhance Land Restoration, Combat Desertification, And Build Drought Resilience Through Various Actions³⁸

The judiciary can advocate for the review and updating of existing laws related to land use, water management, and environmental protection to address emerging challenges more effectively.

Courts can support the implementation and enforcement of laws that encourage sustainable agricultural practices, water conservation, and reforestation efforts.

Ensure fair and just allocation of water resources, particularly in drought-prone areas, by adjudicating disputes and promoting water-sharing agreements.

Resolve conflicts between different land use interests, such as agriculture, forestry, and urban development, ensuring that land restoration and conservation efforts are prioritized.

Issue orders to halt activities that contribute to land degradation, such as illegal mining, deforestation, and over-extraction of groundwater.

Mandate the restoration and rehabilitation of degraded lands through directives for reforestation, soil conservation, and the reclamation of abandoned mining sites.

Establish mechanisms to monitor compliance with judicial orders related to environmental protection and land restoration.

Impose stringent penalties on individuals and corporations that violate environmental laws, ensuring accountability and deterrence.

Uphold the rights of indigenous and marginalized communities to access and manage natural resources sustainably, ensuring their participation in decision-making processes.

Offer legal remedies and compensation to communities affected by land degradation and water scarcity, promoting social equity and resilience.

³⁸ 'Governance for a Land Degradation Neutral World' (*SDG Knowledge Hub*, 21 October 2023) <<https://sdg.iisd.org/commentary/guest-articles/governance-for-a-land-degradation-neutral-world/>> accessed 17 July 2024

Encourage and facilitate public interest litigation related to land degradation, desertification, and drought resilience to bring critical environmental issues to the forefront.

Engage in judicial activism to address environmental concerns proactively, ensuring swift and effective judicial responses to ecological crises.

Promote collaboration between judicial bodies, government agencies, NGOs, and international organizations to enhance the implementation of environmental laws and policies.

Support initiatives aimed at building the capacity of local governments and communities to implement sustainable land and water management practices.

CONCLUSION

The judiciary's involvement in environmental governance, particularly in fostering drought resilience and land restoration, is pivotal to addressing the multifaceted challenges posed by land degradation, desertification, and climate change. The proactive stance of judicial bodies, exemplified by the National Green Tribunal (NGT) in India, highlights the judiciary's essential role in promoting sustainable resource management practices. The NGT's directives to protect water bodies, regulate sand mining, and promote rainwater harvesting are critical for implementing restoration projects and developing infrastructure to mitigate drought impacts. These judicial actions underscore the judiciary's capacity to enforce water management laws, protect environmental resources, regulate land use and agricultural practices, and safeguard vulnerable communities.

Land degradation affects approximately 30% of India's land area, resulting in significant economic losses, including a 2.5% reduction in GDP in 2014-15. The annual cost of land degradation is projected to exceed the total cost of land recovery by 2030. Desertification and drought reduce agricultural productivity and livestock production, forcing rural populations to migrate to urban areas or other rural regions. Addressing these issues through targeted interventions is crucial for sustainable development and economic stability.

The economic aspect of land restoration and drought resilience involves assessing the financial implications of restoration projects and resilience measures. Although these initiatives require substantial upfront investments, they offer long-term benefits such as increased agricultural productivity, improved water availability, reduced natural disaster risks, and enhanced

ecosystem services, including carbon sequestration and biodiversity conservation. Moreover, these efforts can lead to avoided costs related to disaster recovery, healthcare expenses due to environmental degradation, and lost agricultural output. Economic incentives such as subsidies, grants, tax incentives, carbon credits, and payments for ecosystem services are essential to encourage participation in sustainable practices.

The judicial approach complements the economic aspect by ensuring compliance with environmental laws and holding entities accountable for actions contributing to land degradation and inadequate drought response. Public interest litigation (PIL) and other judicial interventions compel authorities to take necessary actions to mitigate environmental harm and restore degraded lands. Courts also play a crucial role in protecting the rights of communities and indigenous peoples, ensuring that restoration efforts respect these rights. Additionally, judicial oversight mechanisms can monitor the implementation of restoration projects, ensuring transparency and accountability in environmental governance.

The integration of economic considerations with legal frameworks and judicial oversight is vital for developing comprehensive strategies to address environmental challenges. By combining the judiciary's enforcement capabilities with economic incentives, sustainable development can be promoted while safeguarding the rights of present and future generations. This holistic approach is essential for building a resilient society capable of withstanding the impacts of drought, desertification, and climate change.

As highlighted in the 2020 Emissions Gap Report by the United Nations Environment Programme, the global community is facing a climate crisis, with a potential 3°C temperature increase this century. However, there is growing momentum for climate action, with many governments committing to net-zero emissions, businesses aligning with the Paris Agreement's objectives, and youth advocating for environmental rights. The judiciary's role in addressing climate change is increasingly recognized, providing a crucial foundation for environmental governance.

In conclusion, the judiciary's role in land restoration, desertification, and drought resilience is indispensable. The judiciary ensures that environmental challenges are addressed by enforcing laws, issuing directives, protecting vulnerable communities, and promoting sustainable practices. This judicial activism, combined with economic strategies, fosters a sustainable and resilient society, capable of thriving in the face of environmental adversity.

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