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Eradicating Modern Slavery and Promoting Equality in Environmental Management and Conservation

M. Ramya [1*], R. Muthukumaran [2], M. Nithya [3], Irudhayamary Premkumar [4], C. Catherene Julie Aarthy [5], K. Selvi [6]

[1*] Assistant Professor, Department of School of Management, Hindustan Institute of Technology and Science, Chennai, Tamil Nadu, India. E-mail: ramyam@hindustanuniv.ac.in

[2] Vice Dean & Head, School of Management, OP Jindal University, Chhattisgarh, Haryana, India. E-mail: muthufs25@gmail.com

[3] Vice Dean & HoD, Department of Civil Engineering, School of Engineering, O.P. Jindal University, Chhattisgarh, Haryana, India. E-mail: mnithya.me@gmail.com

[4] Assistant Professor, MEASI Institute of Management, Chennai, Tamil Nadu, India. E-mail: maryprem1996@gmail.com

[5] Senior Assistant Professor, Symbiosis Institute of Business Management Nagpur, Maharashtra, India. E-mail: catherenejisaac@gmail.com

[6] Associate Professor, Department of MBA, Saveetha Engineering College, Chennai, Tamil Nadu, India. E-mail: dr.selvisuresh@gmail.com

Abstract

Millions of people are trafficked all over the world currently, especially in environmental and natural resource management industries such as agriculture, mining, forestry, fishing, and waste management. Forced labour, human trafficking, low wages, and other forms of employment discrimination hinder efforts to achieve sustainable development and jeopardize conservation efforts globally. In this paper, a combined interdisciplinary analytical approach is applied to explore how modern slavery, eradication, equality promotion, and sustainable environmental governance are interlinked. It looks at how ethical employment practices, environmental approaches that include social justice, and monitoring systems that rely on technology can enhance social justice in conservation and environmental management. Qualitative and comparative research methodology has been used with secondary data obtained from international labour reports, sustainability studies, the environmental governance framework, and the human rights database. It shows that there are some 50 million people in the world who are living in conditions of modern slavery, many of whom are working in very environmentally-intensive industries. The results show that companies with clear information on their value chain, with women's participation in decision-making processes, with

*Corresponding Author: M. Ramya, E-mail: ramyam@hindustanuniv.ac.in

fair working conditions, and with policies that focus on the community and its conservation, show better results in terms of environmental sustainability performance and social welfare. Additionally, the adoption of computer-based auditing systems, blockchain traceability, and policy accountability systems greatly minimizes labour exploitation risks and improves environmental compliance. The researchers find that eradicating modern slavery and promoting equality are critical first steps towards longer-term environmental sustainability and effective conservation management. The suggested framework is based on the protection of human rights, on the principle of inclusive participation and sustainable management of resources, which are essential for the development of ethical environmental governance. The research presents some pragmatic policy recommendations to policymakers, environmental agencies, industries, and international organizations that aim to put in place socially responsible and environmentally resilient management systems.

Keywords:

Modern slavery, environmental management, sustainable conservation, equality promotion, human rights protection, ethical governance, sustainable development.

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Introduction

Modern slavery is one of the most pressing issues in the environmental management and conservation sectors, and one of the most serious challenges to global human rights and sustainability. Forced labour, debt bondage, human trafficking, child labour, discriminatory employment practices, and other practices are still present in sectors like agriculture, forestry, mining, fisheries, waste management, and resource extraction, where the vulnerable are often exposed to unsafe working conditions and economic inequality (Brown et al., 2021). Environmental degradation and climate-related pressures also exacerbate social vulnerabilities to risks of labor exploitation and inequitable access to environmental resources (Cameron et al., 2021). With global sustainability agendas growing in importance to the ethical governance and inclusive development, the connection between human rights protection and environmental conservation has become an important interdisciplinary field of research (Velliangiri, 2025; Khalikova et al., 2024).

Environmental management systems should encourage ecological balance, conservation of nature and biodiversity, and sustainable use of natural resources. Many conservation and environmental value chains are, however, linked to practices of exploitation, inequitable wage distribution, gender discrimination, and poor social protection mechanisms (Caruana et al., 2021). There are also no clear monitoring systems to detect exploitation and poor regulatory oversight of resource-based sectors, allowing exploitation to go unnoticed for a longer time. Further, the marginalized communities engaged in conservation activities enjoy less participation in environmental decision-making, resulting in a low level of social inclusion and equitable development (Mende & Drubel, 2020). In addition, interdisciplinary studies have emerged, highlighting that artificial intelligence can enhance the transparency of compliance and governance processes and the accountability of institutions within sustainability-oriented management systems (Vettriselvan et al., 2026).

The growing institutionalization of sustainable development has offered a challenge to governments, industry, and international organizations to incorporate social justice into governance systems for the environment. Promotion of equality, adoption of fair labour practices, gender inclusion, and policies promoting ethical employment practices have now come to be seen as key to sustainable environmental management (Banerjee, 2021). Today, environmental governance focuses on responsible supply chains, conservation based on community engagement, and accountability-based regulation, to minimize exploitation risks and enhance ecological sustainability outcomes. Labour accountability and transparency have also been reinforced through

technological developments like blockchain-based traceability, artificial intelligence-based auditing, and digital compliance monitoring in environmentally sensitive industries (Hosseinzadeh et al., 2025).

The modern slavery issue has a negative impact on the environment and socio-economic stability. Exploitative labour systems often lead to illegal exploitation of resources, over-exploitation of ecosystems, deforestation, and more profitable but less ecologically protective production activities in the short term than in the long term (Rauscher & Willert, 2020). Besides that, disadvantaged people are exposed to exploitative labour systems due to inequitable social systems, a lack of education, health, and employment opportunities. To respond to these interrelated challenges, an integrated approach that entails a combination of environmental conservation goals, human rights protection, and equality-based governance institutions is needed (Lucas & Landman, 2021).

This study explores the relationships between sustainable environmental management, equality promotion, and modern slavery eradication. It underscores the need for proper governance, conservation, and labour monitoring systems for socially sustainable environmental practices. The study's analysis of the interconnection between labour rights, environmental sustainability, and social equality helps contribute to the design of integrated solutions for the development of Resilient and Equitable Environmental Management Systems.

Key Contributions

- Created an interdisciplinary sustainability framework for tackling modern slavery in environmental sectors, which incorporates environmental science, ethical governance, equality promotion, and conservation management.
- Developed a conceptual link among systems of exploitation, environmental degradation, and conservation inefficiency through the sustainability-based environmental analysis.
- Technology-enabled monitoring and control ideas, such as blockchain traceability, AI-based compliance systems, and digital environmental auditing for better transparency and accountability.
- Put forward an inclusive environmental governance approach that involves stakeholders, equitable participation, and the sustainable use of environmental resources to ensure ecological resilience.

The paper is divided into five main sections. Section I introduces the research problem, the significance of modern slavery in environmental management, and the need for equality-oriented sustainability governance. Section II highlights environmental sustainability, ethical governance, labour exploitation, and technology-assisted conservation monitoring systems. Section III outlines the methodology and approach to be proposed, such as the conceptual framework, the identification of environmental and social challenges, the governance integration, the sustainability monitoring, and the mechanisms for stakeholder collaboration. In Section IV, the results achieved and the comparative sustainability analysis are presented in a structured form with interpretations of the environmental governance. Lastly, conclusions and future research directions on ethical environmental sustainability and conservation management are presented in Section V.

Literature Review

Recent research has highlighted how modern slavery and environmental degradation are global issues that impact social justice, working rights, and sustainability outcomes. Exploitative labor practices have been observed and reported to be widespread in industries related to natural resource extraction, agriculture, fisheries, and manufacturing industries that directly affect the conservation of natural resources (Caspersz et

al., 2022). These studies also pointed out that poor regulatory enforcement and governance systems play a major role in labour exploitation and ecological damage, and are a challenge to sustainable management of the environment.

A few scholars have explored the interconnections between SDGs and contemporary approaches to the elimination of modern slavery. The literature suggests that policies on environmental governance, coupled with ethical labour standards, are likely to help increase the level of accountability of the organization and facilitate the attainment of long-term sustainability goals (Gold et al., 2015). Recent research has also confirmed that workforce diversity and inclusive organizational practices are important elements in reinforcing sustainability performance and the effectiveness of environmental governance in the long-term, especially in developing economies and resource-intensive sectors (Aiswarya et al., 2024; Patil & Das, 2024). There has also been a focus on the need to ensure social equality and fair wages and working conditions for the vulnerable communities involved in conservation-related industries if environmental sustainability is to be achieved (Muninathan et al., 2025; New, 2015).

Research on global value chains found that a lack of transparency and a lack of auditing systems are key problems in industries with high environmental impact that require a lot of labor (Benstead et al., 2018). In the field of sustainable supply chain management (SCM), there have been several innovations with potential to improve transparency and reduce exploitation risks, such as digital monitoring systems, blockchain-based traceability solutions, and AI-driven compliance tools (Saberi et al., 2019). These technologies also enhance accountability via real-time monitoring of labour conditions and compliance activities related to the environment, researchers added.

Another aspect of gender inequality and social exclusion has also been identified as a key element of modern slavery and environmental injustice. Marginalized groups, and especially women and economically disadvantaged groups, are also known to be under-represented in environmental governance decision-making processes in the literature on equality-related environmental governance (Öztürk, 2020; LeBaron & Rühmkorf, 2017). In order to improve the ecological sustainability and social welfare, conservation strategies and community-based environmental policies that promote access to, and community-based control over, resources were identified.

Additional research examined the effects of climate change and environmental stresses on labour exploitation. In resource-rich areas, environmental crisis, resource scarcity, and displacement were cited as among the factors that augment vulnerabilities to forced labour and trafficking activities (Bales & Sovacool, 2021). Moreover, cooperation at the international level and ethical corporate governance and improved policy models are suggested to be essential for sustainable environmental systems, both to protect ecosystems and human rights (Kristensen & Einarsson, 2022; Ford & Nolan, 2020).

The literature reviewed shows how the fight against modern slavery and promoting equality are directly linked to sustainable environmental management and conservation. Previous research primarily addresses either labour exploitation or environmental sustainability alone; few studies investigate integrated approaches that incorporate ethics governance, equality promotion, technology transparency, and conservation management. In light of this, the purpose of this study is to try to fill this lacuna by creating an overall picture in which the protection of human rights is connected with environmentally sustainable forms of governance.

Methodology

Research Design and Conceptual Approach

The methodology of the research is qualitative with the aim of investigating the relationship between modern slavery eradication, equality promotion, and sustainable environmental management, through a framework-oriented approach. The methodological structure combines the concepts of various disciplines, such as environmental science, ecological conservation, sustainability governance, social equality, and ethical resource management, for the construction of a comprehensive environmental sustainability framework. The research is mostly conceptual in nature, exploring how concepts of environmental governance and human rights protection can be connected to explore how exploitative labour systems impact conservation effectiveness and ecological balance.

The proposed framework is interdisciplinary and incorporates environmental management thinking and approaches with sustainability-oriented social governance approaches. The methodology considers the combined effects of environmental degradation, resource exploitation, inequality, and low labour protection measures on the sustainable conservation outcome. The framework brings together environmental science principles and concepts of biodiversity protection, ecosystem stability, climate resilience, and ethical governance for responsible use of resources, making it possible to develop socially responsible environmental systems.

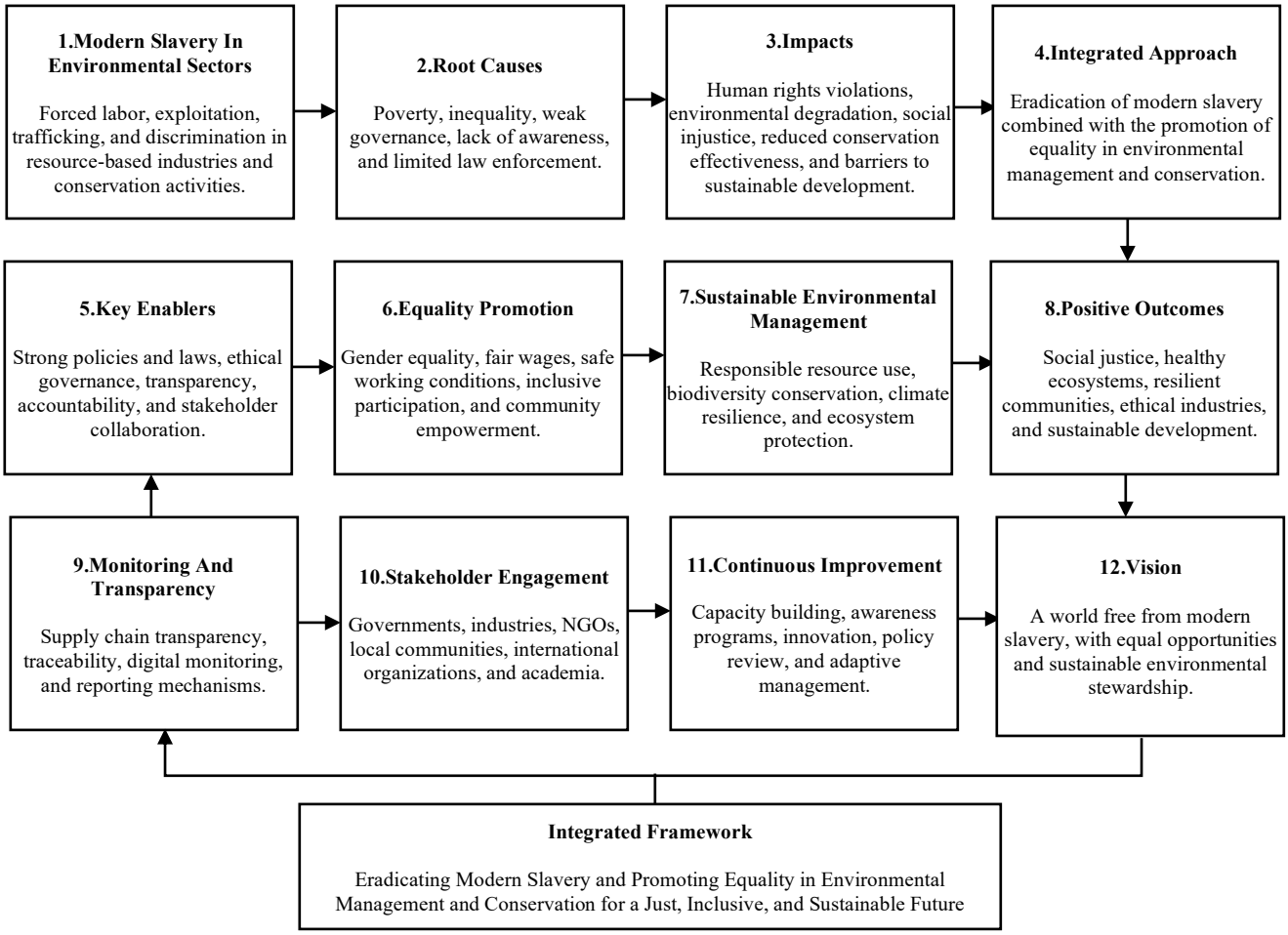

Figure 1. Conceptual framework for ethical environmental sustainability management

The conceptual sustainability framework in figure 1 was created to eradicate modern slavery and promote equality in environmental management and conservation. The framework illustrates the relationship between the exploitation of environmental systems, governance issues, equality-to-be-promoted strategies, sustainability-to-be-monitored mechanisms, and long-term ecological outcomes. The model also illustrates the role of ethical governance and transparency mechanisms, stakeholder engagement, and inclusive environmental participation in achieving sustainable ecological stewardship and environmentally balanced social development.

Identification of Environmental and Social Challenges

In this phase, the key environmental and social issues related to contemporary forms of slavery in conservation and other resource-intensive environments are identified. The agriculture, forestry, fisheries, mining, and waste-processing industries are all examined to see how unsustainable labour practices lead to environmental degradation. Forced labor, inequality, unsafe working conditions, and lack of social protection systems that have adverse impacts on ecological conservation are examined as factors.

The environmental part of the framework takes into consideration topics such as biodiversity loss, ecosystem instability, deforestation, illegal extraction activities, pollution, and overuse of resources. At the same time, the social dimension explores unequal participation, wage exploitation, and social exclusion, as well as limited access to environmental governance systems. The incorporation of environmental science and concepts of social sustainability enables the development of a wider understanding of the interconnection between ecological preservation and human welfare.

Development of Sustainability-Oriented Governance Framework

The formation of the Sustainability governance system includes the incorporation of the principles of ethical governance and environmental management systems with the aim of enhancing ecological and social sustainability. The methodology is based on a balance of mechanisms of transparency, accountability structures, conservation policies, and labour protection regulations, thus forming a balanced environmental governance model. It is based on the premise that systems of governance based on equality can help to support effective conservation and long-term environmental resilience.

At this stage, interdisciplinary sustainability strategies are put together to enable environmentally responsible operation. Inclusive environmental participation is encouraged by creating a framework that provides a cooperative platform for all the above-mentioned parties, including governments, industries, conservation organizations, local communities, and international institutions. This governance in action enhances environmental responsibility and also helps to create social equality and sustainable conservation results.

Technology-Assisted Sustainability Integration

The proposal methodology is derived from technology-oriented sustainability monitoring concepts, in order to increase transparency on the environment and responsibilities of labour in environmentally sensitive sectors. The framework provides a conceptual understanding of advanced digital governance systems such as blockchain, intelligent compliance monitoring, environmental audit platforms, or sustainability reporting systems.

These technologies enable systematic monitoring of the labour conditions, environmental compliance measures, and resource use. Sustainability systems with technology also improve governance (transparency

for verification of sustainability systems), and the risk of hidden exploitation in the environmental value chain is reduced. This stage helps to reinforce the linkage between environmental sciences and digital monitoring and safe governance.

Stakeholder Participation and Environmental Collaboration

The framework also underscores the importance of the involvement of stakeholders as key to sustainable environmental governance. In this sustainability context, the government, environmental agencies, industry, non-governmental organizations, conservation institutions, and local communities are important stakeholders. It is based on the methodology of comparing and contrasting the effectiveness of integrated environmental management practices from an ecological and a social point of view.

By involving communities in the environment, awareness is raised on environmental conservation, responsible use of resources, and environmental responsibility. Inclusive participation mechanisms also foster trust among institutions and communities, and make governance systems for the environment more effective and geared towards sustainability. Environmental science methods that employ collaboration help to foster environmentally sustainable and socially equitable environmental protection strategies.

Continuous Sustainability Improvement and Adaptation

The last step of the methodology is continuous sustainability improvement and adaptive environmental governance. The whole design process of the building is flexible and has the ability to accept changes and developments in environmental law, sustainable issues, new technologies, and social development needs.

There is a need for ongoing assessment and adjustment of governance to enhance environmental resilience and effectiveness of environmental action. The methodology includes the ability to adjust policy regularly and enhance monitoring for sustainability and governance restructuring to balance environmental protection and human rights preservation.

The integration of environmental science principles, equality-focused governance systems, and technology-based accountability mechanisms enables the framework to support the building of resilient and sustainable environmental management systems to tackle future ecological and social issues.

Results and Discussion

Observed Relationship Between Modern Slavery and Environmental Degradation

The proposed framework's implementation reveals a high linkage between the exploitative labour systems and environmental degradation in resource-dependent sectors. The results show that the activities related to forced labor and imbalanced work conditions often exhibit unsustainable operations such as illegal resource extraction, the loss of biodiversity, deforestation, degradation of the ecosystem, and instability in ecosystems. Environmental systems lacking ethical governance and labor accountability mechanisms are less effective in conserving and less resilient to environmental impacts.

The findings also show that workers from socially vulnerable groups have a greater risk of exposure to unsafe conditions at work and environmental risks in industries that are more environmentally intensive. These extractive use systems have a negative impact on human well-being and the environment. Accordingly, the interconnected analysis validates the idea that modern slavery and ecological degradation are mutually aggravating sustainability issues related to the conservation sectors.

Enhancement of Equality-Oriented Environmental Governance

The framework illustrates that the environmental sustainability performance and conservation effectiveness are much better in equality-cantered governance. Labour inclusion commitments, participation processes, community empowerment, and clear environmental policies boost governance effectiveness and ecological responsibility. Equality promotion further strengthens the cooperation between environmental institutions and local communities, and participation in environmental activities involving sustainability.

Results suggest that the environmental governance systems that include ethical labour standards are more resilient and stable over the long term than traditional conservation models. Inclusive governance also raises awareness about the environment among the stakeholders and fosters the practice of using resources responsibly. The sustainability approach is an integrated approach that helps to bring about balanced ecological preservation and social environmental management.

Comparative Effectiveness of Integrated Sustainability Framework

The differences between the traditional environmental governance system and the integrated sustainability governance framework suggest there are definite gains in environmental accountability and environmental conservation performance. While ecological focus is the main goal of conventional management systems, the integrated system also aims at ecological sustainability, at the same time paying attention to the protection of labour, promotion of equality, and transparent governance.

Table 1. Comparative characteristics of environmental governance frameworks

Aspect	Conventional Framework	Integrated Sustainability Framework
Governance Focus	Environmental regulation	Environmental and social sustainability
Labor Protection	Limited monitoring	Ethical labor accountability
Stakeholder Participation	Restricted involvement	Inclusive environmental collaboration
Transparency Level	Moderate operational visibility	High governance transparency
Conservation Strategy	Resource-centred	Human-centred sustainability approach
Sustainability Resilience	Moderate ecological stability	Strong ecological and social resilience

This comparison, as presented in table 1, shows that the integrated framework offers a more balanced approach in environmental governance that is able to take up ecological and social sustainability issues. It combines ethics in governance and environmental participation to increase the long-term effectiveness of conservation.

Contribution of Sustainability Components to Environmental Outcomes

The results show that the sustainability components have unique contributions to the effectiveness of environmental governance and the conservation performance. Democracy in the social and environmental spheres is promoted through the inclusion of equality-oriented participation systems, and accountability in operations is enhanced through ethical governance systems. Monitoring systems that use technology further increase transparency and the efficiency of sustainability compliance in environmental sectors.

The sustainability components, as listed in table 2, serve to add up to a whole environmental governance system aiming to combine ecological protection with social responsibility, ethical management, and so on.

Table 2. Role of sustainability components in environmental management

Sustainability Component	Environmental Contribution	Sustainability Impact
Ethical Governance	Strengthens policy accountability	Improves operational transparency
Equality Promotion	Enhances social inclusion	Supports community stability
Environmental Monitoring	Tracks sustainability compliance	Reduces ecological violations
Stakeholder Collaboration	Encourages participatory governance	Strengthens conservation activities
Technology Integration	Improves transparency systems	Enhances sustainability efficiency
Resource Conservation	Protects ecosystem balance	Supports long-term ecological resilience

Discussion on Technology-Assisted Sustainability Monitoring

The findings show that technology-assisted sustainability monitoring is a major improvement to the transparency of governance and environmental accountability. Adopting systematic verification of labor standards and sustainability performance can be achieved with blockchain-enabled traceability systems, artificial intelligence (AI)-based compliance mechanisms, and digital environmental auditing platforms. These technologies not only decrease the hidden risks of exploitation, but the efficiency of environmental monitoring can also be improved.

Digital sustainability systems also boost institutional cooperation and help to monitor the environment continuously in resource-intensive industries. Therefore, technology-based government provides a better way of conserving resources, transparency in operations, ethical accountability, and compliance with sustainable resources. This is because it is a merging of environmental science and digital governance mechanisms that can drive towards an adaptive and resilient environmental management system.

Overall Discussion

Generally, results indicate that if equality promotion, ethical governance, sustainability monitoring, and environmental science concepts are incorporated, it brings a high level of improvement in effective environmental management and conservation sustainability. The framework demonstrates the connection between modern-day activities in relation to the abolition of modern slavery and ecological resilience, social stability, and responsible care of the environment.

An interdisciplinary approach to integrating concepts of environmental governance, human rights protection mechanisms, and monitoring systems oriented towards sustainability can facilitate the creation of balanced environmental frameworks that can tackle ecological and social issues. The proposed model, therefore, could be useful for developing environmentally sustainable and socially responsible conservation frameworks to create long-term, inclusive conservation and sustainable development.

Conclusion and Future Work

The study shared a holistic approach to sustainability for eradicating modern slavery and promoting equality in environmental management and conservation systems. The results indicated that the exploitative labour system, inequality, and poor governance mechanisms have a strong effect on environmental degradation, inefficiency in conservation, and environmental imbalance in the long term. The overall concept of the proposed framework brought about a systematic linkage between social sustainability and ecological resilience through the integration of environmental science principles and instruments of ethical governance. The

findings also demonstrated that a combination of equality-oriented governance, inclusive stakeholder participation, the use of technologies to monitor performance, and the transparency of environmental policies has a combined positive effect on sustainability performance and conservation effectiveness. Digital sustainability solutions such as traceability, blockchain, compliance monitoring, and AI were integrated, reinforcing environmental responsibility and reducing the risk of exploitation in environmentally-intensive industries. The framework thus has the ultimate aim of developing environmentally sustainable and socially responsible governance systems that can reach a balance between environmental protection and human rights protection, as well as broad-based environmental involvement.

The next step in the work is to concentrate on the practical application and testing of the suggested framework in the real-world environmental and conservation fields. Other studies can be conducted to identify the environmental issues in the region, climate labour vulnerability, and the policy adaptation for sustainable conservation governance. Use of EE, SE, and C-based EE training models could further enhance the socially inclusive conservation systems. The future interdisciplinary research, including in the field of environmental science, sustainability analytics, digital governance, and social policy development, can help to bring adaptive environmental management systems to a new level, which are capable of reacting to novel ecological and human rights challenges at the global level.

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