

# Women as Custodians of Biodiversity: Integrating Gender Perspectives into Environmental Sustainability

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## **Abstract**

*Nature has always nurtured life through its abundant resources and ecological wisdom. However, the disconnection between modern societies and the environment has led to rapid ecological degradation. While conservation is a collective responsibility, women's roles in biodiversity preservation remain particularly significant due to their traditional knowledge, community involvement, and resource management practices. This paper explores the causes of environmental deterioration, global conservation strategies, and the unique role women play in restoring ecological balance. Through a gender-inclusive lens, the study analyzes women's multifaceted contributions—from sustainable agriculture and community engagement to entrepreneurship and policy advocacy—arguing that their involvement is essential for the success of biodiversity conservation initiatives. The paper calls for integrative, gender-sensitive environmental policies and frameworks that empower women while addressing global sustainability challenges.*

## **Keywords:**

*Biodiversity Conservation, Women and Environment, Sustainability, Ecofeminism, Gender Roles, Environmental Policy, Traditional Knowledge*

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## **Introduction**

Nature has been an enduring source of wisdom, vitality, and sustenance since the dawn of human civilization. From the rhythmic flow of rivers to the gentle sway of trees and the glow of the moon, nature has not only provided for physical survival but has also inspired cultural, spiritual, and emotional well-being across societies. However, in the relentless pursuit of industrialization, urban expansion, and material comfort, humanity has increasingly severed its deep-rooted connection with the natural world. This disconnect has given rise to a dangerous indifference toward the environmental systems that support life.

Elements fundamental to our existence—clean air, fresh water, fertile soil, and sunlight—are often undervalued until their scarcity disrupts everyday life. The degradation of these essential resources is now a global concern. Forests, which regulate climate and serve as biodiversity reservoirs, are being razed for commercial gain. Rivers and oceans are burdened with industrial waste and plastic pollution. Agricultural practices, once in harmony with nature, are now driven by chemical inputs and monoculture, threatening soil fertility and food security.

The consequences of such unsustainable exploitation are now visible in rising temperatures, erratic weather patterns, shrinking biodiversity, and the increasing frequency of natural disasters. Climate change, water scarcity, and ecosystem collapse are no longer future predictions but present-day realities that disproportionately affect vulnerable communities, especially in developing regions.

This crisis compels a fundamental reassessment of our development priorities and environmental values. The health of our planet is intrinsically linked to the choices we make today. A shift toward ecological consciousness is essential—not just for the survival of wildlife and forests—but for the continuity of human civilization itself. Reconnecting with nature and embracing sustainability is no longer an option but a necessity. The urgency lies in redefining progress to include environmental integrity, intergenerational responsibility, and a renewed respect for the earth's delicate balance.

## **Environmental Degradation: A Global Concern**

Over the past few decades, the planet has experienced an unprecedented scale of environmental degradation. This alarming trend is primarily driven by human activities such as rapid industrialization, unsustainable urbanization, deforestation, and the overexploitation of natural resources. The pursuit of economic growth and material comfort, often at the expense of ecological balance, has led to significant environmental costs that now threaten the very foundations of life on Earth.

Pollution has emerged as a major concern, with air, water, and soil contamination affecting both ecosystems and human health. Industrial emissions and vehicular pollutants have deteriorated air quality in urban centers, contributing to respiratory ailments and climate change. Water bodies, once pristine, are now carriers of toxic industrial effluents, untreated sewage, and chemical fertilizers, endangering aquatic life and rendering freshwater sources unsafe for consumption. The soil, too, bears the brunt of environmental abuse, often found laced with plastics, pesticides, and heavy metals, impairing its fertility and leading to reduced agricultural productivity.

Deforestation, another consequence of human encroachment, has drastically reduced forest cover worldwide, disrupting the habitats of countless species and contributing to biodiversity loss. Forests, which act as carbon sinks and regulate climate patterns, are being cleared for agriculture, urban expansion, and commercial logging, intensifying the threat of global warming and ecological imbalance. Simultaneously, the extinction of plant and animal species is accelerating, shrinking the planet's biodiversity and weakening ecosystems' ability to adapt and recover from disturbances.

Climate change, driven by greenhouse gas emissions, is manifesting in the form of extreme weather events—floods, droughts, hurricanes, and wildfires—posing serious risks to livelihoods, food

security, and public health. Melting glaciers, rising sea levels, and shifting weather patterns are not distant threats but realities unfolding today.

In this context, it becomes imperative to recognize that environmental degradation is not a localized issue but a global crisis that transcends national boundaries. Without urgent and coordinated action, the current trajectory will leave future generations with not just economic instability but a planet bereft of ecological security, livable habitats, and sustainable resources. The call for change is now, and it must begin with collective ecological responsibility and global cooperation.

### **Global Conservation Initiatives**

The mounting threat of environmental degradation has galvanized international efforts toward the conservation and sustainable management of the planet's natural resources. Recognizing that environmental issues transcend national boundaries, global communities have come together to formulate cooperative strategies aimed at preserving the Earth's ecological balance. One of the most significant milestones in this direction was the establishment of the Convention on Biological Diversity (CBD), adopted at the Earth Summit in Rio de Janeiro in 1992.

The CBD marked a pivotal moment in environmental diplomacy, laying down a comprehensive legal framework for biodiversity conservation at the international level. Its three main objectives are:

The conservation of biological diversity

The sustainable use of its components

The fair and equitable sharing of benefits arising from the use of genetic resources.

These objectives reflect a balanced approach that integrates ecological sustainability with economic and social development. The CBD promotes national strategies and action plans for biodiversity, encourages the protection of ecosystems, and facilitates access to and transfer of relevant technologies. Over the years, several protocols under the CBD, such as the Nagoya Protocol and the Cartagena Protocol, have further strengthened global biodiversity governance. These frameworks aim to ensure that conservation efforts are inclusive, science-based, and respectful of both indigenous knowledge and global equity.

To meet these objectives, several integrated approaches have been adopted:

#### **Protected Areas:**

National parks, wildlife sanctuaries, and marine reserves act as biodiversity havens.

#### **Ecosystem-Based Management:**

A holistic strategy that addresses the interdependence of species and habitats.

#### **Sustainable Harvesting:**

Resource extraction regulated by quotas and habitat protection.

#### **Agroecology:**

Agricultural models that mimic natural ecosystems, promoting biodiversity.

#### **Community-Based Conservation:**

Empowering local communities through participatory governance.

#### **Incentive Mechanisms:**

Financial support through Payments for Ecosystem Services (PES).

#### **Education and Awareness:**

Environmental literacy programs to foster eco-conscious citizenship.

#### **Policy and Governance:**

Enforcing biodiversity-friendly land use and development policies.

## **Gender and Biodiversity: An Interconnected Relationship**

While the responsibility of environmental stewardship is shared across all genders, women's relationship with biodiversity often reflects a unique, community-rooted perspective born of their daily interactions with natural ecosystems. In both rural and indigenous settings, women are frequently at the frontline of environmental management, using natural resources to sustain their households while preserving ecological balance. Their intimate connection with land, water, forests, and food systems positions them as vital custodians of biodiversity.

### **Resource Dependency:**

In many rural and tribal communities, women depend heavily on natural resources for their survival and livelihood. They gather firewood, medicinal plants, fodder, and wild edibles, and are responsible for water collection and subsistence farming. This dependence nurtures a profound understanding of seasonal cycles, soil quality, and ecosystem health, making women not only users of biodiversity but also its vigilant observers and protectors.

### **Caretaker Roles:**

Traditionally, women manage domestic needs such as food preparation, water storage, and household waste, which require them to be acutely aware of environmental quality. Kitchen gardens, herbal remedies, and water conservation practices are examples of how women manage natural resources wisely, often without formal recognition.

### **Knowledge Transmission:**

As caregivers and educators, women play a pivotal role in passing down traditional ecological knowledge across generations. This includes awareness of local flora and fauna, sustainable harvesting techniques, and agricultural practices that promote biodiversity. Such knowledge forms the foundation of cultural continuity and ecological awareness in communities.

### **Community Engagement:**

Women are often the architects of grassroots conservation initiatives. Whether through self-help groups, cooperatives, or local NGOs, they organize efforts to protect water bodies, plant trees, manage waste, and promote eco-friendly alternatives. Their leadership ensures that conservation is inclusive, practical, and locally relevant.

### **Barriers and Resilience:**

Despite their contributions, women frequently face systemic barriers to participating in formal conservation policy-making and institutional decision-making. Patriarchal structures and limited access to education, land rights, and financial resources hinder their agency. Yet, women continue to demonstrate resilience, advocating for biodiversity through informal networks, activism, and innovation.

Recognizing and empowering women's role in biodiversity conservation is not just a matter of equity—it is essential for building sustainable and resilient environmental futures.

## **Women's Contributions to Biodiversity Conservation**

### **Traditional Knowledge and Practices**

Women are the bearers of ecological wisdom, preserving generational knowledge about native species, seasonal cycles, and sustainable harvest practices.

### **Resource Management**

Women across various cultures are custodians of vital resources—forests, water sources, and arable land. Their role in preserving these resources ensures food security and ecological resilience.

## **Sustainable Agriculture**

Through practices like organic farming, crop rotation, and agroforestry, women promote biodiversity-friendly farming systems that reduce reliance on chemical inputs.

## **Eco-Entrepreneurship and Innovation**

From waste recycling to eco-tourism and organic product ventures, women-led enterprises combine environmental sustainability with livelihood generation.

## **Community Leadership and Advocacy**

Grassroots leadership by women ensures that conservation strategies align with local needs. Women's participation also brings inclusivity into policymaking, fostering social and ecological justice.

## **Education and Environmental Awareness**

Women play a critical role in fostering environmental consciousness. Their grassroots campaigns and school-based outreach sow seeds of sustainable living in the minds of future generations.

## **Policy Engagement**

When women are involved in environmental governance, conservation policies tend to be more equitable, holistic, and sustainable. Their advocacy promotes the integration of gender concerns into national and global biodiversity frameworks.

## **Conclusion**

In the symphony of nature and human civilization, women play a harmonious, multifaceted role in ensuring ecological resilience. Their daily practices, indigenous knowledge, and community leadership are central to biodiversity conservation. Gender-inclusive approaches are not only morally imperative but also essential for effective environmental stewardship. Embracing women as ecological custodians is a crucial step toward sustainable development, equity, and intergenerational justice. The intricate relationship between human survival and the natural world has never been more evident than in today's age of ecological crises. As the planet faces unprecedented environmental challenges—climate change, biodiversity loss, pollution, and resource depletion—it becomes imperative to adopt inclusive, sustainable approaches to conservation. Among the most powerful yet underrecognized contributors to this effort are women. Their roles as nurturers, educators, resource managers, and community leaders uniquely position them at the heart of biodiversity conservation.

Across the globe, women's daily interactions with nature—through agriculture, water collection, food preparation, and medicinal practices—have embedded in them an intimate understanding of environmental cycles and sustainability. Their traditional knowledge and community-based practices have preserved ecosystems for generations. Women are not merely passive recipients of environmental degradation; they are active agents of change, implementing and advocating for sustainable solutions at local, national, and global levels.

Despite their significant contributions, women often remain marginalized in formal conservation institutions and policy-making platforms. Systemic barriers such as limited land rights, lack of financial access, and sociocultural constraints continue to restrict their full participation. Therefore, any comprehensive biodiversity strategy must prioritize gender inclusion—not as a token gesture, but as a core principle for effective environmental governance. Strengthening women's agency through education, legal rights, financial empowerment, and institutional support is essential for building climate-resilient communities and sustainable ecosystems. Policies must be designed to reflect women's voices, and conservation efforts must value their knowledge and leadership. By embracing a gender-responsive approach, we can foster ecological stewardship that is both equitable and effective.

In sum, the future of biodiversity conservation lies in recognizing and harnessing the potential of women—not only as protectors of the environment but as visionaries of a more sustainable, inclusive, and resilient world.

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