

Women Protection and Economic Development of Environmental Resources in India

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The research paper reveals that empowering women is crucial for environmental resource protection and inclusive economic growth in India.

Women are primary resource managers and possess vital knowledge of sustainable practices like water conservation and seed preservation. Initiatives that include women in decision-making for environmental management, such as forest management and water harvesting, lead to more effective conservation and climate resilience. Economic growth benefits from women's participation as they invest in their families and communities, improve health and education, and contribute to sustainable agriculture and entrepreneurship.

1.0 Introduction:

In India 2025 indicates significant momentum for integrating women into the green economy to boost sustainable development and economic growth. To truly harness India's demographic dividend, women's empowerment must shift from aspiration to implementation. Advancing women's equality could lead to a \$28 trillion increase in global GDP, with India potentially seeing a \$770 billion boost by 2025. A gender-equal economy accelerates not just inclusive growth but national development. Initiatives like the Powering Livelihoods program are directly supporting rural women through clean-tech adoption, while a major report highlighted a potential \$2.9 trillion economic boost if women's participation in the economy is increased. Challenges remain, including access to finance and engineering education, but there is a strong focus on mentorship, policy reforms, and public-private partnerships to empower women as entrepreneurs and engineers in sectors like renewable energy and circular economy. As India charts its path toward a \$30 trillion economy and carbon neutrality by 2070, the intersection of gender empowerment and climate action is emerging as a game-changer. However, in 2024, only 18% of Indian start-ups are led by women. As climate change accelerates and green innovation becomes indispensable, empowering women in green enterprises is not just about gender parity — it's central to achieving India's vision of a sustainable, inclusive, and developed economy by 2047. The World Bank estimated that environment degradation is costing around 5.7% of the country's GDP every year. History witnessed that how women have been playing an integral part and parcel in conserving and protecting environment which is so much successful so far.

In every time they come forward and protect the environment whether it was by tree hugging or doing long time hunger strike without bothering about their life. It is because, women are always close to nature and very much dependent upon the nature. Women have been always considered the symbol of kindness and love. Therefore, being a mother, they know the pain when their children get hurtled likewise, they know the pain of

earth when her plants, rivers are damaged. Development is necessary, but it should not at the cost of environment. Development is fruitless without lives and without environment no lives can be exist in the earth. It is need of hour to pay strong attention towards women involvement in the decision-making process and making gender sensitive environmental policies. Though female entrepreneurship and financial inclusion are growing, political representation remains low with just 13.6% women in the 18th Lok Sabha. India must urgently address structural inequalities, safety concerns, and societal perceptions to unlock women's full economic potential and accelerate national growth¹.

2.0 Women's Role in Environmental Protection

2.1 Resource Management:

Women are deeply involved in daily activities like gathering fuel, water, and food, making them key stakeholders in managing natural resources like land, forests, and water.

2.2 Traditional Knowledge:

Women often possess traditional knowledge of sustainable practices, including seed conservation and using natural soil-building methods, which is essential for preserving biodiversity and ecosystem health.

2.3. Community-Led Initiatives:

In India, women's self-help groups have successfully implemented eco-friendly solutions such as rainwater harvesting, waste recycling, and sustainable farming practices, demonstrating leadership in environmental stewardship.

2.3 Environmental Movements:

Women have historically been at the forefront of environmental movements, such as the Chipko movement, where they protected forests by hugging trees, and are active in advocating for the protection of natural water resources.

3.0 Women's Impact on Economic Growth

3.1 Sustainable Practices:

When empowered, women adopt and promote more sustainable consumption and production patterns within their communities and households.

3.2 Improved Health and Education:

Empowered women make better decisions regarding their health and families, leading to healthier outcomes and increased access to education, which contributes to a more robust workforce and societal development.

3.3 Entrepreneurship and Income Generation:

Women are increasingly participating in economic activities, including sustainable agriculture and eco-friendly businesses. Initiatives like the Mann Deshi Foundation's rural business schools provide training and support, enabling women to start and grow their own businesses.

3.4 Climate Resilience:

By empowering women to lead in climate-related decision-making and adaptive strategies, communities can strengthen their resilience to climate change, ensuring sustainable development for all.

4.0 Integration for Sustainable Development

4.1 Policy Inclusion:

Including women in the formulation of environmental policies and project design is vital for achieving inclusive and sustainable economic development.

4.2 Empowerment for Resilience:

Empowering women through education, economic opportunities, and access to financial resources allows them to better respond to environmental challenges and build more resilient communities.

4.3 A Holistic Approach:

Empowering women is not just a matter of social justice but a fundamental requirement for India to achieve its goals for sustainable economic growth and environmental sustainability. In 2025, India's economic growth is increasingly linked to greater women's participation in the economy and environmental sustainability, with women-led green businesses playing a key role in this synergy. While India has made progress in women's empowerment through microfinance, rural entrepreneurship, and initiatives like Nai Roshni and GOBARdhan, challenges remain in bridging the gender gap in access to education, finance, and leadership opportunities within the green economy. Achieving greater gender parity and empowering women in environmental sectors is seen as crucial for sustainable development and unlocking significant economic potential for India.sustainability².

5.0 Women's Role in Environmental Resources & Economic Growth

5.1 Green Economy Leadership:

Women are contributing significantly to India's move toward a sustainable future by leading green businesses and startups that offer innovative solutions for environmental challenges.

5.2 Economic Potential:

Closing the gender gap in economic participation could significantly boost India's GDP, potentially increasing it by USD 700 billion by 2025, highlights United Nations in India and Startup India.

5.2 Sustainable Resource Management:

Women's empowerment is central to sustainable development, with their roles in environmental conservation being crucial for balanced resource management³.

6.0 Government Initiatives & Programs

6.1 Nai Roshni Scheme:

This scheme empowers minority women by providing leadership training and financial support, fostering economic independence.

6.1 GOBARDhan (Galvanising Organic Bio-Agro Resources Dhan):

A multi-ministerial initiative to convert agricultural waste into valuable resources like compost and biogas, promoting rural cleanliness and entrepreneurship, including for women.

6.2 PMAY (Pradhan Mantri Awas Yojana):

Housing programs that allocate funds to women, although the focus needs to be more women-centric to ensure genuine empowerment, according to orfonline.org⁴.

7.0 Challenges and Way Forward

7.1 Access to Finance and Support:

Women entrepreneurs in the green sector still face challenges related to funding, bias, and insufficient government support.

7.2 Cultural & Structural Barriers:

Entrenched social norms and a lack of access to education, healthcare, and finance continue to hinder women's full participation in economic and environmental sectors.

7.3 Need for Systemic Change:

To realize the full benefits, India needs comprehensive approaches that combine policy reforms, educational enhancements, and cultural shifts to ensure women-centred resource management and leadership.

8 Focus on Women's Voice:

Empowering women by ensuring their voices are included in environmental policy decisions is essential for achieving sustainable development goals. In India, 2025 news indicates significant momentum for integrating women into the green economy to boost sustainable development and economic growth. Initiatives like the Powering Livelihoods program are directly supporting rural women through clean-tech adoption, while a major report highlighted a potential \$2.9 trillion economic boost if women's participation in the economy is increased. Challenges remain, including access to finance and engineering education, but there is a strong focus on mentorship, policy reforms, and public-private partnerships to empower women as entrepreneurs and engineers in sectors like renewable energy and circular economy.

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9.0 Key Initiatives & Programs

9.1 Powering Livelihoods Program:

This program supports women-led social startups focused on clean-energy technologies, integrating women into value chains and fostering gender-inclusive growth in the green economy, according to a CEEW publication⁵..

9.2 World Sustainable Development Summit (2025):

A report presented at this summit emphasized the significant economic potential, estimating a USD \$2.9 trillion boost for India by enabling women's full engagement in the sustainable economy.

9.3 Women of Mettle (Tata Steel):

This initiative aims to increase women's representation in manufacturing and engineering by providing scholarships to support their entry into fields like renewable energy and the circular economy.

9.4 NITI Aayog's Women Entrepreneurship Platform:

This platform provides support for women entrepreneurs and is a valuable component in efforts to address barriers to success.

10.0 Economic & Environmental Opportunities

10.1 Green Economy Growth:

Empowering women is seen as essential for unlocking India's vast green economy potential, with sectors like renewable energy and bio-packaging showing significant market opportunity. Green Economy Growth of Empowering women is seen as essential for unlocking India's vast green economy potential, with sectors like renewable energy and bio-packaging showing significant market opportunity.

10.2 Blue Economy:

In coastal regions, women are vital custodians of traditional ecological knowledge and play a key role in the blue economy. Focusing on their empowerment in conservation and sustainable resource management can strengthen both local communities and the national economy.

10.3 Engineering & Innovation:

With increasing automation, women can now enter traditionally "heavy-lifting" engineering roles. More women engineers are crucial for developing technology-driven solutions in renewable energy and other green sectors.

11.0 Challenges and Solutions

In coastal regions, women are vital custodians of traditional ecological knowledge and play a key role in the blue economy. Focusing on their empowerment in conservation and sustainable resource management can strengthen both local communities and the national economy. Engineering & Innovation with increasing automation, women can now enter traditionally "heavy-lifting" engineering roles⁶. More women engineers are crucial for developing technology-driven solutions in renewable energy and other green sectors. Access to Finance Women entrepreneurs in green businesses struggle to secure funding, with a large proportion being self-financed. Initiatives are needed to improve their access to finance. Mentorship & Support more targeted mentorship programs, improved access to finance, and greater collaboration with corporations and educational institutions are required to help women entrepreneurs succeed. Engineering Education a low percentage of women in engineering (19.2%) hinders progress. Updating curricula and offering scholarships can help address this gap and foster a pipeline of women engineers for the green economy. Policy Integration there's a recognized need to integrate gender equality into national policy frameworks, budgets, and institutional practices to ensure sustainable and inclusive economic development⁷.

11.1 Women as Environmental Stewards and Economic Drivers

Agricultural Productivity Empowering women farmers with equal access to land, credit, and education could increase farm yields by 20-30%, potentially feeding millions and reducing pressure on forests. Sustainable Practices in women are at the forefront of adopting sustainable agricultural methods, including using drought-resistant seeds and low-impact soil management techniques⁸. Community Conservation of women lead reforestation efforts, manage community seed banks, and use ancestral knowledge to protect biodiversity, contributing to local resilience against climate change.

12.0 Economic Growth and GDP Potential

Large GDP Boost to empowering women in green sectors could unlock a substantial increase in India's GDP, potentially boosting it by USD 2.9 trillion, according to a report at the World Sustainable Development Summit, 2025. Multiplier Effects on women-led businesses tend to hire more women, creating multiplier effects in job creation and economic participation.

13.0 Government Support and Future Directions

13.1 Financial Inclusion:

Initiatives like the Aadhaar program have improved digital financial inclusion, making it harder for men to control household finances, but more support is needed for women in the formal economy.

13.2 The Way Forward:

Strengthening the financial system for women and providing more leadership opportunities are critical to achieving full benefits of women's participation in sustainability and the green economy.

14.0 Environmental Resources and Women's Protection

Energy Access Providing women with renewable energy solutions like solar panels and biogas plants reduces their workload, lowers exposure to indoor air pollution from traditional fuels, and frees up time for economic activities. **Climate Vulnerability** Climate-related disasters disproportionately affect women, who already face limited access to resources and are often responsible for household energy and food security, leading to increased health risks and displacement⁹. **Gender-Based Violence** Climate shocks are linked to increased rates of gender-based violence, child marriage, and exploitation, especially in post-disaster scenarios.

15.0 Empowering Women for Economic Growth

Policy Inclusion Policymakers are encouraged to actively include women in environmental policy formulation and project design to harness their knowledge and contributions to sustainable development. **Resource Access** Ensuring women have equal access to vital resources, education, and technology is crucial for unlocking their full economic potential and fostering sustainable growth. **Capability-Building** Shifting the focus to expanding women's "capabilities"—their freedoms and opportunities to achieve well-being—allows them to better adapt to climate change and contribute to economic development¹⁰.

16.0 Key Challenges for Women Entrepreneurs

➤ Access to Finance:

- 🚦 Women face difficulties in securing finance, with 79% being self-financed and only 1.1% borrowing from financial institutions.
- 🚦 The presence of a male co-founder improves credit access, despite evidence of women being better borrowers¹¹.

➤ Need for Tailored Mentorship:

- ❖ Initiatives like BRICS bootcamp and NITI Aayog's Women Entrepreneurship Platform are beneficial but more such programs are needed.
- ❖ Collaborations with large corporations and educational institutions can enhance training and networking opportunities.

➤ Engineering Education:

- ❖ Women represent only 19.2% in engineering fields.
- ❖ Updating curricula to include automation advances and offering scholarships can help increase participation.

➤ **Government and Corporate Initiatives**

➤ **Government Support:**

- ❖ The 2025 Budget's term loans for SC and ST women entrepreneurs set a positive precedent.
- ❖ Simplifying access to these schemes can boost women's participation.

➤ **Corporate Responsibility:**

- ❖ Banks and investment firms should allocate a portion of their portfolio to green innovations, with a focus on women-run businesses.
- ❖ Programs like Tata Steel's 'Women of Mettle' provide scholarships to women engineers¹².

17.0 Conclusion

Women's protection is integral to economic growth in environmental resources, highlighting their role as key environmental stewards and the negative impacts of climate change on their livelihoods, particularly in developing nations. Green businesses are enterprises that create products, services, and technologies that reduce environmental harm while ensuring economic viability. They form a crucial pillar of the transition to a low-carbon, circular, and inclusive economy. As per the Economic Survey 2024-25, India's green sector could generate over 3 million jobs by 2030, provided supportive infrastructure, finance, and gender-inclusive policies are in place. Empowering women entrepreneurs in the green economy is crucial for realizing India's sustainable growth potential. By addressing financial access, mentorship, and educational challenges, India can foster a robust green business ecosystem led by women, aligning with the vision of a sustainable, developed nation by 2047. Empowering women through equal access to resources like land, credit, and technology could significantly boost farm yields, reduce deforestation, and foster inclusive economic growth. Initiatives promoting renewable energy, sustainable agriculture, and community-based conservation directly enhance women's capabilities and resilience, creating a positive cycle of environmental protection and economic development. The main focus on integrating women into India's green economy to drive economic growth and environmental sustainability, highlighting the potential for a substantial boost to India's GDP by empowering women in green sectors and community-based climate solutions.

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