



Women crossing a log bridge in a remote village of Uttarakhand.
Photo: Aditi Mishra

Women protecting forests in Uttarakhand, India

Custodians of forest conservation and fire mitigation

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Introduction

“The forest gives us life – how could I let it burn?”

Harshita, a 32-year-old mother from Gular village, Almora, Uttarakhand

The women of Uttarakhand, India, quietly shoulder the immense responsibility of protecting the region's forests. In the heart of the state's lush Himalayas, oak (*Quercus spp.*), deodar (*Cedrus deodara*), pine (*Pinus spp.*) and rhododendron forests stand as silent witnesses to centuries of ecological harmony and human resilience. Harshita, for example, bravely fought back an advancing fire to protect her home; like her, countless women across these villages act as the first line of defence against environmental threats. For generations, these verdant landscapes have been safeguarded not by institutions or policies alone, but by the relentless dedication of women from forest-dependent communities. This article explores the critical role of women in forest conservation and fire mitigation in Uttarakhand, drawing from academic literature, historical accounts and field studies.

Uttarakhand's forests are among the Earth's most ecologically significant landscapes. The Indian Himalayan Region is a global biodiversity hotspot with diverse flora and fauna, high endemism, and economically significant medicinal and woody plants. The region holds immense ecological, cultural, economic and social value. For the local communities, its forests are lifelines, providing fuelwood, fodder, medicinal plants and sustainable livelihoods. However, they face constant threats from climate change (Mishra et al., 2024); the delicate balance of the ecosystem is under severe strain due to many climatic and anthropogenic factors. Rising global temperatures, large-scale deforestation, and unsustainable human activities have left these forests increasingly vulnerable to devastating fires (Robinne et al., 2018). Wildfires are no longer rare, isolated events; they are becoming frequent disasters, threatening lives, livelihoods and nature, while affecting local, regional and global communities in multifaceted ways.

As rising temperatures and human-induced activities exacerbate the risk of wildfire, women emerge as defenders of the environment and as architects of ecological resilience. Just as Nanda Devi, the sacred

mountain of the Himalayas, is revered as a guardian of balance and protection, these women stand as sentinels of the forests, preserving harmony between humans and nature. From leading grassroots movements to spearheading wildfire prevention efforts, they demonstrate unparalleled courage, knowledge and commitment. Recognizing and amplifying their contributions is essential for a sustainable future: one where forests thrive, communities prosper, and the delicate balance of nature is preserved.

Women's leadership in environmental movements

For generations, women in India have spearheaded environmental justice movements, driving community-led efforts to safeguard their lands, resources and futures. These movements extend beyond environmental preservation, addressing the intersections of social justice, sustainability and community resilience.

Women have been the first line of defence against ecological exploitation for centuries. In 1731, Amrita Devi of Rajasthan's Bishnoi community sacrificed her life to save



Left and right: The devastating impact of wildfires on ecosystems and communities. Photo: Aditi Mishra



Women carrying fuelwood from the forest. Photo: Aditi Mishra

khejri trees (*Prosopis cineraria*) from being felled by the maharaja's forces. Her declaration, *“If a tree is saved, even at the cost of one's head, it's worth it,”* continues to resonate as a rallying cry for ecological justice (Dankelman, 2010, p. 224). The Bishnoi community's conservation efforts remain a model of sustainability, highlighting the deep cultural and spiritual ties between women and forests. This deep-rooted environmental consciousness led the way for later efforts, including the Chipko movement of Uttarakhand.

The Chipko movement, which began in the 1970s, epitomizes women's leadership in environmental conservation. In the village of Raini, women led by Gaura Devi and Bachni Devi physically embraced trees to prevent their felling, declaring, *“The forest is our mother's home, and we will defend it with all our might”* (Jain, 1984). Traditionally, women were responsible for collecting fuelwood, fodder and water, giving them firsthand knowledge of the ecological consequences of deforestation. Their activism was not just focused on saving trees — it was about protecting their livelihoods, preventing soil erosion, and preserving water sources vital to their survival.

Building on the Chipko legacy, similar movements have emerged in Uttarakhand and beyond, with women continuing to play a central role. Even today, in Raini village, women have carried forward Gaura Devi's mission by actively opposing illegal mining and deforestation (Mathur et al., 2023). Their ongoing efforts demonstrate that women are not passive victims of environmental degradation, but active custodians of forests and leaders in conservation.

Community-conserved forests

Community-conserved forests (CCFs) in Uttarakhand exemplify the synergy between environmental stewardship and sustainable livelihoods, with women serving as the cornerstone of these efforts (Nautiyal, 2008). These forests are maintained through collective efforts; local communities establish rules for resource use, ensuring that the area's ecological integrity is not compromised. As primary stewards of these mountain forests, women play a vital role in conserving them and in ensuring the continuance of traditional practices that link cultural beliefs to ecological stewardship.

One of the most notable CCFs is Thal Kedar forest in Pithoragarh, an 800-year-old sacred site protected by local villages (Joshi et al., 2023). Women monitor forest health, prevent overharvesting and enforce community-set bans on green felling and commercial exploitation. Their efforts sustain biodiversity while ensuring that the forest continues to provide essential resources such as medicinal plants and wild edibles.

The Nanda Sain forest is another example of women's conservation leadership. Over a century ago, women in Nanda Sain resisted British efforts to establish pine plantations, advocating for native oak (*Quercus leucotrichophora*) to support water retention and biodiversity (Rawat, 1999). This movement inspired broader community forestry efforts and remains influential today. The women's leadership extends beyond direct conservation; they are also custodians of

traditional ecological knowledge, using folklore and rituals to educate younger generations. However, urbanization and modernization pose challenges to these systems (Khan, 2008), prompting women to advocate for blending indigenous and Western conservation practices. In 1988, women in the region again actively resisted commercial pine plantations, instead promoting oak cultivation for its ecological benefits. To further protect the forests, they implemented wildfire prevention strategies, such as creating natural firebreaks, to safeguard biodiversity and water sources.

Women on the front lines of wildfire mitigation

Wildfires are one of the most severe threats facing Uttarakhand's fragile ecosystems, and women are at the forefront of efforts to prevent and mitigate them (Sagar et al., 2024). Their leadership, particularly in grassroots organizations and community-based initiatives, has proven indispensable in preventing and combating wildfires (Agarwal, 2010).

The *Maiti Andolan* (Mother's Home Movement) illustrates women's role in wildfire mitigation (Sati, 2023). Founded by Dr. Kalyan Singh Rawat in 1995, this movement encourages communities to plant saplings of oak (*Quercus leucotrichophora*) — known for its water-retaining properties — during weddings and other ceremonies, fostering a culture of forest regeneration. Women in villages such as Gwadham have taken the lead in nurturing these saplings, ensuring that they grow into fire-resistant forests that also provide long-term ecological benefits. This grassroots approach aids in wildfire prevention and strengthens the bond between communities and their natural surroundings.

Another compelling example is the Sitlakhet model in Almora. Here, women have mobilized under the "Save Forests, Save Life" campaign to address the growing threat of wildfires. Recognizing their deep reliance on forests for their daily needs, women play a central role in wildfire prevention through controlled burning, regular monitoring of fire-prone areas, and community-wide drills. The Sitlakhet model is an ongoing initiative that fosters collaboration between *jan* (local communities) and *tantra* (forest officials), empowering women through training, incentives and leadership roles in conservation (Sebastian, 2022). Their efforts have significantly reduced wildfire incidents, highlighting the power of proactive, community-driven solutions.

Women's traditional knowledge plays a crucial role in these efforts. As primary users of forest resources, they are acutely aware of environmental changes and potential wildfire risks (Wan et al., 2011). This knowledge enables them to act swiftly during wildfire emergencies, often coordinating with local forest departments to contain the fire. Despite limited resources, their ingenuity — using basic tools such as green branches, soil and water — has repeatedly saved large tracts of forest from destruction.

Across Uttarakhand, women have taken on crucial tasks in wildfire prevention and response, forming community-led patrols to monitor fire-prone areas during the dry season. They act as first responders, equipped with mobile phones, fire beaters and traditional tools to contain wildfires before they escalate. Their collaboration with forest officials has significantly strengthened wildfire management, reducing response time and preventing fire spread. Additionally, the state's pioneering inclusion of women in wildfire brigades since 2023 has further bolstered their role, proving that community-driven efforts, combined with institutional support, are crucial in tackling Uttarakhand's ongoing wildfire crisis (Nagarkoti, 2024).

The work of women in fire mitigation extends beyond prevention and response. In areas affected by wildfires, women lead reforestation initiatives, planting native species that restore soil stability and enhance biodiversity. A key example is the Harela Festival, a traditional celebration in Uttarakhand where communities — led largely by women — plant trees to mark the onset of the monsoon (Mishra and Uniyal, 2024). This practice not only rejuvenates degraded landscapes but also strengthens ecological resilience. By blending traditional customs with modern strategies, women play a crucial part in rebuilding forests and preparing them to withstand future risks.

Challenges and systemic barriers

Despite their pivotal role, women in Uttarakhand face systemic barriers that hinder their full potential as environmental stewards. Patriarchal norms often exclude them from decision-making processes, relegating their contributions to informal or unrecognized roles. For instance, although women actively engage in firefighting and forest conservation, community leadership and resource allocation largely remain dominated by men. Institutional policies also frequently fail to formally acknowledge women's efforts. Additionally, cultural expectations often confine women to domestic roles, dismissing their expertise and leadership in conservation efforts.

Economic vulnerabilities further compound these challenges. With men increasingly migrating elsewhere for work, women bear greater responsibility for household and forest-related labour, relying on forest resources for fuel, fodder and livelihoods. Initiatives like self-help groups have provided some relief, enabling women to diversify their income sources and build resilience. However, meaningful systemic interventions are necessary to empower women as equal stakeholders in forest governance; these will require both legislative and policy reforms and shifts in societal attitudes.

Policy recommendations

Empowering women in forest conservation and wildfire mitigation demands addressing systemic challenges while harnessing their capacities (Dushkova and Ivlieva, 2024). Formal recognition of women's roles, and the provision of resources, are crucial for sustainable outcomes.

Investing in training programmes to equip women with skills in modern firefighting and forest management is essential. These should include practical techniques such as wildfire prevention, controlled burning and sustainable

harvesting, alongside education on forest policies to enable advocacy for equitable governance.

Creating opportunities for women in sustainable economic activities tied to forest resources is equally important. Community-based enterprises centred on non-timber forest products (NTFPs) such as medicinal plants and organic produce can foster financial independence and ecological preservation. Policies must support access to markets, technology and credit, to ensure viability and community ownership.

Strengthening collaboration among local communities, government bodies and NGOs is vital in order to blend traditional ecological knowledge with scientific practices. Women's insights into biodiversity and resource management should be documented and integrated into conservation strategies, with participatory approaches scaled across regions.

By addressing these priorities, Uttarakhand can fully empower its women as environmental custodians, supporting both forest conservation and resilient communities to effectively combat climate change.



Women leading community-driven afforestation efforts in Uttarakhand. Photo: Harshit Pant

Conclusion

The forests of Uttarakhand owe their resilience and vitality to the tireless efforts of women whose contributions remain the cornerstone of environmental conservation. These guardians of nature, often working without recognition, have safeguarded sacred groves, mitigated wildfires, and revived degraded ecosystems. Their role is not merely supportive, but transformative, as they combine traditional ecological knowledge with grassroots activism to create sustainable solutions.

In high-altitude regions, where men have migrated elsewhere for better opportunities, women remain at the forefront of environmental efforts, combating wildfires, conserving biodiversity, and ensuring the survival of communities and landscapes. These women embody an enduring spirit of guardianship. Their efforts, deeply rooted in cultural reverence, reflect a profound connection to nature — one that transcends mere survival to become

an act of devotion. Protecting these landscapes is not just an ecological duty but a cultural and spiritual commitment for these women. Yet, their critical roles remain undervalued in policy discussions.

To ensure the sustainability of Uttarakhand, it is imperative to sustain its women — by recognizing their contributions, addressing barriers, and investing in their potential. Their knowledge, resilience and leadership must be amplified to craft a future where forests thrive and communities prosper.

Gaura Devi once symbolized the spirit of conservation in the Chipko Movement; today's women in Uttarakhand continue to embody that legacy. By integrating their efforts into conservation policies and practices, they can create an enduring model of ecological balance. When acknowledged and supported, they will lead the way to a sustainable Uttarakhand, a beacon of harmony between humanity and nature.

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