



Progression of Community Forestry Development in the Central Himalayan Region

Akshay Saini¹ • Vidhu Gupta^{1*} • R.C. Sundiryal² • Hem Gairola³ • Vaibhav Saini⁴

¹Department of Environmental Sciences, H.N.B. Garhwal University, Srinagar Garhwal, Uttarakhand, India

²Centre for Himalayan Studies, Sparsh Himalaya University, Doiwala, Dehradun, Uttarakhand, India

³Environmental & Social Activist, Village Kyark, Pauri (Garhwal), Uttarakhand, India

⁴Department of Social Sciences (Agricultural Economics), Dr. Y.S. Parmar University of Horticulture and Forestry, Nauni, Solan, Himachal Pradesh, India

*Corresponding Author Email id: vidhugupta.official@gmail.com

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Abstract: Community Forest Management (CFM) represents decentralized governance model where local communities collectively manage forest resources, often with better ecological and socio-economic outcomes than government-managed regimes. Global evidences from Nepal, Mexico and some areas of China shows that protected land rights together with financial independence and local institution control lead to better forest regeneration and carbon storage capabilities and protection of local livelihoods. The Central Himalayan region of India offers significant case for studying this governance system through the Van Panchayat (VP) system, predates global CFM regimes. Current study synthesizes over 130 peer-reviewed articles, archival sources, government reports, and legislative acts (1920s to 2025) to trace the institutional evolution of CFM and comparatively access its ecological, social, and governance outcomes. Research shows that, despite VPs other customary institutions like Lath Panchayats, Mahila Mangal Dals, Sacred Groves, and newer Community Conserved Areas found operational in this region. Initially, VPs thrived, with better regeneration, conservation outcomes, and successful collective enforcement of rules under Revenue Department oversight, however successive amendments (1931–2012), strengthened Forest Department's control progressively reducing autonomy and increased institutional fragmentation. Today Uttarakhand has total 11,217 Van Panchayats which manage 452,644 hectares, approximately 12% of Uttarakhand's Forest area, making them the most extensive decentralized governance system. However, unless autonomy, balancing contrasting policies with user-friendly guidelines, and institutional recognition of both formal and informal initiatives are restored or taken under a single umbrella policy framework, Uttarakhand's CFM risks surviving only as a symbolic legacy rather than a resilient model of participatory forest governance.

Keywords: Community Forest Management • Uttarakhand Himalayas • Van Panchayats • Lath Panchayats • Decentralized Forest Governance

Introduction

The forests of Uttarakhand serve as the Central Himalaya's ecological and cultural hub. Covering approximately 63.5% of the state's 53,483 km² geographical area (FSI 2023), these forests support water regulation, biodiversity conservation, soil regeneration, carbon sequestration, and rural livelihoods dependent on fuelwood, fodder, grazing, and nontimber forest products (hereafter NTFPs) (Guha 1985). These forests also have deep spiritual and cultural ties, which are embedded in traditional practices and community identity

(Tucker 1982). Throughout the colonial era, expanding state control over timber and revenue overrode local customary rights and traditional governance systems (Guha 1985). As a result of the escalating conflicts between the forest department and communities over access to forest products eventually led to the establishment of Van Panchayats (VPs) under the Van Panchayat Rules of 1931. These institutions became one of the earliest legally recognised models for structured participatory community-based management of forests (CFM) of South Asia, enabling village



communities to regulate forest use, protection, and regeneration through collectively formed rules (Rawat 1991; Agrawal 1996). Over time, Uttarakhand developed a diverse landscape of CFM institutions including VPs, Mahila Mangal Dals (hereafter MMDs), Community Conserved Areas (hereafter CCAs) and traditional Sacred Groves and, Lath Panchayats. Among these, VPs emerged as the most extensive decentralized forest governance system in Indian Himalaya, currently managing approximately 452,644 hectares of forest through more than 11,000 VP Institutions (Van Panchayat Atlas 2024). Several studies have shown that CFM-managed forests have a more heterogeneous canopy structure, better natural regeneration rates and greater rates of carbon sequestration than similar state government managed forests (Somanathan 1991; Pandey and Lodhiyal 2015). However, despite these achievements CFM institutions face increasing institutional and ecological pressures.

The aim of this research is to evaluate the development, governance, and performance of CFM in the state of Uttarakhand, India. It uses a variety of academic literature, policy documents and case studies to explore various aspects of CFM such as the legal reforms, ecological changes and contradictions in governance that have occurred. By situating/explaining the occurrences in Uttarakhand through the context of global debates on devolved environmental governance and legal pluralism, this research will provide guidance for improving the sustainability and resilience of participatory forest management systems that support community well-being in the changing context of the Himalayas.

Methodology

This research study adopts a historical and integrative review approach to examine the evolution, governance structure, institutional context and consequences of Community Forest Management (CFM) in Uttarakhand.

The analysis is based on more than 130 sources of peer-reviewed journal articles, books, govt. reports, policy documents, doctoral thesis, archival records, and other grey literature published between the early twentieth century and forest governance in Uttarakhand. To ensure comprehensive historical and institutional coverage both peer-reviewed and non-peer-reviewed sources were included. Different literature groups with total numbers are represented in Fig 1 showing Distribution of Reviewed Literature (a) Basis of Category (b) Decade-wise.

The study primarily included: (1) Empirical studies on CFM regimes in Uttarakhand. (2) Literature on Colonial and post-independent forest policy governance. (3) Conceptual or theoretical studies on common-pool resources, decentralization, and participatory governance. (4) Case studies on Van Panchayats, JFM Committees, sacred grove, and other customary institutions. (5) Comparative studies from global CFM systems w.r.t., Nepal, China, Latin America, and some parts of Africa.

Historical Trajectory of Forest Governance in Uttarakhand

Uttarakhand has had a complex evolution of forest governance which has evolved through interactions between customary institutions, colonial scientific forestry, and post-independence state-led conservation frameworks. The current structure of Community Forest Management (CFM), especially the Van Panchayat (VP) system, is the result of a long historical transition from localized management of forests to an increase in centralized administrative management of forests (Agrawal 1996). Table 1 gives an overview of each of the historical periods and provides additional analysis in three separate subsections.

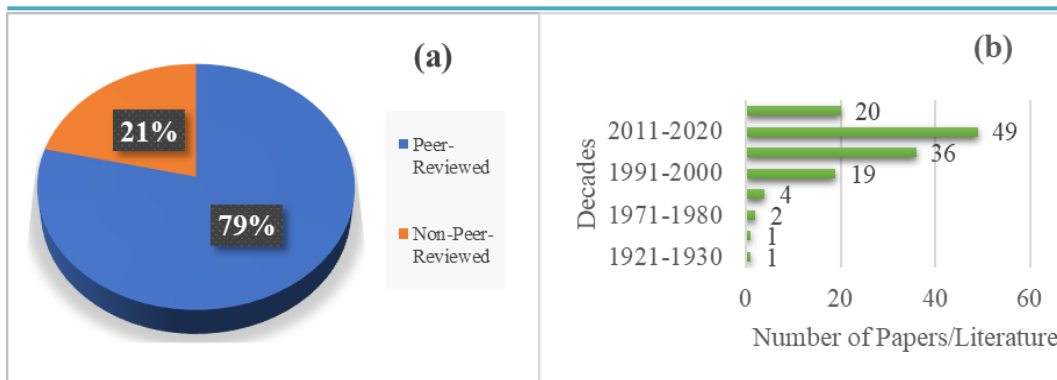


Fig 1:

Distribution of Reviewed Literature (a) Basis of Category (b) Decade-wise distribution of literature on CFM of Uttarakhand

Table 1: Evolution of Forest Governance in Uttarakhand: Institutions, Policies, and Community Impacts

Period	Dominant Governance Regime	Key Institutional Features	Implications for communities
Pre-1815	Customary & Religious Governance	Sacred groves, Lath Panchayats, rotational use	High autonomy, strong stewardship
1815-1864	Early colonial control	Revenue extraction, timber exploitation	Gradual erosion of customary rights
1865-1915	Scientific Forestry	Indian Forest Acts, Forest Classification	Criminalization of local practices
1916-1921	Resistance Phase	Forest Fires, mass protests	Recognition of governance failure
1931-1960	Van Panchayat regime	Community control under Revenue Dept.	Peak decentralization, regeneration
Post-1972	Centralized conservation	FD dominance, legal overlap	Declining autonomy & participation

Pre-Colonial and Customary Forest Management

Prior to the British takeover of the area, forests in Kumaun and Garhwal had been managed by customary institutions that were based on social norms and enforced through caste councils and religious beliefs (Somanathan 1991). The regulation of grazing, lopping, and forest product extraction, was through informal systems such as Lath Panchayats by means of rotation of monitoring, collective

responsibility and social sanctions (Singh 2013); and the sacred groves that were dedicated to deities served to provide culturally protected areas for the conservation of biodiversity and water and the conservation of medicinal species of plants (Anthwal et al. 2010; Negi 2010). These systems had low enforcement costs and provided a relatively high level of ecological resilience and community compliance due to their strong cultural legitimacy (as shown in table 2).

Table 2: Characteristics of Pre-Colonial Forest Governance Systems

Feature	Description
Institutional form	Informal, norm-based
Enforcement	Social sanctions, collective vigilance
Ecological Outcome	High Biodiversity & regeneration
Social Legitimacy	Strong cultural embedding
State involvement	Absent

Colonial Forest Governance and the Rise of Scientific Forestry (1815–1947)

Following the British annexation of Kumaun in 1815, forests increasingly became



instruments of revenue generation and timber extraction, particularly for railway expansion and imperial infrastructure (Tucker 1982; Rawat 1993). The establishment of the Imperial Forest Department in 1864 and enactment of the Indian Forest Acts (1865, 1878, 1927) institutionalized scientific forestry and centralized state control over forest resources (Pathak 2024).

The splitting of forests into Reserved, Protected, and Village Forests brought with it a complete ban on grazing, fuelwood gathering, and lopping, effectively outlawing the ways of earning a living that were still practiced by the local people (Rawat 1991). The 1893 Notification and the forest settlements (1911–1917) led to the displacement of many people, and this caused massive peasant resistance resulted in forest fires of 1916 on a large scale (Pant 1922/Rawat, reprint). The colonial rulers had no choice but to recognize their defeat in governance and hence the Kumaun Forest Grievances Committee (1921) was set up whose recommendations laid the foundation

for India's first formal community forest institution i.e., Van Panchayats in 1931, under the Scheduled District Act, 1874 (Gadgil and Berkes 1991), after examining villagers concerns and grievances. The committee highlighted the complex and rigid character of centralized forestry laws and stringent punishments that was a root cause behind public resentment against these controls.

Post-Independence Centralization and Conservation Paradigms

Postcolonial India inherited most of the colonial regime of centralized forestry, shown in Table 3. Conservation-oriented legislations such as the Wildlife Protection Act (1972) and Forest Conservation Act (1980) further strengthened state control over forest governance (Guha 1985). Although Van Panchayats continued to function, successive amendments to the Van Panchayat Rules (1972, 1976, 2001, 2005, 2012) progressively reduced their autonomy by increasing Forest Department oversight over budgeting, harvesting, revenue sharing, and administrative procedures.

Table 3: Post-Independence Policy Shifts and their Effects on Van Panchayats

Policy/Reform	Intended Goal	Actual Impact
WPA & FCA	Conservation	Community exclusion
JFM	Participation	FD Dominance
VP Rule amendments	Standardization	Loss of Autonomy
FRA 2006	Rights recognition	Institutional exclusion

The introduction of Joint Forest Management (JFM) during the 1990s created additional institutional overlap between community institutions and state agencies, often leading to administrative fragmentation and reduced local decision-making authority. Similarly, despite the Forest Rights Act (2006) recognizing community forest rights nationally, Van Panchayats remained inadequately integrated into its implementation framework in Uttarakhand. Today, despite managing approximately 450,000 hectares through 11,217 VPs (Van Panchayat Atlas 2023), these institutions confront elite capture, declining participation, and legal ambiguity (Ballabh *et al.* 2002;

Hussain *et al.* 2015). The historical trajectory of forest governance in Uttarakhand therefore reflects a gradual transition from community cantered customary governance toward increasingly centralized administrative control, despite continued reliance on participatory forestry frameworks.

Community Forest Management in Uttarakhand: Evolution and Contemporary Models

Community Forest Management (CFM) in Uttarakhand represents a diverse institutional landscape shaped through interactions between customary practices, state policies, and local collective action. The region contains both formal and informal governance systems



including Van Panchayats (VPs), Joint Forest Management (JFM), Mahila Mangal Dals (MMDs), Sacred Groves, Lath Panchayats,

and Community Conserved Areas (CCAs), each differing in legal status, institutional autonomy, and ecological effectiveness.

Table 4: Typology of Community Forest Management Institutions in Uttarakhand

Institution	Legal Status	Period of emergence	Governance nature	Core Objective
Van Panchayats (VPs)	Statutory	1931	Democratic (declining)	Sustainable forest use
Joint Forest Management (JFM)	Executive order	1990s	Bureaucratic-participatory	Regeneration of degraded forests
Mahila Mangal Dals (MMDs)	Informal	Pre-and post-independence	Women-led collective	Subsistence security
Sacred Groves	Customary	Pre-colonial	Cultural-religious	Biodiversity protection
Lath Panchayats	Informal	Pre-colonial	Norm-based	Resource regulation
Community Conserved Areas (CCAs)	Hybrid	1990s onwards	Community-driven	Ecological restoration

This part attempts to put together the working of Van Panchayats, JFM, Mahila Mangal Dals, Sacred Groves, Lath Panchayats, and Community Conserved Areas (CCAs), with their governance structures, strengths, and constraints duly noted and highlighted in Table 4.

Van Panchayats: India's Oldest Formal Community Forest Institution

The Van Panchayats were formed by the Van Panchayat Rules of 1931 and is one of the earliest examples of decentralized forest governance in India that receives legal recognition (Malik and Dixit 2020). Initially, the Van Panchayat operated under the supervision of the Revenue Department with only limited input from the Forest Department,

allowing the community to regulate access to forests; enforce rules; and manage common-pool resources using local elected bodies (Aggarwal 2006) (refer table 5). During its initial decades, the Van Panchayat was generally regarded as being successful in decentralizing governance that helped regenerate forests and supported collective resource management in many areas of Uttarakhand (Rawat 1991; Agrawal 1996). However, the legal changes after independence have resulted in increasing Forest Department controls over how villages manage money, obtain permission to harvest timber and conduct their administration, which has decreased village autonomy (Ballabh et al. 2002).

Table 5: Governance Structure of Van Panchayats under the 1931 Rules

Component	Role
Sarpanch & Committee	Rulemaking & enforcement
Revenue Department	Legal oversight
Forest Department	Technical advice
Community	Resource users & monitors

Despite these constraints on their institutions, the Van Panchayat is now the largest system of decentralized forest governance in Uttarakhand, managing approximately

452,644 hectares of forest through over 11,217 separate institutions (Van Panchayat Atlas 2023) (refer Table 6).

Table 6: District-wise distribution of Van Panchayats (VPs) in Uttarakhand

Sr. No.	District	Number of VPs	Area (ha)	Constituted in		
				CF*	RF*	CF & RF Both
01	Uttarkashi	638	5766.07	557	79	2
02	Tehri	1321	14735.90	1321	-	-



03	Dehradun	195	8513.29	195	-	-
04	Pauri	2165	39419.59	2153	8	4
05	Rudraprayag	505	19106.32	492	8	5
06	Chamoli	852	169346.07	735	94	23
Total VPs in Garhwal		5676	256880.26	5453	189	34
07	Almora	2089	49650.72	2074	15	-
08	Nainital	490	27150.89	433	38	19
09	Pithoragarh	1566	57082.30	1556	4	6
10	Bageshwar	825	39348.28	816	9	-
11	Champavat	571	22531.84	544	3	24
Total VPs in Kumaun		5541	195764.03	5423	69	49
Total VPs in Uttarakhand		11217	452644.29	10876	258	83

(CF*: Civil Forest, RF*: Reserve Forest)

Source: Van Panchayat Atlas, 2024

Empirical evidence indicates that Van Panchayat is more likely to be effective when there are strong leaders, social cohesion and engaged community members (Nagahama et al. 2019).

Joint Forest Management: A Parallel but Contrasting Model

JFM was initiated at a national level during early periods of the 1990s and subsequently expanded to Uttarakhand via World Bank-supported initiatives such as the Uttaranchal Forestry Project (Bhattacharya *et al* 2010), attempting to decentralize forest management. Unlike many of the existing Van Panchayat institutions, JFM initiatives are mostly administered by the Forest Department, which has overall control of planning, implementation, and financial operations. Several studies indicate that the over-

regulation of JFM initiatives by the Forest Department has diminished the institutional legitimacy of JFM and created overlapping administrative structures, causing confusion and weakening the community's ability to govern themselves (Sarin 2001 a). Accordingly, JFM in Uttarakhand is described as being participatory and decentralized in their structure but largely lacking in their actual decentralization. Empirical work documented that in Garhwal and Kumaun districts, JFM was widely regarded as "alienation in the name of participation" or "participation without power" and involved a two-way process without cultural legitimacy. JFM institutions and Van Panchayat institutions in numerous instances overlapped and involved confusion, role duplication, and administrative conflict as shown in Table 7.

Table 7: Comparison of Van Panchayats and Joint Forest Management

Dimension	Van Panchayats	JFM
Legal Foundation	Statutory rules	Executive guidelines
Community authority	Historically High	Limited
FD role	Advisory (earlier)	Dominant
Financial control	Community managed (earlier)	Joint signatory
Cultural legitimacy	High	Low
Long-term sustainability	Proven	Project-dependent

Gendered and Informal Institutions: Mahila Mangal Dals and Sacred Groves

Mahila Mangal Dals (MMDs), which are women-led informal groups, have had a positive impact on conserving and protecting forests based on their use and control of forests where there are no formal organizations to assist. MMDs is governed by local rules and guided by head of the organisation called as "President" or

"Adhyaksha" which with the collective consensus organize rotational closures, prevention of illegal extraction of forests, regulation of the use of forests, and assisting with the restoration of degraded landscapes (Pandey 2010). MMDs have also aided in the prevention of forest fires and the increase of local participation in forest conservation (Sarin 2001, b). In addition, the workings of MMDs



demonstrate that gender equitable governance of community forestry systems is important.

Parallel to these efforts, **Sacred Groves** are also a valuable form of community-based conservation through religious beliefs, rather than legal mandates, these groves are respected because they are considered sacred to local deities such as Hariyali Devi, Nanda Devi, Nagdev, and Mahasu Devta (Shah and Nautiyal 2025). Sacred Groves provide protection to endemic species (i.e., plant species found only within a specific region), possess medicinal plants and herbs, retain moisture in soil, and help with the dispersion of seed (Anthwal *et al.* 2010; Bisht & Bhatt 2011). Furthermore, Sacred Groves provide opportunities for ecotourism and education related to conservation, but the existence of Sacred Groves is being threatened by the expansion of urban areas and the decline of ritualistic activities (Negi 2010;).

Lath Panchayats: Declining Commons Institutions

The Lath Panchayats system precedes formal institutions such as Van Panchayats, which represent one of the earliest forms of informal forest governance in Uttarakhand, rooted in traditional norms. This system required households to take turns in patrolling the forests, marked by the transfer of symbolic wooden stick (Lath) from one household to another, which embodies authority and accountability (Semwal *et al.* 2012; Tiwari and Bhatt 2020). These informal governance structures enforced community regulations

through collective sanctions and seasonal restrictions. These institutions faded away due to lack of legal recognition, market integration, and road infrastructure all of which have facilitated forest exploitation.

Community Conserved Areas (CCAs): Innovative Stewardship at the Local Level

The growth of Community Conserved Areas (CCAs) in Uttarakhand is a developing and community-rooted alternative to state-centric forest governance, embracing sacred groves, rotational closures, traditional Lath Panchayats, and even informal conservation-protection of Reserved Forest sections. These CCAs arise as self-organized responses to forest degradation, biomass scarcity, and state neglect, especially in areas where formal institutions have failed. According to Agarwal (2002) most CCAs were established and led by local communities, often by women's collectives such as MMDs, and operated without continuous external support. Despite differences in legal status, CCAs rely on locally tailored norms, social barriers, and community enforcement mechanisms. Because of their connection to local incentives and traditional practices, CCAs have had a greater overall ecological success rate than state-managed forests (Semwal *et al.* 2012). However, they are still susceptible due to legal ambiguity, a lack of institutional support. The long-term health of CCAs is dependent on policy frameworks that identify, resource, and incorporate grassroots models into larger forest governance systems (Table 8).

Table 8: Comparative Strengths and Weaknesses of CFM Institutions

Institution	Key Strength	Core Weakness
Van Panchayats	Legal Legacy	Bureaucratic control
JFM	Funding access	Weak legitimacy
MMDs	Gender equity	No legal backing
Sacred Groves	Biodiversity protection	Cultural erosion
CCAs	Adaptive governance	Policy neglect

Comparative Evaluation of Central Himalayan CFM with Indian Forest Governance and Global Community Forestry Regimes

Comparative Analysis with State-led Forest Governance in Uttarakhand

Although Community Forest Management (CFM) promotes participatory governance,



recognition of customary rights, and locally adaptive stewardship, forest policies in India have historically emphasized state control, conservation, revenue generation, and bureaucratic authority. Major legislations such as the Indian Forest Act (1927) and the Forest Conservation Act (1980) reinforced centralized governance by criminalizing many customary practices and marginalizing traditional community institutions (Guha 1985; Kumar 2017). In Uttarakhand, these policies significantly weakened traditional systems like the Lath Panchayats and reduced decentralized forest governance. Van Panchayats (VPs), originally envisioned as hybrid customary-statutory institutions, gradually lost autonomy because of overlapping legal frameworks, insecure tenure rights, and increased control by the Forest

Department following amendments to the VP Rules in 1972, 2001, and 2005 (Semwal et al 2012). Although the National Forest Policy of 1988 advocated people's participation, its implementation through Joint Forest Management (JFM) created externally imposed Village Forest Committees lacking the democratic depth and local legitimacy of VPs (Jayalakshmi 2008). Similarly, despite the Forest Rights Act (2006) recognizing Community Forest Resource rights, implementation in Uttarakhand remained weak due to procedural complexities and institutional ambiguities. Comparative evidence therefore indicates that the challenges facing CFM arise not from community inefficiency, but from institutional weakening and policy misalignment, as reflected in Table 9.

Table 9: Comparative Analysis of Community Forest Management (CFM) and State-led Forest Governance in Uttarakhand

Dimension	Community Forest Management (VPs & CCAs)	State-led Forest Governance (FD, JFM, RFs)
Governance Philosophy	Participatory, commons-based, locally embedded	Centralized, bureaucratic, conservation-first
Legal foundation	Van Panchayat Rules (1931-2012), customary norms	Indian Forest Act (1927), FCA (1980), WPA (1972)
Decision Making authority	Village level committees (declining)	FD officials
Role of community	Rights-holders and managers	Laborers, beneficiaries, or consultees
Tenure security	Historically strong, now ambiguous	State ownership dominant
Recognition under FRA, 2006	Not recognized as CFR-managing bodies	Selective and limited recognition
Institutional flexibility	High (customary rules, adaptive norms)	Low (uniform procedures, rigid plans)
Participation quality	Meaningful in early VPs and CCAs	Often procedural and tokenistic

Comparative Analysis with Global Community Forestry Regimes

Global experiences demonstrate that effective community forestry systems generally depend upon secure tenure rights, institutional autonomy, and local control over forest resources. Nepal's Community Forestry Programme is regarded as a successful example of community forestry programme. In Nepal, legally recognized Community Forest User Groups have strong authority for managing the forest resource, determining

revenue use, and making local decisions (MFSC, 2013; FAO 2016). These reforms have had a positive impact on forest regeneration, livelihood security, and strengthening of local institutions (Gilmour and Fisher 1991; Bijaya et al 2016). The Van Panchayat system in Uttarakhand has a longer history than Nepal's Community Forestry Programme but has less operational autonomy than Nepal due to an increasing level of



administrative oversight and control over financial decisions. Similarly, community forestry systems in China and Latin America demonstrate improved economic and ecological outcomes for communities when they have secured resource rights and more flexibility in forest management (FAO 2016). Both of these comparisons illustrate that community forestry will succeed in the long term not only with legal recognition but also true decentralisation, financial autonomy, and institutional accountability. Uttarakhand has one of the oldest community forestry systems in Southern Asia; however, increasing bureaucratic control and fragmented governance continue to limit its potential as an institution.

Outcomes of Community Forest Management in Uttarakhand

In Uttarakhand, Community Forest Management (CFM), particularly through Van Panchayats, sacred groves, and other community-led conservation systems, has generated important ecological, livelihood, and institutional outcomes. Ecologically, several studies indicate that community-managed forests often perform better than state-managed forests in terms of species diversity, regeneration rates, biomass accumulation, and resilience to disturbances such as forest fires (Pandey and Lodhiyal 2015). These achievements are closely linked to local monitoring, traditional extraction norms, and community participation in forest protection. Sacred groves further contribute to biodiversity conservation by preserving endemic and medicinal plant species and supporting ecosystem services such as spring recharge and micro-climatic stability (Thapliyal and Chauhan 2012). From a livelihood perspective, CFM strengthens rural subsistence through regulated access to fuelwood, fodder, leaf litter, and non-timber forest products (NTFPs). Van Panchayats also support supplementary income through the sale of resin, grass, and fuelwood, which can contribute nearly 15–20% of the annual

income of marginal households. Oak-dominated forests, in particular, provide edible and medicinal NTFPs that enhance seasonal livelihood security (Singh et al., 2024). However, the economic potential of these products remains constrained by poor market access, inadequate infrastructure, and restrictive regulations. Institutionally, effective CFM enhances local governance, conflict resolution, and collective accountability. Villages with active leadership, regular meetings, transparent records, and support from NGOs or government agencies generally demonstrate stronger ecological management and institutional performance (Bisht et al 2021; Gupta and Koontz 2019).

Conclusion

This study takes a critical look at the growth and success of different aspects of Community Forest Management in the Central Himalayan region as it relates to different operational structures such as Van Panchayats, Joint Forest Management, MMDs, Lath Panchayats, and Sacred Groves. It has been demonstrated through research that CFM that is based on local legitimacy has delivered better ecological outcomes than other models, including increased carbon sequestration, improved regeneration, and a greater number of species even when there is no legal or institutional support available. Prevailing youth disengagement, out migration and increasing climate stress is further hindering the capacity of forest resilience. Without making necessary legal reforms, CFM in Uttarakhand will become symbolic rather than a powerful pathway for ecological, social and financial empowerment.

Policy and Governance Recommendations

In Uttarakhand, strengthening community forestry requires integrated legal, ecological, financial, and institutional reforms. A formal state-level policy aligned with biodiversity conservation, REDD+ initiatives, and climate adaptation should be developed with simplified procedures and stronger recognition of community rights. Capacity-building



programs focusing on leadership, conflict resolution, transparency, negotiation, and ecological knowledge are essential for effective governance. Ecological restoration should prioritize native broadleaf species such as Oak and Rhododendron to improve resilience and carbon sequestration. Community-led carbon monitoring linked with ecosystem service payments and carbon markets can create incentives for conservation. Additionally, transparent access to restoration funds, district-level training centers, and sustainable NTFFP-based livelihoods, including medicinal herbs, Rhododendron products, and ecotourism, should be promoted.

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