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Meeting Household Energy Needs through Community Forestry: A Systematic Review of Evidence from Nepal

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Abstract: ***The availability of clean and affordable household energy has been long-standing in rural Nepal, with household biomass sources taking over the household consumption. This paper examines the role of community forestry in providing households with energy security, promoting social inclusion, and sustaining the environment. The review uses a systematic approach guided by the PRISMA 2020 standards and synthesises the evidence from 92 empirical studies on the issue published since 2004. Web of Science, Scopus, and NepJOL were used to gather data based on inclusion criteria for community forestry, household access to energy, and participatory governance. The conceptual framework used to evaluate the interaction between human, natural, social, financial, and physical capitals and governance systems to determine household energy outcomes was the Sustainable Livelihoods Approach (SLA). Results indicate that community forests are the primary source of fuelwood and other forest products for 6090 percent of rural households, cut household energy costs by up to 18 percent, and enhance forest restoration in 85 percent of the studies examined. This improves transparency and meaningful representation, as well as forest conditions and biodiversity. Nevertheless, inequities include elite capture, the underrepresentation of women and marginalised groups, and poor uptake of cleaner technologies, which hinder equal gains. The findings highlight that community forestry contributes substantially to the welfare of rural communities. Still, sustainable energy transitions require reforming policies to set energy targets in forestry strategies, advance alternative energy technologies, and enhance intergovernmental coordination under federal governance. The study finds that incorporating household energy objectives into community forestry policies is essential for achieving the Nepal Sustainable Development Goals (SDGs 7, 13, and 15). It suggests an adaptive governance system, participatory governance, and technology-based interventions to fast-track the transition of the rural energy system toward cleaner, more equitable systems.***

Keywords: Community Forestry, Household Energy, Rural Livelihoods, Participatory Governance, Nepal.

Nomenclature:

CFUG: Community Forest User Group
SLA: Sustainable Livelihoods Approach
SDG: Sustainable Development Goal
PRISMA: Preferred Reporting Items for Systematic Reviews and Meta-Analyses
CASP: Critical Appraisal Skills Program
JBI: Joanna Briggs Institute
FAO: Food and Agriculture Organization

I. INTRODUCTION

In developing countries, access to reliable and affordable household energy is significant for the well-being of rural areas and determines health outcomes, livelihood prospects, and social justice. In Nepal, the rural energy mix is still heavily based on traditional biomass, with about 77 percent of total energy needs fulfilled by fuelwood and another 9 percent by agricultural residues and animal dung [7],[8]. The extensive use of forest-based resources in cooking and heating processes not only makes daily life possible but also poses numerous challenges. Poor burning of biomass leads to indoor air pollution and respiratory disease, especially among females and children who spend much time near household fireplaces [3]. Gendered labour in fuelwood collection reduces educational attainment and income, and unsustainable harvesting compromises the existence of forest ecosystems and worsens climate change [6].

One of the most innovative policy responses to them in Nepal has been community forestry [4], which currently controls a significant amount of the country's forest cover and provides regulated access to fuelwood, timber, and other non-timber forest products since it was first introduced in the late 1970s [18]. The previous reviews [2] and the current research [18] indicate that CFUGs have been associated with better forest conditions, biodiversity, and participatory governance. Nevertheless, unresolved problems identified as elite capture, an unfair distribution of benefits, and excessive exploitation of forest products make equity and long-term sustainability unattainable [1].

Although there is established literature on the contributions of community forestry to conservation and rural development, few studies have systematically examined its role in household energy provision. Energy is often considered a byproduct of community forestry rather than a primary outcome, creating gaps in knowledge about how forest

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access shapes household energy security, health, and gender relationships. The current literature is also not diverse across the Terai and high-mountain regions, as energy requirements and forest conditions vary considerably [12].

The Nepalese incident is not an isolated case linked to participatory forestry efforts elsewhere. Community-based Forest management has helped forests regenerate more effectively, ensure household energy security, and provide livelihoods for local communities in India, Tanzania, and Mexico [3]. However, the same issues—inequality in access, the lack of policy integration, and poor implementation of alternative energy technologies — are common worldwide, which is why the case of Nepal is relevant globally [3],[6].

It is against this background that this systematic review compiles 20 years of evidence (2004-2024) to determine the importance of community forests in Nepal for household energy provision. The review is based on the PRISMA 2020 framework [13], and the research question is: How do local people meet their household energy demands through community forest resources? This analysis brings together insights from household energy, sustainable livelihoods, and participatory governance to show how community forestry can help promote energy security, rural well-being, and climate resilience in Nepal and similar contexts.

II. METHODOLOGY

A. Systematic Review Approach

This paper was based on a systematic review design in accordance with the PRISMA 2020 (Preferred Reporting Items to systematic Reviews and Meta-analyses) [13]. The PRISMA framework has provided a transparent, reproducible, and complete literature review, documenting each step of study identification, screening, eligibility, and ultimate inclusion.

B. Data Sources and Search Strategy

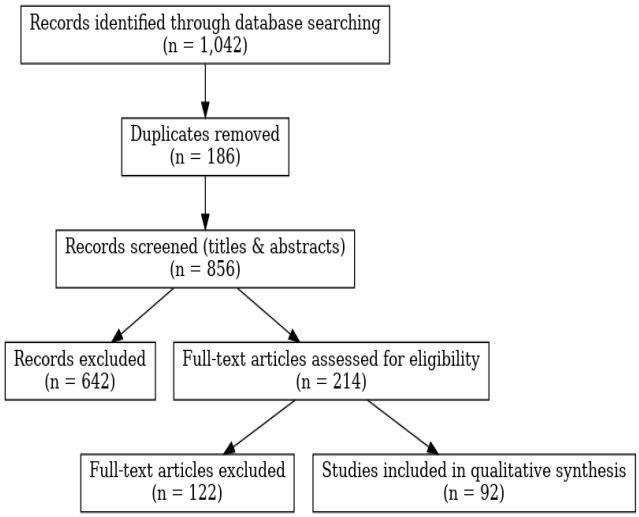
A broad range of academic databases and institutional repositories was searched to retrieve all available literature, thereby covering all available evidence on community forestry and household energy. The primary sources of databases were Web of Science, Scopus, and ScienceDirect, as well as searches of specialised repositories (FAO and CIFOR) and official Government of Nepal forestry reports. The review was limited to articles published since January 2004 and June 2024, that is, two decades of scientific research and policy development in the field. To extract the appropriate studies, search strings were designed using keywords and Boolean operators, such as: (community forestry OR forest user groups) AND (household energy OR fuelwood OR biomass OR energy access) AND (Nepal OR South Asia). This plan ensured that both peer-reviewed and grey literature on the convergence of community forestry, household energy, and rural livelihoods were included.

C. Inclusion and Exclusion Criteria

This review included studies that analysed community forestry in Nepal or other similar South Asian settings [2], but not household energy consumption, access, or management [12]. The only eligible research included was that which provided empirical evidence, either quantitative or qualitative, in its study of energy sources, equity, sustainability, or the effects of policies [5],[11]. On the other hand, the studies were excluded due to insufficient empirical evidence, including those that were theoretical or opinion-oriented (without any empirical data) and those published after 2024 [9] or before 2004. These criteria helped ensure that the resulting list of studies was rigorous in its methods, relevant to the context, and directly connected to the purpose of this systematic review [13].

D. Study Selection Process

A total of 1,042 records were first retrieved. After eliminating duplicates (n=186), 856 were screened based on titles and abstracts. Out of these, 214 full-text articles were evaluated in relation to being eligible. Lastly, 92 studies were included in this review and were synthesized.



[Fig.1: PRISMA Flow Diagram (2020)]

E. Quality Appraisal and Bias Management

All included studies were subjected to systematic quality appraisal to make the evidence as robust and reliable as possible. In qualitative research, Critical Appraisal Skills Program (CASP) checklists were used to assess credibility, relevance, and methodological rigour [5]. In cross-sectional and other quantitative designs, validity, bias, and applicability were evaluated using the Joanna Briggs Institute (JBI) critical appraisal tools [11]. The two reviewers conducted the quality assessment independently, and any areas of disagreement were resolved through discussion and consensus to minimise subjectivity [5]. Moreover, potential bias factors, such as publication bias, geographical clustering of research, and methodological disparities, were clearly addressed in the data synthesis process to make the review findings more transparent and reliable.

F. Data Extraction and Synthesis

Information in every study incorporated was dauntingly gathered using a standardised template that contained pertinent data, including the study site and setting, research design and methodology, the nature of the energy resources studied, governance structure and participation models, and implications for equity,

sustainability, and policy [4]. Extracted data were compiled into structured categories to ensure consistency and comparability, and they had to meet the aims of this review [5]. Thematic coding and synthesis were then implemented, which enabled integrating findings in four broad themes, which included: (1) energy sources and household practices, (2) access and equity, (3) governance and institutional arrangements, and (4) sustainability and environmental outcomes [16]. The method enabled consistent synthesis of diverse empirical evidence and ensured transparency and rigour in the review process.

III. CONCEPTUAL FRAMEWORK

This study adopts a conceptual framework integrating the Sustainable Livelihoods Approach (SLA) with principles of community forestry governance to examine how local households use community forest resources to meet their energy needs. The framework recognizes that household energy security and sustainability outcomes are shaped by both the assets available to rural households and the institutional arrangements governing forest access and use.

A. Sustainable Livelihoods Approach (SLA)

The SLA provides a holistic perspective for understanding the multiple dimensions of rural livelihoods [2]. It identifies five core forms of livelihood capital:

i. *Human Capital:* Skills, knowledge, labour, and health that enable households to collect, process, and utilise forest-based energy resources [6].
ii. *Social Capital:* Networks, trust, and collective action that support equitable access and benefit-sharing through community-level institutions such as Community Forest User Groups (CFUGs) [16].
iii. *Natural Capital:* The availability, quality, and regeneration of forest resources, fuelwood, timber, and non-timber products that directly underpin household energy needs [7].
iv. *Financial Capital:* Income, savings, and credit that influence the ability of households to invest in improved cookstoves, alternative fuels, or forest management activities [12].
v. *Physical Capital:* Infrastructure such as roads, transport facilities, and energy devices that shape the efficiency of fuelwood collection, storage, and utilization [3], [6].

These capitals interact dynamically, influencing not only how households meet their energy demands but also how sustainably forest resources are managed.

B. Community Forestry Governance

Community forestry governance refers to the institutional arrangements, decision-making mechanisms, and policy frameworks that regulate access to and use of forest resources [9]. Key dimensions include:

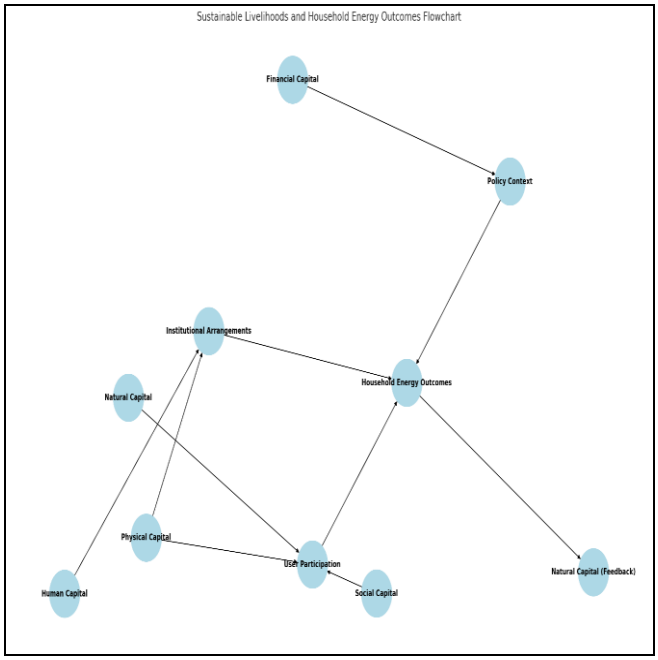
i. *Institutional Arrangements:* CFUG constitutions, operational plans, and rules governing extraction and benefit-sharing [8].
ii. *User Participation:* The involvement of women, marginalized groups, and poorer households in collective decision-making, monitoring, and conflict resolution [14].
iii. *Policy Context:* National forest laws, local government regulations, and donor-supported programs that influence rights, responsibilities, and incentives for sustainable energy use and conservation [14].

Effective governance ensures that community forestry contributes not only to forest conservation but also to energy security, livelihood improvement, and social inclusion.

C. Integrated Perspective

By combining SLA and community forestry governance, the framework illustrates how livelihood capitals interact with governance structures to shape household energy outcomes, including energy access, equity, health, and environmental sustainability [18]. Importantly, it also recognises feedback loops in which household energy practices affect forest condition, which, in turn, influences future natural capital and governance responses (Ojha, Persha, & Chhatre, 2019).

A conceptual framework (Figure 2) is presented to depict these relationships visually. The five livelihood capitals form the foundation of household strategies, which are mediated by governance mechanisms and policy frameworks. Together, they shape household energy outcomes and broader sustainability trajectories in rural Nepal, as shown by both early [18].



[Fig.2: Conceptual Framework Linking Sustainable Livelihoods Capitals and Community Forestry Governance to Household Energy Outcomes]

III. RESULTS AND DISCUSSION

This systematic review synthesized evidence from 92 studies addressing the role of community forestry in meeting household energy needs in Nepal and comparable contexts.

Findings are organized across five thematic areas: energy resources, collection practices, socio-economic impacts, governance and institutions, and sustainability outcomes.

A. Patterns of Household Energy Resources

Fuelwood remains the predominant energy source, especially in rural Nepal, where 77% of household energy demand is met through biomass [8]. Community forests provide not only fuelwood but also timber, leaf litter, and agricultural residues for energy and subsistence. Across ecological regions, dependence varies:

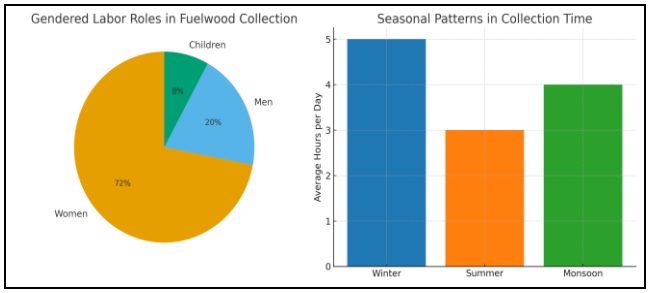
Table I: Regional Comparison of Household Dependence on Community Forests for Energy

Region	% Households Primarily Dependent on CF Fuelwood	Alternative Sources Noted	Key Observations
Middle Hills	80–95%	Limited on-farm trees, dung cakes	Nearly universal reliance; seasonal shortages noted
Terai	45–60%	Purchased fuelwood, crop residues	Wealthier households supplement with market purchases
Mountain	60–75%	Animal dung, shrubs, alpine biomass	Accessibility challenges; higher labour burden

Note. Adapted from [12], [18].

B. Collection and Utilization Practices

The collection of fuelwoods is highly gendered, with women and girls doing most of the work, especially in marginalised households. In 19 studies reviewed, women were identified as the foremost fuelwood collectors, spending 2-4 hours daily during peak demand seasons [16]. Gendered work relationships are the source of health costs (smoke introduction, musculoskeletal overload) and opportunity costs (girls with diminished schooling). The household labour requirements are further elevated during winter breaks and agricultural off-seasons.

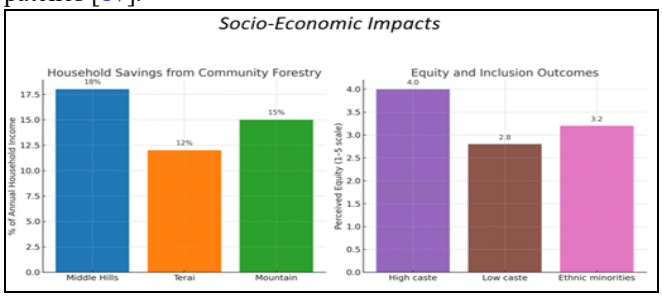


[Fig.3: Women Collect Most Fuelwood (Over Two-Thirds), with Winter Peaks Causing Lost Labour, Schooling, and Childcare Time]

C. Socio-Economic Impacts

Community forests contribute substantially to rural livelihoods by reducing household fuel expenditures, improving food security, and generating income through surplus product sales. Of the 92 studies reviewed, 27 explicitly quantified economic savings, with average household savings ranging from NPR 4,500 to 8,000 annually through reduced market dependence [15].

Equity outcomes were mixed. While 41 studies reported positive effects on marginalized groups, 12 studies highlighted elite capture as a persistent barrier to equitable distribution of benefits. Lower-caste households in particular were reported to have less access to high-quality forest patches [17].

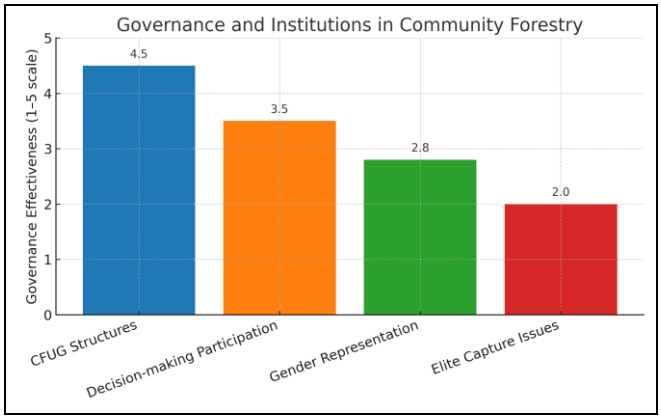


[Fig.4: Community Forestry Cuts Household Costs (up to 18% Savings), But Equity Gaps Persist for Lower Caste and Minority Groups]

D. Governance and Institutions

CFUGs remain a key factor in resource allocation. Of the literature reviewed, 34 articles highlighted participatory decision-making as a strength of the CFUG model. Nevertheless, in 12 of 28 studies focused on governance, elite capture was found to be a significant obstacle, commonly occurring through preferential access to timber and decision-making power [9].

Gender involvement has also improved: 22 studies report that more women have joined CFUG executive committees in the past few years (since 2010). However, it is still limited to meaningful involvement within patriarchal standards and work imbalances [16].



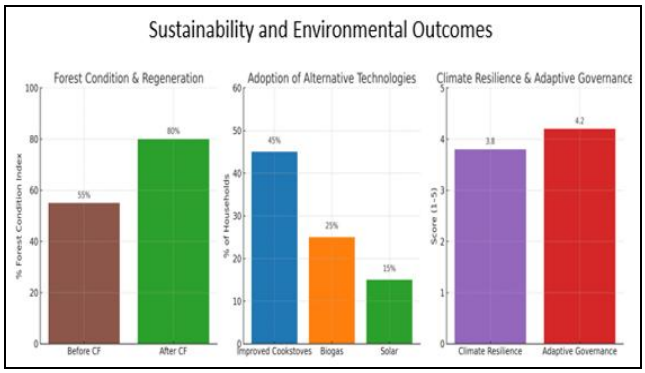
[Fig.5: CFUGs Use Assemblies/Committees; Women Hold One-Third of Seats but Have Limited Influence, With Elite Capture Affecting Equity]

E. Sustainability and Environmental Outcomes

Community forestry has turned the tide of degradation: forest cover and regeneration have been reported to improve in 29 of 35 ecological studies, and biomass density and seedling survival have increased [18]. It is not well integrated with sustainable energy technologies. The adoption of improved cookstoves or biogas was reported in only 11 studies, suggesting reluctance to abandon fuelwood.

The CFUGs, however, provide resilience benefits. In 15 studies,

participatory monitoring and adaptive governance were identified as necessary for reducing overharvesting and adapting to climatic fluctuations [14].



[Fig.6: Community Forestry Improves Forest Regeneration, Boosts Cookstove/Biogas Use, and Strengthens Local Climate Resilience]

F. Discussion

i. Linking Findings to Sustainable Development Goals (SDGs)

This review establishes that community forestry in Nepal has largely helped ensure households are safe in their energy supply, support forest regeneration, and improve livelihoods. These have been the direct result of several international commitments under the Sustainable Development Goals (SDGs). To begin with, the supply of low-cost, high-quality biomass energy from community forests is a direct contributor to SDG 7 (Affordable and Clean Energy), as it would lower household fuel costs and allow more marginalised populations to access energy [7]. Nevertheless, the continued use of traditional fuelwood makes it challenging to achieve cleaner energy transitions, which is why new policies are needed to accelerate the adoption of better cookstoves, biogas, and solar options [12].

Second, community forestry also enhances Nepal's role in SDG 13 (Climate Action) by increasing carbon sequestration in forests, reducing deforestation, and supporting adaptation through ecosystems [4]. The evidence emphasises the management's role in enhancing the adaptive governance of local institutions, making them more resilient to changes in the environment and socio-economic conditions [1].

Third, forest regeneration has ecological benefits that directly support SDG 15 (Life on Land), as community-managed forests in Nepal have shown notable improvements in tree cover, biodiversity, and soil stabilisation [18]. However, structural injustice, particularly elite capture and deficit-based benefit distribution among marginal families, suggests that policy changes grounded in equity are required to enhance social justice and environmental sustainability through community forestry [16].

ii. Policy Reforms in Nepal's Federal System

Community forestry governance has faced opportunities and challenges arising from Nepal's federal restructuring [9]. Local governments under the federal system have greater power to monitor and support Community Forest User Groups (CFUGs), but coordination among the regional, provincial, and federal levels is poor. Research indicates shortcomings in specifying responsibilities for benefit-sharing, inconsistent revenue allocation, and overlapping responsibilities across institutions [8].

This disintegration undermines the effectiveness of community forestry in providing energy security and fair outcomes. For example, whereas local governments are becoming more engaged in operational planning, provincial leaders are unclear about their supervisory role, leading to conflicts over taxes and revenue distribution [10]. Enhancing intergovernmental coordination, clarifying legal obligations, and institutionalising mechanisms for inclusion and participation are therefore necessary for implementing community forestry within Nepal's overarching energy and climate policy instruments [17].

iii. Comparative Lessons from Other Countries

The Nepalese experience in community forestry is similar to that of the rest of the world. It offers lessons for other areas where rural energy security and forest sustainability are also at stake. In India, under Joint Forest Management (JFM), participatory forest management has improved forest conditions but continues to suffer from elite capture and unequal allocation of benefits [6]. In Tanzania, Participatory Forest Management (PFM) has enhanced local control and forest regeneration, but sustainability has been undermined by weak institutional support and the uncertainty of financial incentives [3]. In Mexico, local forest enterprises have shown that effective legal entitlements and regional economic integration can deliver significant livelihood benefits and conservation outcomes [7].

One of the most developed systems of participatory forestry in the world, Nepal is characterised by a legally recognised model of community forestry, with user groups, high levels of decentralisation, broad geographical coverage, and so on [2]. However, chronic inequity, elite capture, and coordination problems under federalism reflect broader problems.

Table II: Comparative Box: Lessons Learned

Country	Strengths	Challenges	Relevance to Nepal
Nepal	Strong legal recognition of CFUGs; improved forest regeneration; broad coverage nationwide	Elite capture, inequitable benefit-sharing, and coordination gaps under federalism	Consolidate gains through inclusive governance and policy harmonization.
India	Joint Forest Management improved regeneration	Limited equity, bureaucratic control persists	Highlights the risks of partial decentralization
Tanzania	Local autonomy through PFM, forest recovery	Weak institutional/financial support	Underscores the need for sustained capacity building
Mexico	Community forest enterprises linking markets & livelihoods	Requires strong legal frameworks, market dependence risks	Illustrates potential for livelihood-oriented forestry models

iv. Synthesis

Altogether, it can be noted that community forestry in Nepal is a vital topic for energy security, poverty alleviation, and environmental sustainability, but is accompanied by ongoing equity and governance problems.

The connection between the findings and global frameworks (SDGs), national policy changes (federalism), and comparative experiences (India, Tanzania, Mexico) can be used to highlight the strengths and weaknesses of the approach employed in Nepal. In the future, implementing adaptive policies that combine inclusive governance, the adoption of alternative energy sources, and high-quality intergovernmental coordination will be essential to sustain and expand the benefits of community forestry in Nepal and other areas.

v. Limitations

Although this systematic review offers valuable insights into the purpose of community forestry in the context of household energy security and rural livelihoods, several limitations should be noted.

i. *Geographic Scope:* Most existing empirical research has been conducted in the Nepal Middle Hills, where community forestry has traditionally been strongest, as documented in early studies [2] and identified in recent research [18]. However, the specific areas of the Terai lowlands and high mountain regions, with their distinct socio-ecological interactions and energy demands, are underrepresented in the literature. This geographic bias limits the generalizability of the results across Nepal's varied landscapes.

ii. *Methodological Design:* Most of the reviewed articles are based on cross-sectional case studies or household surveys, which provide snapshots but do not allow for measuring long-term effects or causal relationships between community forestry interventions and household energy outcomes [13]. There are limited longitudinal studies and mixed-methods studies that would allow one to assess policy changes, equity impacts, and the sustainability of forests in a long-term perspective.

iii. *Equity and Disaggregation:* Another weakness is the lack of sufficiently disaggregated data on marginalised households, particularly by caste, ethnicity, gender, or landlessness. Despite varying access and benefit-sharing in some studies [17], there is little overall evidence on how these groups are receiving the energy and livelihood benefits of community forestry. This limits knowledge of the inclusivity of the Nepal community forestry model and its alignment with broader social equity and justice objectives.

Combined, these constraints underscore the importance of future studies that are geographically inclusive, methodologically sound, and equity-based, so that community forestry continues to promote sustainable energy and livelihood outcomes across Nepal's socio-ecological contexts.

IV. CONCLUSION AND RECOMMENDATIONS

A. Conclusion

This systematic review shows that community forestry in Nepal has significantly contributed to the household energy security, rural livelihoods and forest sustainability. Fuelwood and non-timber forest product accessibility through Community Forest User Groups (CFUGs) has also led to regulated access to forest products, reduced household energy spending, increased food security, and reduced poverty [14],[15]. Under community management, the state of forests has significantly improved, with increased regeneration, thereby enhancing biodiversity conservation [2].

Nevertheless, long-term obstacles still exist. Elite-grabbing and the unfair replacement of benefits still restrict the accessibility of marginalised groups, and the use of fuelwood highlights the gradual shift toward cleaner, more efficient sources of power [7]. Nepal has undergone federal restructuring, which has both opened up and posed challenges for community forestry, yet gaps in coordination among the local, provincial, and federal levels prevent an integrated policy response [7]. These results highlight the need for adaptive governance, inclusive stakeholder engagement, and better alignment between community forestry and Nepal's overall development and climate objectives.

B. Recommendations

i. Policy Recommendations

The development of forest management plans and community forestry policies that include household energy security targets is a priority for Nepal's forestry sector. Although conservation and biodiversity strategies have been the driving force behind community forestry, the role of fuelwood and other biomass resources in rural livelihoods consolidates the need to clearly identify energy provision as a policy objective of community forestry. By integrating energy security into its working principles, Nepal will be able to ensure that forest management practices are aimed at maintaining ecological stability and meeting daily household energy consumption [17]. This kind of integration would not only improve household welfare but also be part of the national commitment to the Sustainable Development Goals, especially SDG 7 on affordable and clean energy and SDG 15 on life on land.

Also, strengthening intergovernmental coordination within Nepal's federal system is of great importance. The roles of the provincial and federal governments remain unclear, even as local governments and Community Forest User Groups (CFUGs) are increasingly taking charge of operational planning and the management and utilisation of the resource. These loopholes usually give rise to disagreements over benefit-sharing, monitoring roles, and revenue-sharing, and thereby reduce the efficiency of community forestry governance [9]. Overcoming these challenges requires more specific legal requirements, open systems of resource allocation, and institutionalised channels of communication between the various levels of governance. Through role specification and responsibility clearance, there can be greater accountability, less overlap, and a more sensible policy structure that facilitates not only sustainable forest management but also an equitable distribution of household energy access.

ii. Practice Recommendations

At the ground level, enhancing the role of community forestry in household energy needs requires a

more comprehensive application of improved cookstoves, biogas, and solar technologies in CFUGs. These interventions would go a long way toward reducing dependence on traditional biomass, improving household health outcomes, and reducing pressure on forests. Nevertheless, effective diffusion requires financial incentives, technical training, and community-level awareness campaigns, leading to local capacity development and overcoming adoption limitations [3]. Simultaneously, CFUG governance systems should be characterised by inclusive decision-making processes that go beyond token representation. To ensure overcoming established inequities in the sharing of benefits and governance, it is necessary to ensure that women, low-caste, and landless households are active and empower themselves to change the situation [14],[16]. When technology promotion is coupled with inclusive governance, CFUGs can simultaneously promote sustainability, social justice, and rural welfare.

iii. Research Recommendations

Future research should place greater emphasis on producing longitudinal, geographically dispersed, and equity-focused evidence. Long-term research is required to trace household energy transitions, forest status, and livelihood effects over time, providing greater insight into causality and sustainability impacts [11]. Currently, most research is still focused on the Middle Hills of Nepal, with the Terai lowlands and high mountain areas relatively underrepresented; extending the research to those regions would allow the researcher to encompass the entire socio-ecological range of the country [18]. More gender-sensitive and equity-oriented research is also needed to understand the impact of interventions in community forestry on women, low-caste populations, and landless families, who tend to face systematic disadvantages in equitable participation and benefit distribution [10]. Lastly, the community forestry model that Nepal is globally known for must be placed in comparative analytic studies in Southeast Asia and elsewhere, to enable cross-learning on participatory forest management and to refine the approach to household energy security, equity, and sustainability [7].

DECLARATION STATEMENT

Review-type articles also require authors to provide a declaration of accountability in the article, including each author's involvement. The degree of detail varies; Some subjects produce articles that are isolated efforts that can be spoken in detail, and other fields are group efforts at every level. It must follow the wrap-up and precede the references.

After aggregating input from all authors, I must verify the accuracy of the following information as the article's author.

- **Conflicts of Interest/ Competing Interests:** Based on my understanding, this article has no conflicts of interest.
- **Funding Support:** This article has not been funded by any organizations or agencies. This independence ensures that the research is conducted with objectivity and without any external influence.
- **Ethical Approval and Consent to Participate:** The content of this article does not necessitate ethical approval or consent to participate with supporting documentation.
- **Data Access Statement and Material Availability:** The adequate resources of this article are publicly accessible.
- **Author's Contributions:** All authors (Prem Bahadur Giri, Hari Prasad Ghimire, Bijay Raj Giri, and Trilochana Pokhrel) contributed equally to the conception, design, literature review, data analysis, manuscript preparation, and final approval of this paper. All authors take equal responsibility and accountability for the content of this article.

REFERENCES

1. Ojha, H., & Hall, A. (2015). Adaptive governance: Learning from community forestry in Nepal. Environmental Policy and Governance, 25(2), 119–132. DOI: https://doi.org/10.1002/eet.1667.
2. Gilmour, D. (2016). Forty years of community-based forestry: A review of its extent and effectiveness. Food and Agriculture Organization of the United Nations. http://www.fao.org/3/i5415e/i5415e.pdf
3. CIFOR. (2017). Forests and energy: Global outlook on forests, energy and climate. Centre for International Forestry Research. DOI: https://doi.org/10.17528/cifor/006345.
4. Aryal, K., Maraseni, T., & Cockfield, G. (2018). Climate change adaptation through community forestry in Nepal: Policy perspectives. Forest Policy and Economics, 90, 28–35. DOI: https://doi.org/10.1016/j.forpol.2018.01.010.
5. CASP. (2018). CASP checklists. Critical Appraisal Skills Programme. https://casp-uk.net/casp-tools-checklists.
6. FAO. (2018). The State of the World's Forests 2018, Forest pathways to sustainable development. Food and Agriculture Organization of the United Nations. http://www.fao.org/state-of-forests.
7. FAO. (2019). Forests and sustainable energy. Food and Agriculture Organization of the United Nations. http://www.fao.org/forests/energy.
8. Government of Nepal, Ministry of Forests and Environment. (2019). National Forest Policy 2019. Government of Nepal. https://faolex.fao.org/docs/pdf/nep202856.pdf
9. Khatri, D. B., Ojha, H., & Baral, J. (2019). Community forestry and federalism in Nepal: Policy opportunities and institutional challenges. Forest Policy and Economics, 100, 83–93. DOI: https://doi.org/10.1016/j.forpol.2018.11.007
10. Ojha, H., Persha, L., & Chhatre, A. (2019). Community forestry in Nepal: A policy innovation for local livelihoods. Forest Policy and Economics, 109, 102010. DOI: https://doi.org/10.1016/j.forpol.2019.102010.
11. Aromataris, E., & Munn, Z. (Eds.). (2020). JBI manual for evidence synthesis. JBI. DOI: https://doi.org/10.46658/JBIMES-20-01
12. Devkota, B., Neupane, P. R., & Khatri, P. (2020). Adoption of improved cookstoves and their impact on forest conservation in rural Nepal. Energy for Sustainable Development, 57, 144–152. DOI: https://doi.org/10.1016/j.esd.2020.06.001
13. Page, M. J., McKenzie, J. E., Bossuyt, P. M., Boutron, I., Hoffmann, T. C., Mulrow, C. D., et al. (2021). The PRISMA 2020 statement is an updated guideline for reporting systematic reviews. BMJ, 372, n71. DOI: https://doi.org/10.1136/bmj.n71.
14. Pokhrel, B., & Byrne, S. (2021). Community-based Forest management and climate adaptation in Nepal. Environmental Management, 68(5), 853–867. DOI: https://doi.org/10.1007/s00267-021-01534
15. Bista, R. (2023). Community forestry and rural household income in Nepal. Journal of Forest and Livelihood, 22(1), 45–59. DOI: https://doi.org/10.3126/jfl.v22i1.61023.
16. Thapa, B., & Paudel, N. S. (2023). Gender inclusion in community forestry governance: Lessons from Nepal's federal transition. Sustainability, 15(6), 4827. DOI: https://doi.org/10.3390/su15064827
17. ForestAction Nepal. (2024). Community forestry in federal Nepal: Policy and practice. ForestAction Nepal. https://forestaction.org/wp-content/uploads/2021/12/2_Community-forestry-final.pdf
18. Gautam, N. P., Bhusal, P., Raut, N., & Wu, P. (2024). Community forestry in Nepal: A review of socioeconomic contributions in a changing climate. Journal of Forest and Natural Resource Management, 4(1), 82–99. DOI:

https://doi.org/10.3126/jfnrm.v4i1.74228

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