EXPLORING THE INFLUENCE OF PARTICIPATORY FOREST MANAGEMENT ON SUSTAINABLE DEVELOPMENT GOALS: A COMPREHENSIVE REVIEW

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Abstract

Participatory Forest Management (PFM), involves collaboration between village communities and the Forest Department to manage forests and foster community development. This study assessed the impact of PFM on Sustainable Development Goals (SDGs), focusing on poverty reduction, food security, health, and environmental sustainability. The effectiveness of PFM in achieving these goals is under recognized. This systematic review investigated the tangible effects of PFM on socioeconomic well-being and environmental sustainability in forest-adjacent communities. Its findings offer insights for policy formulation to enhance the PFM's contribution to sustainable development.

Keywords:- Participatory Forest Management, Sustainable Development Goals, forest-adjacent communities, community development, forest conservation.

Participatory Forest Management (PFM) or Joint Forest Management in India is a collaborative effort between village communities and the Forest Department that is often facilitated by non-governmental organisations. This co-management strategy promotes a symbiotic relationship by emphasising shared benefits and responsibilities. In Kerala, PFM initiatives are organised through Vana Samrakshana Samithies (VSSs) for territorial forest divisions and Eco-Development Committees (EDCs) for sanctuaries and national parks. According to Kerala Forest Statistics 2021,

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there are 427 VSSs and 213 EDCs in Kerala.

In Kerala, Vana Samrakshana Smithies (VSSs) and Eco-Development Committees (EDCs) play vital roles in advancing Sustainable Development Goals (SDGs) 1, 2, 3, and 15. VSSs, established in territorial forest divisions, empower local communities in participatory forest management, fostering

economic empowerment and poverty reduction (SDG 1). Through sustainable resource management, VSSs enhance livelihood opportunities and income generation, aligning with SDG 2 by promoting food security and reducing hunger. Additionally, VSSs contribute to improving access to healthcare services and fostering social cohesion (SDG 3) by promoting community well-being and empowerment. Similarly, EDCs,

Table 1

Division wise number of Vana Samrakshana Samithies (VSSs)

Sl. No.	Territorial Division	No. of Vana Samrakshana Samithies
1	Thiruvananthapuram	21
2	Thenmala	11
3	Punalur	17
4	Konni	23
5	Ranni	34
6	Achencoil	6
7	Kottayam	14
8	Kothamangalam	11
9	Munnar	11
10	Marayoor	25
11	Mankulam	10
12	Malayattoor	18
13	Vazhachal	11
14	Chalakudy	13
15	Thrissur	22
16	Palakkad	13
17	Mannarkad	17
18	NilamburSouth	15
19	NilamburNorth	31
20	Nemmara	17
21	NorthWayanad	17
22	SouthWayanad	19
23	Kozhikode	17
24	Kannur	20
25	Kasargode	14
		427

Source: Kerala Forest Statistics 2021

Table 2

Division wise number of Eco Development Committees (EDCs)

Sl. No.	Wildlife Division	No. of Eco Development Committees
1	Parambikulam	7
2	Aralam	3
3	Silent Valley	8
4	Wayanad WL	18
5	Peechi	12
6	Thiruvananthapuram WL	33
7	Shendurney	10
8	Idukki	9
9	MunnarWL	27
10	Periyar East	46
11	Periyar West	40
TOTAL		**213**

Source: Kerala Forest Statistics 2021

operating in wildlife divisions, facilitate biodiversity conservation and habitat protection (SDG 15) by involving communities in forest conservation efforts, thereby preserving terrestrial ecosystems and supporting life on land. Together, VSSs and EDCs exemplify effective community-led approaches in achieving multiple SDGs, ensuring sustainable

2. Statement of the Problem

This study aimed to assess the effects of Participatory Forest Management (PFM) on Sustainable Development Goals (SDGs) within forest-adjacent communities. An important goal of PFM is to improve the livelihood and make development of its adjacent communities. Despite widespread adoption of PFM initiatives, there is little understanding of their effectiveness in addressing key SDGs such as poverty reduction, food security,

health, and environmental sustainability. The study intends to fill this gap by investigating tangible effects and influence of PFM practises on the socioeconomic well-being and environmental sustainability of local communities, thereby providing valuable insights for policy formulation and implementation.

3. Scope of the Study

This study focuses on assessing the impact of Participatory Forest Management (PFM) initiatives on Sustainable Development Goals (SDGs) in forest-adjacent communities. It examines four key SDGs Goal 1: No Poverty, Goal 2: Zero Hunger, Goal 3: Good Health and Well-being, and Goal 15: Life on Land, aiming to understand how PFM practices contribute to broader sustainable development objectives. This research encompasses PFM initiatives in Kerala, India, as well as beyond India, to

provide a comprehensive analysis of the effectiveness of PFM in different contexts. It evaluates the tangible effects of PFM on the socioeconomic well-being and environmental sustainability of local communities by considering factors such as livelihood improvement, food security, health outcomes, and biodiversity conservation.

4. Significance of the Study

The significance of this study lies in its exploration of how Participatory Forest Management (PFM) impacts Sustainable Development Goals (SDGs) within communities neighbouring forests. Despite the widespread adoption of PFM, there's a limited understanding of its effectiveness in addressing key SDGs like poverty reduction, food security, health, and environmental sustainability. This research aims to bridge this gap by examining the tangible effects of PFM on the socio-economic well-being and environmental health of local communities. The insights gained from this study can inform policymakers, practitioners, and stakeholders in formulating and implementing policies that promote sustainable development and forest conservation.

5. Objectives of the study

1. To evaluate the impact of participatory forest management on forest adjacent communities to attain SDG1- No Poverty.

2. To analyse the influence of participatory forest management in achieving SDG 2- zero hunger in forest adjacent communities.

3. To identify the influence of participatory forest management in SDG3- Good health and well-being of forest dependent communities.

4. To evaluate the implications of participatory forest management in attaining SDG15- Life on land.

6. Methodology

This study employs a systematic review methodology, drawing on secondary sources such as scholarly articles, reports, and relevant literature. The researcher gathered secondary data from Kerala Forest Statistics, Google Scholar, and other publications. Furthermore, conducted a field visit and gathered information. Conversations with forest officers are also held. Through rigorous examination and synthesis of secondary data, it aims to elucidate the efficacy of Participatory Forest Management (PFM) in fostering Sustainable Development Goals (SDGs). This approach seeks to provide insights into the extent to which PFM contributes to SDG achievement by analysing existing research findings.

7. Sustainable development goals in Indian Scenario

The Sustainable Development Goals (SDGs) for India provide a comprehensive framework for addressing a wide range of socioeconomic and environmental issues. The 17 SDGs aim to achieve a balance between economic growth, social inclusion, and environmental sustainability. This study focuses on the following SDGs:

1. **No Poverty (Goal 1):** India has made progress toward eradicating poverty, but it still faces significant

challenges due to its large population and socioeconomic disparities. Goal 1 focuses on eradicating all forms of poverty by ensuring universal access to basic resources, social protection systems, and sustainable livelihoods.

2. **Zero Hunger (Goal 2):** Food insecurity and malnutrition remain major issues in India, particularly among marginalised communities. Goal 2 sought to eradicate hunger, achieve food security, improve nutrition, and promote sustainable agriculture. Initiatives like the National Food Security Act and various agricultural development programmes seek to address these issues.

3. **Maintaining good health and well- being (Goal 3):** The Indian healthcare system faces numerous challenges, including inadequate infrastructure, limited access to healthcare services, and a high disease burden. Goal 3 strives to secure healthy lives and promote well-being for all ages, with objectives of minimising maternal and child mortality, combating communicable diseases, and achieving universal health coverage.

4. **Life on Land (Goal 15):** Deforestation, habitat degradation, and biodiversity loss endanger India's vast biodiversity and forest resources. Goal 15 aimed to protect, restore, and manage terrestrial ecosystems, such as forests, in order to resist biodiversity loss and promote ecosystem resilience.

Initiatives like afforestation, wildlife conservation, and community-based natural resource management help to achieve this goal.

In India, specific efforts have been made to achieve these objectives. For example, programmes like the National Rural Employment Guarantee Act (NREGA) and the Pradhan Mantri Awas Yojana (PMAY) seek to alleviate poverty and provide housing for the poor. Similarly, the National Health Mission (NHM) aims to improve healthcare access and delivery, while the National Mission for Sustainable Agriculture (NMSA) promotes sustainable agricultural practises. Furthermore, conservation initiatives like Project Tiger and Project Elephant aim to protect India's iconic wildlife species and habitats, which contribute to Goal 15. These coordinated efforts demonstrate India's commitment in meeting the SDGs and promoting sustainable development in a variety of sectors.

8. Findings

1. Impact of Participatory Forest Management on Forest Communities for SDG 1: No Poverty

This section examines the impact of PFM on poverty reduction within forest communities, aligning with Sustainable Development Goal 1: No Poverty. The major findings are:

- Participatory forest management boosts income and reduces poverty by empowering communities economically through sustainable resource management.

- Access to forest resources under PFM schemes enhances livelihood

opportunities, especially in regions where forests are a primary income source.

- Secure tenure rights provided by PFM enable sustainable forest management, leading to increased household income and decreased poverty levels.

- PFM fosters social cohesion and collective action, strengthening communities' resilience to economic challenges.

- Communities engaged in PFM show higher levels of household income and reduced dependence on external sources of income.

- Collaborative forest management enhances social networks and institutions, facilitating resource pooling and mutual support mechanisms.

- PFM initiatives contribute significantly to poverty reduction by promoting economic empowerment, improving access to resources, and fostering social capital within forest communities.

2. Impact of Participatory Forest Management on Forest Communities for SDG 2: Zero Hunger

This section investigates the impact of PFM on Zero Hunger (SDG 2) in forest communities, focusing on various aspects of food security and nutrition. The key findings are:

- Participatory forest management promotes sustainable farming practices, leading to increased food

production and improved nutrition in forest communities.

- Communities integrate food crops with tree cultivation through PFM, enhancing food security and dietary diversity.

- Access to wild foods and NTFPs is enhanced under PFM, which is crucial for supplementing diets and ensuring food security in remote areas.

- Local engagement in forest management increases the availability and equitable distribution of wild foods, improving nutritional outcomes.

- PFM initiatives reduce reliance on food aid by providing opportunities for livelihood diversification, such as NTFP harvesting and eco-tourism.

- Forest-dependent communities generate additional income through PFM activities, enabling them to purchase food and improve their diet.

- PFM significantly contributes to achieving zero hunger by promoting sustainable agriculture, increasing access to wild food, and diversifying livelihoods within the forest communities.

3. Influence of Participatory Forest Management on Forest Communities for SDG 3: Health and Well-Being

The following section evaluates the impact of PFM on SDG 3: Health and Well-Being within forest communities, focusing on key aspects such as healthcare

access, environmental health, and social well-being. Its significant findings are:

- Participatory forest management enhances access to healthcare services in rural forested areas, improving community well-being and forest conservation efforts.

- PFM initiatives promote sustainable forest management practices that indirectly benefit the health and well-being of forest communities by enhancing environmental health and biodiversity conservation.

- Community-led reforestation and watershed protection activities under PFM contribute to improved water quality and a reduced risk of waterborne diseases.

- PFM fosters social cohesion and community empowerment, leading to better mental health and well-being among forest communities.

- Collaborative decision-making and resource management in PFM initiatives strengthen social networks and support systems, promoting overall well-being in forest-dependent communities.

- Participatory Forest Management significantly impacts the health and well-being of forest communities by improving healthcare access, environmental health, and social cohesion.

4. Implications of Participatory Forest Management (PFM) for SDG 15: Life on Land

The impact of PFM on life on land aims to examine the role of PFM in conserving biodiversity and protection of wildlife and adjacent communities. The major findings are:

- Participatory forest management plays a crucial role in conserving biodiversity and protecting terrestrial ecosystems, aligning with SDG 15 objectives.

- Involving local communities in forest management helps reduce deforestation, habitat degradation, and biodiversity loss.

- Sustainable resource management under PFM preserves diverse plant and animal species, enhancing the health and resilience of terrestrial ecosystems.

- PFM encourages sustainable land use practices, restoring degraded forest areas, and mitigating land degradation.

- By empowering local communities, PFM facilitates the adoption of sustainable forestry practices like agro-forestry and soil conservation, promoting ecosystem restoration.

- Forests managed through PFM act as carbon sinks, sequestering carbon dioxide and mitigating climate change impacts, supporting SDG 15 targets.

- PFM initiatives improve forest resilience to climate-related disturbances through fire prevention, restoration, and community-based disaster risk reduction.

- Participatory Forest Management significantly contributes in achieving

SDG 15 by promoting biodiversity conservation, sustainable land use, and climate change mitigation.

9. Suggestions

Based on the above findings, here are some suggestions for further action:

• **Enhancing Participation and Capacity Building:** Encourage greater involvement of forest communities in decision-making processes related to forest management. This may be accomplished through capacity-building initiatives that focus on improving their awareness of sustainable resource management techniques, as well as their rights and responsibilities.

• **Strengthening Access to Healthcare Services:** Invest in improving healthcare infrastructure and services in rural forested areas to ensure better access to healthcare for forest-dependent communities. This may include establishing mobile health clinics, training local healthcare workers, and providing essential medical supplies.

• **Promoting Sustainable Agriculture and Livelihoods:** Support initiatives that promote sustainable farming practices and livelihood diversification opportunities within forest communities. This could involve providing training in agro-forestry techniques, promoting the cultivation of nutritious food crops, and facilitating access to markets for forest products.

• **Conservation and Restoration Efforts:** Invest in conservation and restoration efforts to protect biodiversity and restore degraded forest areas. This may include funding community-led reforestation projects, implementing habitat restoration programmes, and enforcing regulations to prevent illegal logging and habitat destruction.

• **Climate Change Adaptation and Mitigation:** Develop and implement climate change adaptation strategies that enhance the resilience of forest ecosystems and communities to climate-related disturbances. This could involve supporting community-based initiatives for fire prevention, drought management, and natural disaster preparedness.

• **Promoting Social Cohesion and Well-Being:** Foster social cohesion and community empowerment through initiatives that promote collective decision-making, knowledge sharing, and mutual support among forest communities. This may include organising community events, establishing support networks, and providing training in conflict resolution and communication skills.

• **Policy Support and Collaboration:** Advocate for policies that support participatory forest management and align with the objectives of the Sustainable Development Goals. This may involve collaborating with government agencies, non-governmental organisations, and other stakeholders to develop and implement policies that prioritise community engagement, environmental sustainability, and social equity.

By implementing these suggestions, stakeholders can work towards maximising the positive impact of participatory forest management on the well-being of forest communities and the conservation of forest ecosystems,

ultimately contributing to the achievement of the Sustainable Development Goals.

10. Conclusion

Participatory Forest Management (PFM) has emerged as a powerful strategy for addressing multifaceted challenges within forest communities and advancing various Sustainable Development Goals (SDGs). PFM initiatives promote economic empowerment, sustainable agriculture, healthcare access, and biodiversity conservation in order to address poverty, hunger, health, and environmental sustainability issues. However, effective implementation and equitable benefit distribution are critical to maximising PFM's impact on SDGs. Given its multifaceted impact on community well-being and ecosystem health, PFM is an essential tool for promoting sustainable development and ensuring the long-term resilience of forest ecosystems and livelihoods.

References

1. Adhikari, B., & Goldey, P. (2010). Social capital and its "downside": The impact on sustainability of induced community-based organizations in Nepal. World Development, 38(2), 184-194.

2. Agrawal, A., & Ostrom, E. (2001). Collective Action, Property Rights, and Decentralization in Resource Use in India and Nepal. Politics & Society, 29(4), 485-514.

3. Charnley, S., & Poe, M. R. (2007). Community Forestry in Theory and Practice: Where Are We Now? Annual Review of Anthropology, 36(1), 301-336.

4. Chazdon, R. L. (2008). Beyond Deforestation: Restoring Forests and Ecosystem Services on Degraded Lands. Science, 320(5882), 1458-1460.

5. Kerala Forest Department. (2021). Kerala Forest Statistics: Prepared by the Statistics Wing, Forest Head Quarters, Thiruvananthapuram.

6. Myers, S. S., Gaffikin, L., Golden, C. D., Ostfeld, R. S., Redford, K. H., Ricketts, T. H., Turner, W. R., & Osofsky, S. A. (2013). Human health impacts of ecosystem alteration. Proceedings of the National Academy of Sciences, 110(47), 18753-18760.

7. Ndoye, O., Awono, A., Schreckenberg, K., Tabuna, H., & Eyebe, A. (2014). Forests, food and livelihoods: how trees and forests contribute to sustainable livelihoods in Cameroon. International Forestry Review, 16(3), 282-294.

8. Ribot, J. C., Agrawal, A., & Larson, A. M. (2008). Recentralizing while decentralizing: How national governments reappropriate forest resources. World Development, 36(1), 109-124.

9. Sunderlin, W. D., Angelsen, A., Belcher, B., Burgers, P., Nasi, R., Santoso, L., & Wunder, S. (2015). Livelihoods, forests, and conservation in developing countries: An overview. World Development, 68, 1-14.

10. Wunder, S. (2001). Poverty alleviation and tropical forests-what scope for synergies? World Development, 29(11), 1817-1833.