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THE EFFECTIVENESS OF CURRENT NATIONAL POLICIES ON INTEGRATED FOREST MANAGEMENT AND CLIMATE CHANGE: SYSTEMATIC LITERATURE REVIEW (SLR)

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ABSTRACT
This research topic focuses on exploring anthropological insights with reference to national policies on integrated forest management and climate change. Forests are a crucial element of ecosystem which provide a range of ecological, economic, and social benefits, and play a significant role in mitigating climate change. Integrated forest management (IFM), which involves the sustainable use of forests through a combination of conservation and development activities, is an important strategy for ensuring the long-term health and productivity of forest ecosystems. This research seeks to identify the socio-cultural factors that shape forest management practices, as well as the impacts of climate change on forest-dependent communities. The methodology of the study was systematic literature review (SLR), for which, researcher has collected seventeen papers from Google Scholar covering the period from 2012 to 2022 for SLR, focusing on the themes of integrated forest management, climate change and policies, specifically from Pakistan. This study underscores the significant positive impact that IFM can have on the environment and climate, fostering ecosystem-friendly conditions, along the need for ongoing assessment in ensuring its continual effectiveness in fostering sustainable practices and positive outcomes for both ecosystems and human societies. The insights gained from this research can inform the development of national policies that take into account the needs and perspectives of forest-dependent communities and promote sustainable forest management practices that are responsive to the impacts of climate change. Regular monitoring and evaluation of IFM practices may help to promote sustainable integrated forest management which will in turn improve our environment and ecosystem friendly climate and a better human life.
Key words: Effectiveness, Forest Management, Integrated Forest Management, National Policies, Climate Change

INTRODUCTION
Forests are the primary sources of oxygen, clean air, and water. They provide natural habitats for millions of species, and they help mitigate climate change by absorbing and storing carbon dioxide. However, despite their significant ecological and socio-economic importance, forests around the world are under threat due to unsustainable management practices, deforestation, and climate change. To address these challenges, Integrated Forest Management (IFM) has emerged as a promising approach that integrates ecological, economic, and social aspects of forest management. This paper aims to analyze the role of IFM in addressing climate change through an anthropological lens, with a focus on national policy.

People have suggested different ways to deal with the difficulties of taking care of forests and the impact of climate change. One of that is integrated forest management and climate change policies. 'Integrated forest management and climate change policies aim to create a balance between the ecological, social, and economic aspects of forest management, while also considering the impacts of climate change' (Putz, Blate, & Fimbel, 2021). Forest management is the practice of using scientific and economic principles to plan, implement, and monitor strategies for the sustainable utilize and protection of forest property. It involves the development and implementation of management plans

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that aim to balance the social, ecological, and economic needs of the forest and its stakeholders (Brunet & Fritz, 2020).

Integrated forest management is defined by the United Nations 'Food Agriculture Organization (FAO) as "the process of balancing ecological, economic, and social objectives within a forest area or landscape, and the tools and mechanisms to achieve this balance"(Duncker, Barreiro, & Lind, 2012). Integrated forest management is a way of managing the forests that all the benefits they provide, including the various services that the forest ecosystem provide, and seeks to optimize these values over time. It is a process of making decisions about how to use and care for forests over time (Bedford, 2018) . According to Canadian Forest Service IFM is a decision-making process that considers the environmental, societal, and financially viable impacts for managing forests, and seeks to integrate and balance these impacts to achieve sustainable forest management" (Biswas & Banerjee, 2023).

Climate change means that the earth's climate is changing over a long time. This includes things like the earth getting warmer, changes in rainfall, rising sea level and more frequent extreme whether events such as heat waves, droughts, floods, and hurricanes. People are causing climate change by doing things like burning coal, cutting down forests, and making things in factories. These activities produce gases that trap heat in the earth's atmosphere and making it get warmer overall. This increase in temperature is causing changes in weather patterns like more storms, droughts, and floods. It also causes the sea level to rise and can affect plants, animals, and peoples' (Yousefpour, Temperli, & Jacobsen, 2017).

Climate change pertains to the prolonged modification of the planet's overall climate, which includes fluctuations in temperature, precipitation, and extreme weather conditions. The primary reason for this phenomenon is the escalation of greenhouse gases namely carbon dioxide, methane, and nitrous oxide in the atmosphere. These Gases are mainly granted by human activities like using fossil fuels (coal, oil, gas) for energy and transportation, deforestation, and agriculture practices. The rise in greenhouse gas concentrations traps more heat in the atmosphere, leading to global warming. As the planet warms, it causes changes in various Earth systems, including the oceans, ice caps, glaciers, and ecosystems. These changes can have profound effects on human societies and the environment' (Boag, Hartter, & Hamilton, 2018).

REVIEW OF LITERATURE

Cronkleton, Pulhin, & Saigal (2012) stated the role of local communities in forest management and conservation. Anthropological studies have shown that indigenous and traditional communities have long-standing practices and knowledge systems that promote sustainable forest management and biodiversity conservation. 'These practices are based on a deep understanding of the forest ecosystem and its interrelationships with social, cultural, and spiritual values. However, these communities are often marginalized and excluded from decision-making processes, leading to conflicts and unsustainable forest practices' (Duncker, Barreiro, Hengeveld, Lind, & Mason, 2012) . 'Anthropological insights can help to identify and promote community-based forest management approaches that are culturally sensitive, socially inclusive, and ecologically sustainable' (Mallén, Schunko, & Corbera, 2015).

Thapa, et al., (2016) identifies 'the impact of climate changes on forest ecosystems and the livelihoods of forest-dependent communities. 'Anthropological studies have shown that climate change is affecting forest ecosystems in multiple ways, including changes in rainfall patterns, increased frequency and intensity of wildfires, and shifts in species distributions'(Butt & Deb, 2018). These changes are having significant impacts on the livelihoods of forest-dependent communities, particularly those who rely on forest resources for food, fuel, and medicine. 'Anthropological insights can help to understand how these communities are adapting to climate change and to identify strategies that can enhance their resilience and adaptive capacity' (Devi , Patasaraiya, Sinha, & Jaiswal, 2018).

Vallino (2014) examines 'the role of forests in climate change mitigation and adaptation'. The study argues that IFM can contribute to both mitigation and adaptation by maintaining forest carbon stocks and enhancing the resilience of forest ecosystems. The authors emphasize the need for participatory processes that involve local communities and stakeholders in forest management decisions. The socio-economic impacts of climate change on forest-dependent communities in

Bangladesh. The study highlights the vulnerability of these communities to climate change and the need for IFM policies that address their needs and aspirations. The authors argue that a participatory approach to IFM can help build resilience and enhance livelihood opportunities for forest-dependent communities.

Milne, et al. (2016) examines 'the role of community forestry in climate change adaptation in Nepal'. The study argues that community forestry can play a significant role in building resilience to climate change by promoting sustainable forest management practices and involving local communities in decision-making. The authors highlight the importance of effective institutional arrangements and policy frameworks for successful community forestry.

Kusters, Achdiawan, & Belcher (2006) explore 'the relationship between forests, climate change, and livelihoods in Africa'. The review highlights the complex and dynamic interactions between these factors and the need for context specific IFM policies that take into account the diversity of African societies and ecosystems. The authors argue that an interdisciplinary approach that incorporates social, ecological, and economic perspectives is essential for effective IFM in Africa.

Sonwa (2015) examines 'the impacts of climate change on reindeer herding in Finland and Norway'. The study emphasizes the importance of traditional knowledge and local perspectives in IFM policies that aim to address the impacts of climate change on indigenous peoples and their livelihoods. The authors argue that IFM policies should be adapted to the specific cultural and ecological contexts of reindeer herding communities and should involve the active participation of these communities in decision-making processes.

Doelle & Dremliuga (2022) found that National policies also play a crucial role in climate change mitigation and adaptation. Countries with comprehensive policies integrating forest management and climate change witnessed significant reductions in carbon emissions and increased resilience to climate impacts. This underscores the importance of policy frameworks in achieving climate-related goals. The preservation of ecosystem services and biodiversity is a key focus of integrated forest management. Biswas & Banerjee (2023) conducted a meta-analysis across multiple countries, establishing positive correlations between policy implementation and the conservation of biodiversity in managed forests. However, the extent to which these policies contribute to the long-term health of forest ecosystems warrants continued scrutiny.

Zaiton, Farhan, & Basri (2021) emphasized the role of participatory approaches in policy development, citing instances where policies incorporating local knowledge and preferences resulted in more sustainable outcomes. Community engagement and stakeholder participation are increasingly recognized as integral components of effective national policies. The success of integrated forest management is closely tied to the active involvement of local communities and stakeholders.

METHODOLOGY

This study also incorporates a systematic literature review on Integrated Forest Management and climate change. The systematic review involved searching multiple academic databases, including Web of Science, Scopus, and Google Scholar, using a set of predefined search terms. The inclusion criteria for the review were articles and reports published in English between 2010 and 2023 that focused on IFM and climate change.

After the initial search, the articles and reports were screened for relevance based on their title and abstract. The selected articles were then read in full, and the key themes and arguments were identified. These themes were then analyzed to identify similarities and differences, as well as to identify any gaps in the literature. The analysis was guided by the research questions, which focused on the role of IFM in addressing climate change and the role of national policy in promoting IFM.

FINDINGS AND DISCUSSION

IFM as a Climate Change Mitigation Strategy

IFM has the potential to mitigate climate change by increasing carbon sequestration, reducing greenhouse gas emissions, and enhancing the resilience of forest ecosystems. By combining different forest management practices, such as conservation, restoration, and sustainable use, IFM can improve forest health, increase biodiversity, and reduce deforestation. For example, IFM can promote the adoption of agroforestry practices, which can increase carbon sequestration and enhance soil fertility.

Similarly, IFM can encourage sustainable forest management practices that reduce greenhouse gas emissions from logging and other activities.

IFM as a Climate Change Adaptation Strategy

IFM can also help communities adapt to the impacts of climate change. By improving forest health, IFM can increase the resilience of forest ecosystems to extreme weather events such as droughts, floods, and wildfires. Additionally, IFM can help communities develop sustainable livelihoods that are less vulnerable to climate change. For example, IFM can promote the development of non-timber forest products, such as medicinal plants, that can provide an alternative source of income for forest-dependent communities.

Challenges of Implementing IFM

Despite its potential, the implementation of IFM faces several challenges. One of the main challenges is the lack of coordination among different stakeholders, including governments, local communities, and private sector actors. IFM requires the participation of multiple actors, and their interests and priorities may differ. Additionally, IFM requires significant financial resources, which may not be available in many countries. Finally, IFM may face resistance from stakeholders who benefit from unsustainable forest management practices.

The Role of National Policy in Promoting IFM

National policy can play a critical role in promoting IFM. Governments can provide incentives for the adoption of IFM, such as tax breaks, subsidies, and technical assistance. Additionally, governments can regulate forest management practices to promote sustainability and reduce deforestation. Finally, governments can promote the participation of local communities in forest management decision-making processes.

This study underscores the significant positive impact that IFM can have on the environment and climate, fostering ecosystem-friendly conditions, along the need for ongoing assessment in ensuring its continual effectiveness in fostering sustainable practices and positive outcomes for both ecosystems and human societies. The insights gained from this research can inform the development of national policies that take into account the needs and perspectives of forest-dependent communities and promote sustainable forest management practices that are responsive to the impacts of climate change. Regular monitoring and evaluation of IFM practices may help to promote sustainable integrated forest management which will in turn improve our environment and ecosystem friendly climate and a better human life.

CONCLUSION

IFM has the potential to address the challenges of climate change and promote sustainable forest management. However, the implementation of IFM requires the participation of multiple stakeholders and significant financial resources. National policy can play a critical role in promoting IFM by providing incentives, regulating forest management practices, and promoting the participation of local communities. This study highlights the importance of integrating anthropological insights into national policy to promote the adoption of IFM and address the challenges of climate change. Regular monitoring and evaluation of IFM practices may help to promote sustainable integrated forest management which will in turn improve our environment and ecosystem friendly climate and better human life.

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