

Modeling Social Trust in Forest Resources Management: A Case Study in Wild Celery Habitat of Zagros Forests

Alireza Jafari: M.Sc. Student, Department of Forestry and Forest Economics, Faculty of Natural Resources, University of Tehran, Iran. jafarialireza140155@gmail.com

Mohammad Avatefi Hemmat: Assistant professor, Department of Forestry and Forest Economics, Faculty of Natural Resources, University of Tehran, Iran. avatefi@ut.ac.ir

Saeed Langarudi: Associate Professor, Faculty of Social Sciences, System Dynamics Group, University of Bergen, Norway. saeed.langarudi@uib.no

Introduction

This study investigates the dynamics of social trust within local communities engaged in participatory forest management in the Zagros forests, particularly focusing on wild celery habitats. Wild celery (*Kelussia odoratissima* Mozaff.), a valuable medicinal and culinary herb native to the Zagros Mountains, plays a crucial role in the livelihoods of local communities and contributes to the region's biodiversity. Social trust, a cornerstone of social capital, plays a pivotal role in facilitating cooperation and collective action, essential for sustainable natural resource management, including the conservation of wild celery habitats. The study aims to understand the factors influencing social trust and its impact on the conservation and management of forest resources.

Methodology

A mixed-methods approach was employed, combining quantitative surveys and qualitative interviews to explore the factors influencing social trust and its impact on forest management practices. Data were collected from local communities in the Zagros forests, specifically the Keluseh village, west of Isfahan Province of Iran, where wild celery habitats are prevalent. Non-random purposeful sampling was used to select informants based on their knowledge and involvement in forest resource management. Semi-structured interviews were conducted with 106 informants, including community members, representatives, Islamic Council, elders, and government officials. Focus group discussions were used to gather information from groups of participants, facilitating discussions and interactions. Content analysis was used to identify key themes and concepts within the interview data. Causal loop diagrams (CLDs) were developed to visualize the relationships between variables and understand the dynamics of social trust in the community.

Key Findings

The study reveals a complex interplay between social structures, decision-making processes, and local rules in shaping social trust within the Keluseh village, a rural community in the Zagros forests of Iran. The study underscores the importance of social trust in conserving the wild celery species, which is a valuable economic resource for local communities. Traditional management system in Keluseh village, based on community-based principles, has proven effective in conserving wild celery habitats and ensuring sustainable resource use. The local community's knowledge and practices of sustainable resource management, passed down through generations, have contributed to the preservation of wild celery habitats. Social trust, rooted in shared identity, participatory decision-making, and a sense of social justice, is essential for sustainable forest resource management in this specific context.

The strong sense of shared identity and social cohesion among community members, rooted in their common ancestry and shared experiences, fosters trust and cooperation. The involvement of all stakeholders in decision-making processes enhances trust and promotes a sense of ownership over village's traditional territory. Open communication and transparency among community members and institutions build trust and ensure that all voices are heard. Perceived fairness in the distribution of resources and benefits among the shareholders and non-holders is essential for maintaining social trust and preventing conflicts in the village. Locally developed and evolved informal rules, rather than formal regulations, play a significant role in shaping social trust and effective governance. Democratic decision-making processes, open

communication, and the social status of representatives contribute to building and maintaining social trust. Trust in local rules and institutions promotes adherence to these rules, ensuring their effectiveness. Disruptive behavior from individuals seeking personal interests can undermine social trust and hinder collective action. Weak governance and lack of accountability can erode trust in institutions and lead to conflicts. Overexploitation of forest resources especially wild celery, and other non-timber forest products can create tensions and conflicts, eroding social trust. The traditional social structure of the Keluseh village, based on kinship ties and hierarchical relationships, influences social trust. The participatory decision-making process, involving representatives elected by community members, contributes to building trust and promoting collective action. Developing and enforcing clear, fair, and enforceable local rules maintaining trust, and ensuring equitable resource utilization. Finally, past experiences, such as successful collective action or conflicts over resource access, shape the level of trust within the community.

Discussion

The findings highlight the intricate interplay between social structures, decision-making processes, and local rules in shaping social trust. A strong foundation of social trust, built on factors like shared identity, effective participation, and a sense of social justice, is essential for sustainable management of the wild celery habitat. The stability of the socio-ecological system investigated in the village of Keluseh depends on the social trust of the members. The informal rules developed and evolved through a democratic process among local stakeholders create an effective governance structure for forest resources and institutionalize social trust. The democratic nature of the process of selecting representatives, their close relationship with shareholders, open communication, and the social cohesion between community members contribute to building and maintaining social trust. Conversely, disruptive individuals seeking personal interests can undermine social trust and hinder collective action. The traditional management system in Keluseh village, a body of advanced and complex institutional rules, has proven effective for community-based natural resource management. This system has evolved through trial and error and is one of the reasons for the remaining valuable resources, such as wild celery in the area. The sustainability of natural resources depends on understanding the subtleties of social-ecological systems and respecting them.

Conclusion

This study demonstrates the critical role of social trust in sustainable forest resource management. By fostering social trust through participatory decision-making, effective governance, and addressing disruptive influences, communities can enhance their ability to conserve and manage natural resources. The findings provide valuable insights for policymakers and practitioners seeking to promote sustainable forest management practices in similar contexts.

Keywords: Causal loop diagrams (CLDs), Informal institutions, Non timber forest Products (NTFPs), Participatory management, Social trust, Social-ecological systems, Zagros forests.