

Natural Resources and Shared Management: Opportunities and Challenges



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Introduction

In 2019, National Forest officials approved the El Yunque National Forest Revised Land and Resource Management Plan. The new El Yunque plan replaces a previous one that had been in place since 1997 and will guide the forest's management for the next 15 years. Emphasizing ecological conservation and sustainable use of forest resources, the plan also promotes incorporating different groups and activities into forest management. The current plan aims to use forest management to improve the social and economic sustainability and wellbeing of the communities surrounding El Yunque, the eastern region of the island, and Puerto Rico.

“This Plan differs from the previous plan by focusing on an integrated vision of ecological, social, and economic sustainability and connectivity to local communities.” (EYNF 2019)

The El Yunque plan is based on shared management practices that promote inclusion, participation, and

collaboration with stakeholders, as well as monitoring and learning from the results of management strategies. It therefore promotes creating partnerships among different groups — residents, communities, landowners, municipal planners, other local government agencies, nongovernmental organizations (NGOs), scientists, and the private sector, among others — for the development and implementation of projects that promote the sustainable use, management, and monitoring of El Yunque's resources. The plan integrates characteristics and elements of various approaches to resource management (see **Box 1** for specific examples). Although managers have implemented similar management approaches in other parts of the world, and even in Puerto Rico (especially co-management), these approaches are new to El Yunque National Forest and to many of the forest's stakeholders.

In this fact sheet, we summarize the factors that facilitate participation and the development and successful implementation of projects incorporating shared management of natural resources and also the

Box 1. Natural resource management approaches

ADAPTIVE MANAGEMENT

recognizes ecosystem complexity and promotes natural resource management by experimentation and learning (“learning by doing”), monitoring, evaluating, and incorporating results into future management actions (Allen and Garmestani 2015, Walters and Holling 1990).

CO-MANAGEMENT

involves the sharing and fair distribution of management functions, responsibilities, decision-making powers, rights, and benefits among different stakeholders when managing a natural resource or an area (Berkes 2009, Borrini-Feyerabend and others 2007).

ADAPTIVE CO-MANAGEMENT

integrates elements of adaptive management and co-management. It promotes flexibility and adaptability in the management of natural resources and relies on the collaboration of stakeholders interacting at different scales. Adaptive co-management also facilitates learning and reflection during the management process (Folke and others 2002, Olsson and others 2004).

factors that limit or hinder participation and implementation. This analysis is based on the findings of a literature review of case studies implemented in 35 countries (Ramos-Echevarría and others 2023). These case studies included projects in species conservation, land-use planning, land restoration, protected area management, riverine zone management, tree plantations, agroforestry, and ecotourism. Most of the stakeholders involved were community groups, but some projects included government agencies, NGOs, environmental groups, farmers, ranchers, private landowners, academia, and the private sector. In this fact sheet, we generally are referring to communities when we mention stakeholders, but this term also covers other groups as well.

These findings can help implement the current management plan for El Yunque and are useful for any person, organization or group interested in resource management from participatory and collaborative perspectives.

Key Findings

Factors that encourage participation in shared management of natural resources

- Knowledge of the ecosystem and natural resources and the factors that influence them.
- Knowledge of co-management programs and training in the processes required for project implementation.

- Clearly defined goals and objectives in the resource management plan or initiative. These goals should be achievable, flexible, and adaptable to any changes that may occur.
- Identification of common interests, aspirations, concerns, and needs among stakeholders.
- Establishment of monitoring measures and evaluation indicators for the plan that are relevant to stakeholders, not just to the agency in charge of the plan.
- Incorporation of multiple types of knowledge in resource management (e.g., scientific, technical, and traditional) and involvement of local groups in research projects about the ecosystem and resources being managed.
- Collaboration with community leaders that can help with recruiting other community members for resource management initiatives.
- Collaboration with external groups (e.g., NGOs, extension agents) who can serve as mediators, facilitators, or trust-builders among the stakeholders.
- Promotion of an environment of trust, honesty, and respectful communication among the groups involved, creating an atmosphere in which all parties can express their opinions and points of view, share their experiences, offer ideas, and reach consensus.
- Real and meaningful participation and decision-making by the participating groups.
- Availability of funds for project implementation and monitoring.

- Economic incentives to encourage participation, thus contributing to the economic and human well-being of participants.
- Incentives (other than economic) for participation – training, leadership skill development, and access to ecosystem resources.
- Fair and equitable distribution of benefits obtained from resource management programs or initiatives.
- Success stories resulting from shared-management initiatives that also reflect and discuss challenges.

Factors that limit participation in shared management of natural resources

- Lack of knowledge of the factors affecting ecosystem resources or the interdependence between resources and their benefits.
- Lack of stakeholder knowledge regarding shared management initiatives.
- Lack of stakeholder understanding of processes and procedures (i.e., legal or administrative) related to shared management.
- Lack of transparency in the design and implementation of the management plan.
- Lack of clearly established goals and objectives in the management plan.
- Focus on resource protection rather than resource use in the management plan.
- Differences in opinions and priorities among stakeholders regarding the resources to be managed.
- Different views regarding the types of knowledge to incorporate into management initiatives (e.g., technical-scientific or cultural-traditional).
- Unequal participation and dominance of some groups over others, leading to exclusion of opinions, ideas, and recommendations.
- Lack of consideration of the ideas, opinions, and recommendations of the different stakeholders.
- Inability to address stakeholder needs or concerns.
- Lack of economic and other kinds of incentives for participation.
- Unequal opportunities for participation and for economic and logistical support for some communities and residents.
- Disparity in the distribution of responsibilities, rights, and benefits among stakeholders.
- Lack of economic resources to provide continuity to projects.
- Prevalence of top-down management approaches, where the agency maintains control over decision-making.
- Little or no institutional flexibility when faced with unexpected situations or necessary changes to the plan.
- Bureaucracy and institutional obstacles associated with the development and implementation of resource management initiatives.
- Lack of effective communication between groups.
- Use of highly technical vocabulary and information in management plans.
- Lack of coordination among agencies or participating groups.
- Lack of agency staff experience and training to interact and work with communities.
- Lack of recognition for the contributions made by stakeholders in the plan's development and the implementation of initiatives.
- Unfulfilled promises made by management agencies to stakeholders.
- Existing tensions, given historical contexts and previous relationships between groups (e.g., between agency and communities).

Conclusion

The factors that facilitate or limit participation and collaboration in shared natural resource management are diverse. These factors are related to processes in the planning and design phase, as well as in the implementation and follow-up of such initiatives. Issues related to inclusion, equity, communication, trust relationships, responsibilities, rights, benefits, power relations, decision-making, knowledge, learning, flexibility, and adaptability were recurrent in

the evaluated case studies. Therefore, these factors must be considered and addressed in order to achieve positive results and meet the outcomes established in natural resource management efforts.

Each resource management initiative is unique and takes place in a unique location and in a

particular social, cultural, political, economic, and environmental context. Yet, the experiences and results of shared management initiatives and projects in different parts of the world can help guide the implementation of the El Yunque management plan and other initiatives elsewhere.

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For more information

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