
TECHNICAL BRIEF

Linkages Between Participatory Natural Resource Management and Democratic Outcomes: A Review of the Evidence



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Executive Summary



Effective and equitable governance arrangements are key elements of environmental programs. Participatory natural resource management (PNRM) can provide more effective and sustainable outcomes for natural resources and people by ensuring that the needs and values of local resource users are reflected in rules and regulations, thus resulting in stronger support and better compliance. Scholarly reviews have examined the links between inclusive, democratic decision-making, conservation, and social and ecological outcomes. But no comprehensive assessments have focused on how PNRM affects democratic outcomes more broadly. This evidence review addresses that knowledge gap by exploring the following questions:

1. What conditions have linked PNRM, positively or negatively, to democratic outcomes?
2. How has PNRM been linked to equity and empowerment, particularly for women, Indigenous Peoples, and marginalized groups?
3. What is the nature, extent, and reliability of the evidence base on these questions? Where do knowledge gaps exist and what kinds of questions require further investigation?

The relationship between PNRM and democracy is of particular importance to the U.S. Agency for International Development (USAID). In 2020, USAID launched the Environmental and Natural Resource Management Framework (ENRM) to ensure that Agency investments integrate environmental considerations across all sectors. The ENRM framework notes that effective implementation requires “strong and inclusive governance structures and capacities at the local and national level.” Global norms and commitments—like Free, Prior, and Informed Consent (FPIC); the governance principles of Reducing Emissions from Deforestation and Forest Degradation (REDD+); and Sustainable Development Goal 16 for Peace, Justice, and Strong Institutions—increasingly reflect these governance concerns. PNRM can help align program activities with these standards.

This review employs systematic evidence synthesis methods to evaluate the links between PNRM and impacts on democratic outcomes. Covering the period 2005–2020, a search yielded 7,202 results (including articles, reports, and other types of research literature). After assessing these results for relevance at title and abstract, we examined the full texts of 645 potentially relevant articles. Of these, we identified 151 relevant articles from which we characterized meta-data to better describe the distribution and extent of the evidence base. We supplemented our search with qualitative observations on key findings, including changes in civil society interactions, formal and informal institutions, and state-society relations, as well as effects on gender equality and social inclusion.

Most studies examined PNRM impacts on users and manifestations of power and rules within natural resource management (NRM) systems. Fewer studies explored PNRM impacts on civil society and institutions outside of the immediate intervention. Many studies did examine the quality of the institutions that govern NRM systems and how users held those systems to account. The evidence review also found fewer articles that explicitly focused on issues of equity and empowerment for women and marginalized groups (only 29 percent of the entire evidence base). Most studies tended to examine the distribution of impacts within a single community or using a single lens, without disaggregating potential differences across specific groups.

Most of the articles discussed PNRM impacts and mechanisms based on qualitative and mixed methods field research. While few used explicit causal analysis, the depth and extent of the empirical evidence base allowed us to identify common enabling conditions for positive democratic outcomes and important constraints linked to suboptimal or negative outcomes.

Enabling Conditions for Positive PNRM-Democracy Linkages

ORGANIZATIONAL SUPPORT AND COALITIONS FOR CHANGE:

PNRM operates in a contested space between the commitments of state authorities to empower local resource users, the often-flawed implementation of those commitments, and the efforts of resource users and communities to ensure their participation and influence in NRM. Although often promoted for economy and efficiency, PNRM is also fundamentally about power and politics, and encompasses the iterative process of making institutions more inclusive and resource outcomes more equitable.

For many communities, organizational capacities, technical expertise, and material resources are in short supply. Government efforts to address these gaps are consistently inadequate. Many cases of positive PNRM-democracy linkages document the crucial role that non-governmental organizations (NGOs) can play in filling the “implementation gap” that characterizes the early stages of PNRM. Local NGOs with experience and credibility frequently help communities organize, identify priorities, clarify agendas, and develop leadership and advocacy skills. NGO partners also often have contacts and knowledge that help to facilitate communication and bridge relationships with government agencies and donors. While there are examples of successful endogenous PNRM in areas with limited government interaction, most instances of effective PNRM involve communities receiving assistance from the nongovernmental sector that strengthens their capacity for collective action.

While participatory norms are important, economic, political, and institutional needs lead governments to turn to local co-management institutions as partners to help maintain or restore threatened natural resources. A shared imperative among communities and governments to solve natural resource challenges of access, use, and sustainability drives cooperation and

collaboration. Positive linkages between PNRM and democracy are strengthened when the political space for PNRM is increased or made more predictable by supporting laws and regulations such as land tenure or other resource rights. In other cases, windows of opportunity arise from the emergence and election of political parties that support grassroots democracy.

As it evolves, PNRM is likely to significantly increase social capital and the density of social networks among civil society actors concerned with resource-related issues like education, income generation, empowerment of women and youth, and peace and conflict. In some cases, pre-existing social capital from cultural bonds or vocational associations may provide collaborative experiences that translate into new forms of cooperation within PNRM. Women’s social networks are especially effective in amplifying the participatory effects of PNRM.

In these favorable circumstances, PNRM can establish collaboration among a broader range of actors, including communities, civil society, and government agencies. Government interactions with communities overlap with but go beyond natural resources, including justice systems, economic development, women’s rights, and health and education. These relationships often develop synergies and amplify demonstration effects that contribute to positive democratic outcomes.

POLITICAL EVOLUTION, CONFLICT MITIGATION, AND CUSTOMARY INSTITUTIONS:

The evidence base shows that the evolution of PNRM is non-linear and subject to periods of breakdown, grievances, reorganization, and policy and regulatory reform. With time and resources, however, the institutional evolution and adaptation of PNRM produces downstream effects that feed into broader democratic developments, as has occurred in countries like Kenya, Tanzania, Namibia, India, Nepal,

and Brazil. We can see these effects at all scales and in areas such as sectoral reforms, citizen rights for participation, property rights, and national policies for decentralization and local government.

In situations of political crisis (e.g., Nepal and Timor-Leste), PNRM has sometimes filled an institutional vacuum to provide stability and mitigate conflict. In other cases, such as national parks in Latin America and Africa, stakeholders perceived PNRM to be trustworthy and transparent, which helped create political spaces conducive to dialogue, negotiation, and conflict reduction.

Issues of land rights and access and use of natural resources in and around Indigenous lands are often contentious. These recurrent challenges highlight the need to better understand how formal and traditional governance institutions can work together. The expectations of formal and customary authorities about the type and adequacy of participatory processes, as well as their relationships to other levels of governance, often diverge. Studies in countries like Brazil, Bolivia, and Indonesia indicate that PNRM can help to bridge these divides and find innovative ways to integrate customary practices within multilevel governance.

TEN ENABLING CONDITIONS FOR PNRM LINKAGES TO POSITIVE DEMOCRATIC OUTCOMES

- 1** Developing or strengthening communities' internal capacities for collective action by engaging early organizational support from local NGOs (or government agencies).
- 2** Facilitating and supporting local NGOs (or government agencies) in bringing together actors from formal and customary institutions and other stakeholders to engage in dialogue and problem-solving.
- 3** Encouraging recognition by government authorities and partners that it is in their political and institutional interests to work collaboratively with communities to solve NRM problems.
- 4** Fostering alliances among communities or with regional and national environmental organizations for advocacy and mobilization around environmental (and non-environmental) issues of shared concern.
- 5** Capitalizing on political windows of opportunity that increase the political space for PNRM, including legal reforms that empower local communities, or political parties that come to power based on grassroots support.
- 6** Supporting progressive increases of social capital (often building on pre-existing social capital), with expanding social networks and diversification of government relationships.
- 7** Increasing inter-community linkages among women's groups (sometimes building on trading networks) based on strong social ties and shared problem-solving.
- 8** Retaining or repurposing customary institutions of Indigenous Peoples and local communities to work with formal institutions in nested, multiscale governance.
- 9** Bolstering political demonstration effects of PNRM innovation and successes that lead to replication and scaling of grassroots democracy.
- 10** Providing the time and resources necessary to establish PNRM credibility and legitimacy, making possible longer-term institutional development through experiences with failures, resistance, learning, and adaptation.

Constraints with Linkages to Suboptimal or Negative Democratic Outcomes

INCOMPLETE OR FLAWED DECENTRALIZATION:

The evidence review documents that PNRM is also associated with various suboptimal or negative outcomes, often as a consequence of interactions with existing power structures and norms. There are many mechanisms by which elites maintain their prerogatives, through both visible power (such as formal rules and decision-making procedures) and hidden power (like controlling who occupies decision-making bodies and what gets on the agenda). This asymmetrical division of rights and responsibilities between government officials and local communities often means that resource users are burdened with heavy operational responsibilities, while elite officials and their bureaucratic allies control strategic decisions over land use, long-term resource planning, and revenues. Weak implementation of PNRM due to incomplete or flawed decentralization is a key factor contributing to suboptimal or negative linkages to democratic outcomes.

ELITE POWER IN NEW INSTITUTIONAL FORMS:

The institutional changes and intended shifts in power associated with PNRM present both challenges and opportunities for influential actors at all levels, many of whom maneuver to advance their interests. New decision-making bodies are often dominated by men with the education, language skills, and donor connections that make them favored choices. Conversely, women, who often lack these advantages, are frequently excluded from executive committees and other positions of power. Politically savvy actors “scale jump” to insert themselves into newly established sites of power that allow them to continue to exert influence. These elite machinations detract from the devolution of power

that is meant to produce democratic outcomes in PNRM interventions.

REPRODUCING PATRIARCHY AND EXCLUSIONARY NORMS:

Poor outcomes in PNRM are not only linked to flaws of higher-level governance or structural power. Local socio-cultural norms also may run counter to meaningful participation and inclusion. Many articles describe examples of local, systematic constraints on women’s opportunities to express opinions, make decisions, and assume leadership roles. Quotas for women’s participation are not uncommon in PNRM arrangements, but many factors reduce their practical effects. Limitations on women’s assets and ownership rights often reduce their power and influence. Expectations about daily work tasks, along with child-rearing obligations, contribute to women’s time poverty and both create and intensify barriers to full engagement. With unequal representation, women often receive fewer benefits. While advances in women’s roles in PNRM are sometimes noted, local cultural norms outside of environmental governance often make improvement efforts an exercise in “bargaining with patriarchy.”

Groups marginalized by ascriptive identity or class also face forms of exclusion. Even when marginalized groups are factored into decision-making, dominant community groups may not solicit or consider their input and may ignore their capacities and preferences. Restrictions on resource use to promote conservation may disproportionately impact lower castes and classes, who have limited influence on decisions related to their labor and the distribution of benefits. However, when PNRM decision-making committees include these groups, they agree on natural resource rules that are more favorable to poorer resource users.

FAILURE TO ALIGN GLOBAL ENVIRONMENTAL GOALS WITH LOCAL CULTURE AND GOVERNANCE:

PNRM intersects with governance at multiple scales. This phenomenon is evident in the interventions that external actors promote to achieve goals related to climate change, conservation, and sustainable natural resource use. International institutions and global environmental groups support measures like REDD+ and implement them in cooperation with national governments, relevant ministries, provincial leaders, and local communities. The evidence shows that tensions often arise between the environmental goals of external actors and the multifaceted livelihood and cultural priorities of communities. Historical legacies, intra-community social and political rifts, and

competing understandings of environmental goals and economic justice can lead to miscommunication and missteps that produce suboptimal or negative democratic outcomes.

External actors may be tempted to circumvent these complications by either working with compliant elites at different scales or by creating new, project-specific institutions. Newly created local committee groups or organizations may be designed to meet project requirements for expertise and managerial efficiency. NGOs may take on areas of coordination and oversight. But these apparent expediencies may displace or disrupt the normal functioning of local government and the mandated responsibilities of elected officials.

EIGHT CONSTRAINTS ON PNRM WITH LINKAGES TO SUBOPTIMAL/ NEGATIVE DEMOCRATIC OUTCOMES

1 Decentralization of NRM by central government authorities is incomplete or flawed, with key powers of decision-making retained by elite decision-makers and government agencies.

2 Decentralization of NRM is motivated by the preferences of donors and other external actors, with local elites seeking to benefit from political support, patronage, and rent-seeking opportunities.

3 Obligations for NRM implementation are transferred to local communities without the proportionate transfer of necessary resources, while elites control key decision-making and women and marginalized groups are further disadvantaged.

4 New governance arrangements under decentralization create “new institutional elites,” who are upwardly accountable to higher level government, but not downwardly accountable to local communities.

5 As a form of resistance to the new distribution of power, dominant political actors engage in “scale-jumping” to reassert their power in new institutional niches at different scales.

6 External actors supporting international environmental initiatives fail to take into account national political dynamics and the complexity of local communities, leading to miscommunication and conflict.

7 Patriarchal gender norms in local communities limit women’s participation, voice, and decision-making power in NRM committees, undermining democratic practices and sidelining women’s contributions to rule-making and conflict management (both of which show women performing better than men).

8 Socio-cultural norms limit the participation, voice, and decision-making of individuals deemed of lower caste or class, depriving them of input on decisions related to their labor and benefits.

Knowledge Gaps

There is a clear evolution in the discussion of PNRM over the time frame covered by the evidence review (2005-2020), with a growing emphasis on institutions and power, more detailed discussions of devolution and decentralization, greater attention to the complexity of policy and legal regimes, and a widespread acknowledgement of the need to take more explicitly into account the impact of PNRM on women and marginalized groups.

Although the evidence base on links between PNRM and democratic outcomes has grown, knowledge remains relatively shallow in many areas. While this review aimed to capture the full range of PNRM interventions and democratic outcomes, it is not exhaustive and, thus, lays a foundation for synthesizing knowledge and trends on these relationships. Key aspects of enabling conditions that warrant further attention include:

- Roles of local NGOs in bridging relationships.
- Recognition by government authorities that PNRM is favorable to their political interests.
- Mobilization by communities or alliances that advance their interests.
- Integration of customary institutions into multilevel governance.

Few articles disaggregate impacts across racial and ethnic categories, demographics, age groups, or gender. While interventions often consider women in project design, and some articles include statements about gender inequality, relatively few systematically examine impacts on women. This knowledge gap limits future design and adaptation of PNRM to better serve women and marginalized groups and to provide safeguards against exacerbating existing problems and inequities.

The evidence review identified key aspects of political and socio-cultural constraints that deserve further attention, including:

- Conditions that empower communities in multi-level governance relationships.
- Actions to help PNRM interventions avoid elite capture of new institutions.
- Strategies for women and marginalized groups to leverage PNRM to resist exclusion.
- Implementation of global environmental goals that account for complex local realities.

While democracy is a multifaceted process that evolves over time, most of the evidence base looks at relatively limited time frames and rarely connects PNRM interventions to broader political contexts. The literature would be strengthened by longitudinal research that seeks to understand PNRM as a series of democratic experiments that are both conditioned by and reveal the fault lines and accomplishments of national political systems.

Implications for Programming

Some form of PNRM is used to implement key aspects of the entire suite of environmental programming: forests, fisheries, wildlife, parks, rangelands, climate mitigation, climate adaptation, and land and resource governance.

PNRM also has links to many important issues and components of democratic governance. The evidence review produced the following examples of positive linkages with democratic governance:

- New models of government-community collaboration (Southeast Asia, Honduras).
- Influence in national debates (Amazon in Brazil, reconciliation in Timor-Leste).
- Village governance improvements (Tanzania).
- Increased women's participation and improvements in rule compliance (India, Nepal).

- Political representation of Indigenous interests and rights (Indonesia, Bolivia).
- Sectoral reforms (Namibia).
- Political crisis management (Nepal).
- Conflict resolution (Colombia, Ghana).
- Democratic local practices in non-democratic states (Vietnam, Cambodia).

Conversely, cases examining links between PNRM and suboptimal or negative democratic outcomes illustrated challenges to democratic performance. These areas warrant careful forethought in programming:

- Persistent elite power despite decentralization (Zambia, Botswana, Mexico, Bangladesh).
- Transfer of responsibilities without resources (Indonesia, Mexico, Tanzania).
- Elite capture of institutional reforms (Cameroon, Senegal).
- Gendered norms in community institutions (Uganda, Kenya, Bolivia, Mexico, etc.).
- Socio-cultural norms linked to marginalization (Indonesia, Nepal, Tanzania).
- Climate change interventions (REDD+) causing local tensions (Vietnam, Nigeria, Kenya).

These diverse linkages demonstrate why PNRM is an essential area of attention for development specialists working on environmental issues, democratic governance, land and marine tenure, climate change, conflict prevention, gender and social inclusion, and other related sectors.

As the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) and the UN Intergovernmental Panel on Climate Change (IPCC) produce mounting evidence of ecological and climate crises, international organizations and donors are focused on setting ambitious goals for biodiversity conservation, climate mitigation, and climate adaptation. Programmatic initiatives like REDD+ and Nature-based Solutions (NbS) are expanding, often promoting widespread and large-scale land-use interventions in areas inhabited by rural populations

and Indigenous Peoples, whose territorial and land rights may be unrecognized or weakly enforced. Recent initiatives like the Principles for Locally Led Adaptation have received global attention, and are normative benchmarks that will be key points of reference for future environmental programming.

However, the evidence review indicates that from a governance standpoint, REDD+ has had disappointing results. More recently, analysts have expressed concerns that NbS will similarly fail to ensure rights for Indigenous Peoples and equitable benefits for Indigenous Peoples and local communities.

These concerns highlight a growing disjuncture between ambitious initiatives to address climate change and ecosystem health and the modest track record of external actors working with local communities to develop effective, participatory natural resource governance mechanisms. Left unaddressed, this governance gap will likely reduce the effectiveness of global environmental interventions and contribute to grievances and instability in rural communities and among Indigenous groups—with broader downstream effects on democracy.

The patterns, lessons, and knowledge gaps identified in this evidence review of PNRM and democracy can inform more focused thinking on these emerging challenges. Building on this evidence base, along with further investigation of the knowledge gaps, can help to identify program options and recommendations to realize the full potential of PNRM in addressing growing environmental problems and the challenges of democratic governance.

Background



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Creating and strengthening governance institutions and arrangements is critical to bolstering the resilience and adaptability of states and societies, particularly in the face of increasingly complex challenges such as biodiversity loss and climate change. The degradation and depletion of natural resources threatens the livelihoods and well-being of communities that rely on the use and sustainability of essential resources of flora, fauna, land, and water (Pörtner et al. 2021). Increased frequency, intensity, and duration of climate change impacts such as extreme temperatures and storms is rapidly changing ecosystems and their ability to adjust (IPCC 2021).

Environmental impacts and weak governance often combine to disproportionately affect women and marginalized groups and communities. For example, dwindling access to resources has contributed to a recurrent phenomenon of women fish traders turning to “sex-for-fish” transactions in parts of Africa, illustrating the links between environmental degradation, health risks, and increased gender-based violence (Siles et al. 2019). Climate change impacts and the societal responses they produce intersect to create and exacerbate resource tenure challenges. Pressures that resource management and governance institutions face from emerging climate-related migration and conflict (USAID 2020c) are driving efforts to strengthen land and resource rights as the basis for improved climate change programming (e.g., Tenure and Global Climate Change (TGCC) project 2021; Sommerville and Guthe 2018).

Participatory mechanisms for managing natural resources have increasingly been promoted at all scales, as they are hypothesized to create co-benefits through effective and equitable solutions to managing common pool resources (Holmes 2000). These deliberative mechanisms may provide more effective and sustainable outcomes for natural resources and people by ensuring that rules and regulations reflect the needs and values of local resource users, thus resulting in stronger support and better compliance.

Participatory approaches can promote social justice by creating and sustaining the conditions for greater co-operation, fairness, and empowerment, particularly of women and marginalized groups (Leisher et al. 2017). However, depending on how participatory mechanisms and decentralization are structured and implemented, they may also entrench or exacerbate existing power asymmetries and place uneven burdens and responsibilities on certain individuals or groups (Ribot, Lund, and Treue 2010; Mustalahti and Agrawal 2020). Ensuring inclusivity, voice, and representation in the institutional design of participation and resource rights are ongoing challenges for participatory natural resource management (PNRM) (Salerno, Romulo, et al. 2021).

Strong, equitable governance arrangements and institutions are critical enabling conditions for the success of nature-based conservation and natural resource management (Ostrom 1999; Mahajan et al. 2019) who will not cooperate to overcome the commons dilemmas they face; (b. Scholarly reviews have examined the links between governance arrangements and democratic contexts on conservation and social and ecological outcomes (Lawry et al. 2017; Brooks, Waylen, and Mulder 2013; Ojanen et al. 2017; Rydén et al. 2020). However, no comprehensive assessments have focused on how governance arrangements in natural resource management affect democratic outcomes outside of immediate environmental concerns. New forms of collective action associated with PNRM—including new institutions, increased citizen capacities, secured resource rights, greater participation of women and marginalized populations, and reduced power asymmetries—have the potential to reconfigure state-society relations and contribute to enhanced democratic outcomes. Yet, advances in democracy are also contingent on political and socio-cultural dynamics that vary greatly in different country-specific contexts. These complex interactions can lead to a broad spectrum of outcomes.

The relationship between PNRM and democracy is of particular importance to the U.S. Agency for International Development (USAID) given its long-standing recognition of the governance challenges associated with environmental programming. Over

the past two decades, USAID has worked to advance Democracy, Human Rights, and Governance (DRG) objectives (such as participation, inclusion, transparency, and accountability) as part of integration with biodiversity conservation and natural resource management priorities across a wide spectrum of projects in countries like Nepal, Namibia, Kenya, Philippines, Guatemala, and South Sudan (USAID 2018).

This strategy has roots in USAID's Nature, Wealth, and Power (NWP) framework, which focuses on how biodiversity and natural resources (nature), livelihoods and economies (wealth), and land and resource governance (power) have interlinked trajectories (USAID 2002). While the importance of power is widely recognized by development practitioners in principle, a follow-up to the original NWP framework found that the governance and social dimensions of power associated with NRM remained relatively overlooked (Anderson et al. 2013).

At the same time, the intersection of power and politics has become increasingly relevant for international environmental programming as a whole, particularly in light of global goals for addressing climate change and environmental sustainability (e.g., the Paris Climate Accords and the United Nations Sustainable Development Goals). Programs to address challenges from pollution to illegal wildlife trade to water management must grapple with issues like policy reform, behavior change, organizational development, and the rights and empowerment of women, Indigenous Peoples, and marginalized groups. Careful and thoughtful consideration of the social and governance aspects of power are becoming standard practice across global environmental programming (for example, the [United Nations Declaration on the Rights of Indigenous Peoples](#) and Free, Prior, and Informed Consent policies for Indigenous Peoples; the Cancun Safeguards of Reducing Emissions from Deforestation and Forest Degradation (REDD+); [Principles for Locally Led Adaptation](#); and [Sustainable Development Goal 16](#) for Peace, Justice, and Strong Institutions).

In 2020, USAID launched the Environmental and Natural Resource Management Framework (ENRM) to ensure that Agency investments integrate

environmental considerations across all sectors. The ENRM framework states that effective implementation requires “strong and inclusive governance structures and capacities at the local and national level... for enabling sound environmental and natural-resource management” (USAID 2020b).

For many environmental programs, PNRM is the basic approach that helps to operationalize program activities along these Agency and international standards. Participatory engagement throughout the program cycle ensures that programs are based on inclusive governance, attuned to local political contexts, and responsive to international norms and commitments. Given the widespread appreciation of PNRM’s relevance for emerging Agency and global priorities, it is critical to address the knowledge gap surrounding how PNRM intersects with and influences democratic governance.

Reviewing the Evidence Base

The evidence review addresses this knowledge gap by collating relevant evidence to characterize linkages between PNRM and democratic outcomes.

The review explores the following questions:

- What conditions—political, economic, social, environmental, or programmatic—have linked PNRM, positively or negatively, to democratic outcomes?
- How has PNRM been linked to equity and empowerment in design, implementation, and outcomes—particularly for women, Indigenous Peoples, and marginalized groups?

- What is the nature, extent, and reliability of the evidence base on these questions? Where do knowledge gaps exist and what kinds of questions require further investigation?

In the following sections, we describe the scope of this review and the methods we used to collate and assess the evidence base.

Conceptual Framework

We hypothesize that participatory processes in natural resource management and governance contribute to both immediate and downstream impacts on *democratic outcomes* (processes, procedures, and governance aspects) at local, subnational, and national scales (see Box 1).

In this review, we develop a generic theory of change (Figure 1) that derives from existing theory on participatory processes, management of common pool resources, resource stability and conflict, and state-society relations (Ostrom 1990; 1992; Holmes 2000; Schlager and Ostrom 1992; Agrawal and Ostrom 2001; Currie-Alder 2005). Democratic outcomes can manifest as part of the design and implementation of a PNRM intervention (i.e., as intermediate outputs), as well as downstream outcomes through direct and indirect mechanisms. For example, studies on community-based natural resource management (CBNRM) describe how changing property rights within communities shifts roles and responsibilities across different scales of governance, necessitating links between local-level accountability, transparency, and equity and subnational and national-scale support and monitoring (Child and Barnes 2010).

BOX I:

DEFINITIONS FOR THE CONCEPTUAL FRAMEWORK AND REVIEW

State actors: Formally elected or appointed officials in executive, legislative, judicial, and administrative positions as well as their ministries, agencies, commissions, courts, etc.

Civil society actors: Individuals, communities, identity-based and religious groups, livelihood-based associations, advocacy organizations, research institutes, and the media.

State: An administrative and legal order that claims binding authority over citizens and all resources and actions taking place in its jurisdiction, empowered with the legitimate use of force.

State-society relations: Interactions between state institutions and societal groups to negotiate how public authority is exercised and how it can be influenced by people.

Fragility: The combination of exposure to risk and insufficient coping capacity of the state, systems, or communities to manage, absorb, or mitigate those risks.

Formal institutions: Statutory rules (laws, regulations, and procedures) that constrain and prescribe the behavior of groups and individuals in society.

Informal/customary institutions: Informal rules (socio-cultural norms and practices) or non-state codified rules (procedures and understandings based on traditional authority).

Participatory natural resource management: A form of collective action bringing together resource users and communities, interacting with government, to make coordinated decisions about stakeholder roles, rights, and responsibilities, and the access, use, supervision, benefits, and stewardship of natural resources, including mechanisms for inclusive dialogue, decision-making authority, and accountability.

In Figure 1, PNRM involves interactions that encompass and influence existing civil society relationships (e.g., power dynamics and social interactions among resource users, stakeholders, and communities), informal and formal institutions (e.g., statutory rules like laws, regulations, procedures, and informal rules expressed in norms and shared understandings), and state-society relations (including legitimacy, effectiveness, transparency, and accountability). While PNRM generally takes place at the local level, its governance is multiscalar, with linkages to national and subnational actors and institutions. Contextual factors—such as political, social, economic, and cultural influences as well as natural resource conditions—also affect PMRM. Contextual factors may also include support from international donors and the norms and ideas of external actors and institutions. From the interactions of all these relationships and factors, across different scales, PNRM produces outcomes with positive, negative, or mixed (bidirectional or complex) linkages to democratic outcomes.

Disentangling when an outcome is *part* of the PNRM process versus an *output* from the process is not straightforward, as outcomes may evolve over time. Proving causal linkages can be difficult, particularly because democracy and natural resource challenges occur in complex socio-political systems. Moreover, democratic processes and settings are also considered enabling conditions for sustainable PNRM interventions (Borrini-Feyerabend and International Institute for Environment and Development 2004).

In this review, we aim to identify and characterize existing research literature that examines linkages between PNRM interventions and downstream impacts on state-society relations or informal and formal institutions (i.e., democratic processes, procedures, settings, and institutions). This literature may include studies that explore democratic outcomes as an element of PNRM or an enabling condition, but all studies must, at the minimum, examine linkages to downstream impacts (outside of the PNRM intervention). We also recognize that PNRM is likely to have impacts on civil society relations (e.g., between users, groups, and stakeholders).

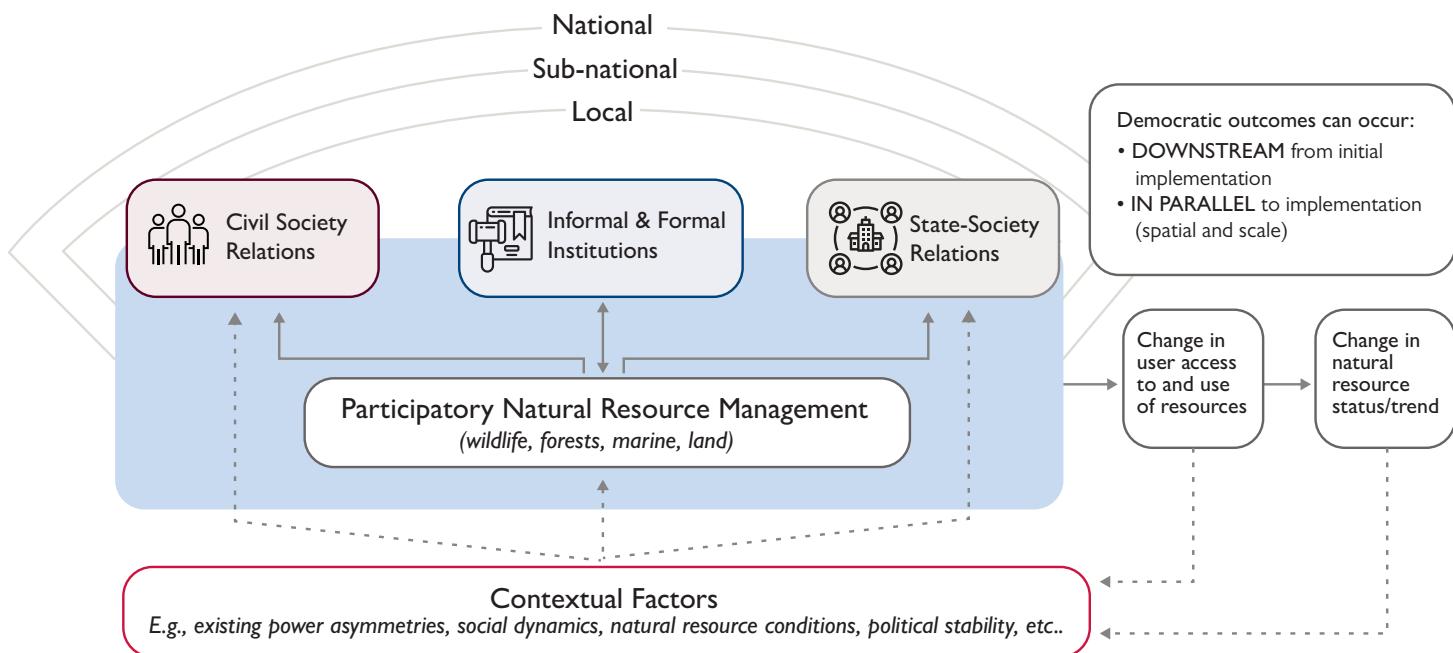


Figure 1. High-level theory of change on relationships and factors affecting linkages between participatory natural resource management and democratic outcomes at scale. Boxes in dark blue represent focal areas for this review.

Methods



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To collate and review the evidence base, we employed systematic evidence synthesis methods, using a combination of systematic mapping and review methods based on guidelines from the Collaboration for Environmental Evidence to comprehensively assess and synthesize existing evidence for evaluating the links between PNRM and democratic outcomes (Collaboration for Environmental Evidence 2018; James, Randall, and Haddaway 2016). Systematic evidence synthesis methods are considered best practice for evidence-informed decision-making and are gaining traction as the preferred means to mobilize ever-growing bodies of diverse knowledge to inform environmental and development decision-making. To do so, expert teams use transparent approaches that aim to identify and describe knowledge gaps and effectiveness of different environmental policies and practices for decision-makers, while accounting for bias. Systematic evidence synthesis methods generate a reproducible protocol for quickly updating the evidence base, according to the needs of users, as new knowledge emerges. We employed a rapid systematic review approach to provide guidance on the state of knowledge, using policy-relevant frameworks to better understand the various types of PNRM interventions, the nature of their linkages, and how they are implemented under different conditions.

We searched for peer-reviewed and grey literature in three publication databases (Environment Complete, PAIS Index, and Scopus), and 17 organization and topical websites ([Annex 2](#)). We used a Boolean search query (keywords and logical operators) to identify potentially relevant documents. A team of three reviewers screened these documents, cross-checking 10 percent of inclusion decisions to ensure consistency. The team performed screening in [colandr](#) (Cheng et al. 2018), an online, open access platform for evidence synthesis and document review.

We first screened documents by title and abstract, and further screened potentially relevant documents at full text for inclusion. As colandr applies a machine learning algorithm to iteratively sort documents by relevance based on reviewer inclusion decisions, we stopped screening at title and abstract when the rate of inclusion dropped below 10 percent for every 100 articles screened. We included documents that fulfilled the following criteria:

- *Empirically assessed a PMRM intervention's impact on democratic outcomes.*
- *The PNRM intervention had an internally driven or mix of internally and externally driven structures.*
- *The PNRM intervention took place in a low-to-middle income country.*

We provide further details and justification below.

Population

This synthesis aims to collate and describe the evidence base on the impacts of PNRM to provide context for USAID Offices and Missions across the Environment and Natural Resources Framework. As such, we focus on a set of key geographies ([Annex 2](#)) that include priority areas where USAID has projects involving natural resource management, democracy, and governance. These priority areas focus on low-to-middle income countries. We include studies that examine impacts of participatory natural resource governance on discrete human populations (individuals or communities) or governance structures (such as laws, regulations, accountability, and corruption). We exclude studies that focus on general populations without discrete measures. We also included studies relating to the following resource sectors: land (pastoralism, grazing, land resource use/land tenure), forests, fisheries, and wildlife (including ecotourism, bushmeat). We excluded industrial and commercial scale resource extraction, non-biological resources (e.g., minerals, water, watersheds), and non-naturally occurring resource extraction (agriculture, aquaculture, hatcheries) given the time and resources available for this project.

Intervention

Three main dimensions characterize the participation of users and stakeholders in NRM: rights, roles, and responsibilities (Currie-Alder 2005). Rights deal with the entitlements (including property, legal, and cultural rights) that a stakeholder possesses and defines their relationship with a natural resource. Rights also define a stakeholder's level of control over or connection to that resource and can be *de jure* (formally recognized in law or written agreements) or *de facto* (practiced but without formal recognition) (Ostrom 1992; Agrawal and Ostrom 2001). The absence of rights does not automatically exclude local resource users from participation in NRM, but is important for considering the extent to which users can participate and their ability to do so in the long term.

Responsibilities cover the tasks that a local resource user performs in relation to NRM. Weaker forms of participation may mean that users are responsible only for informative tasks and do not take part in decision-making tasks.

Roles encompass responsibilities and the purpose of a local user's participation. Roles can change over time, and can reflect the relative power of each user.

While many scholars have examined participation in NRM primarily through a property rights lens (Schlager and Ostrom 1992), others have begun to unpack the nature of participation of local resource users as well. This approach takes into account the power, rights, and type of participation and voice that local users hold in relation to external stakeholders (Currie-Alder 2005). This framing rests on the assumption that all NRM includes both internal and external actors and can be driven internally, externally, or some combination thereof. Whether or not someone is on the "inside" or "outside" will vary depending on the perspective reflected in the literature. In this review, we define internal stakeholders as those who directly experience the impacts of natural resource management (resource users) and external stakeholders as those who do not.

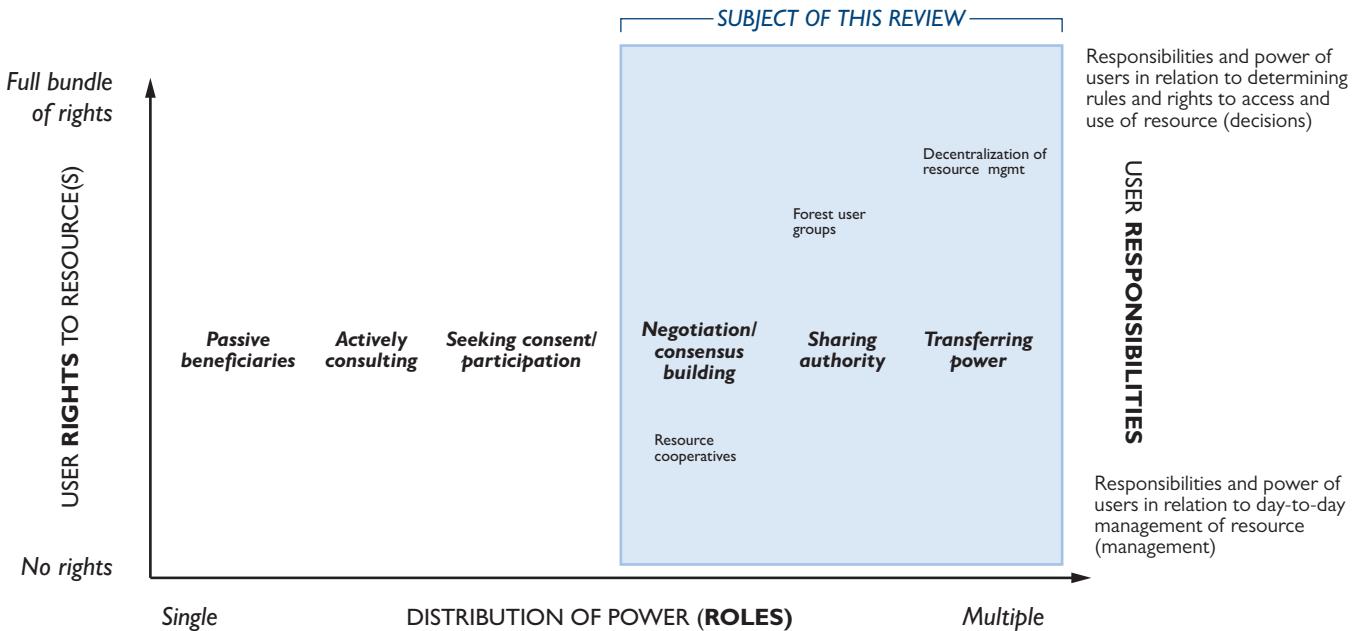


Figure 2. Spectrum of PNRM, characterized by the distribution of power within the natural resource governance system. The blue box represents the subject of this review.

This review examines PNRM that has internally driven or a mix of internally and externally driven structures (blue box in Figure 2). This distinction allows us to identify an evidence base on PNRM that explicitly aims to improve governance and aspects of democracy outcomes for local resource users and groups (as opposed to NRM that is entirely externally driven and minimizes local participation). Along the three dimensions of participation (user rights, responsibilities, and roles), we specifically include NRM interventions that involve medium to strong forms of participation (excluding weaker forms such as consultation) and in which local resource users have explicit roles in management decisions (beyond informational). We consider interventions with all forms of rights present or absent.

Comparator

This review assesses empirical data on the impact of PNRM, thus we only include research, reports, and case studies (quantitative, qualitative, and mixed methods) that observe or measure change linked to an intervention. We do not include studies that are hypothetical or theoretical in nature, or editorials and opinions. We limit the review to case studies published in the last 15 years as we aim to assess recent developments in this area. We excluded books, theses, and reviews.

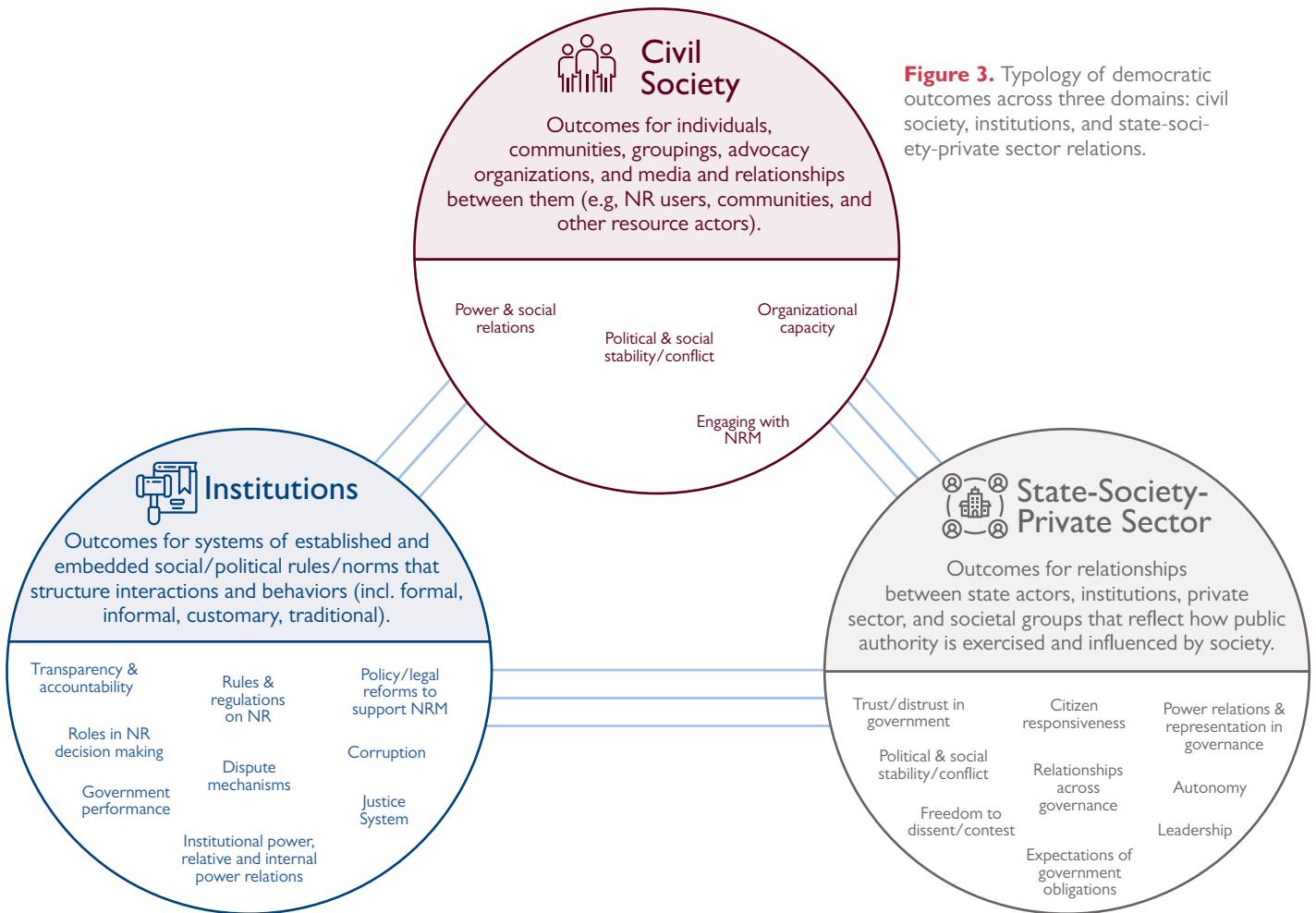


Figure 3. Typology of democratic outcomes across three domains: civil society, institutions, and state-society-private sector relations.

Outcomes

We derived the typology above to capture the types of democratic outcomes that can occur as a part of the PNRM implementation process as well as downstream from establishment of PNRM (see conceptual framework, Figure 1). This typology is derived from the World Bank's Worldwide Governance Indicators (Kaufmann, Kraay, and Mastruzzi 2010) as an analytical lens. Outcomes are categorized across three areas: civil society, institutions, and state-society and private sector relations (Figure 3). More details on the sub-categories of outcomes can be found in [Annex 3](#).

We extracted key meta-data from included relevant articles (Table 1). From these articles, we further identified a representative subset of articles for in-depth inductive narrative review to elucidate key themes and patterns around contexts, conditions, and mechanisms linking PNRM and democratic outcomes (see [Annex 4](#)).

TABLE I.

Codebook for key meta-data

Bibliographic information	Title, authors, journal, affiliation of first author, DOI
Contextual information	What is the context around the natural resource system being examined? (Includes geographic focus, history, politics, power, socio-economic atmosphere, governance)
Study information	What question(s) are being studied and how? (Includes objective of study, design, approach, comparator, location, scale, timescale, methods, data type)
Intervention information	What is the intervention under study? Who is involved and how, what are its motivation and objectives, what are its links to downstream democratic outcomes? Is equity considered?
Outcome information	What are outcomes for civil society/power; institutions/performance; state-society relations; how are outcomes measured, by whom, for whom, about whom?
Linkage/ mechanisms	Are outcomes linked? If so, how? Is there a causal mechanism that links PNRM to outcomes? What is it? Are outcomes in parallel to implementation, downstream, or both?

Results

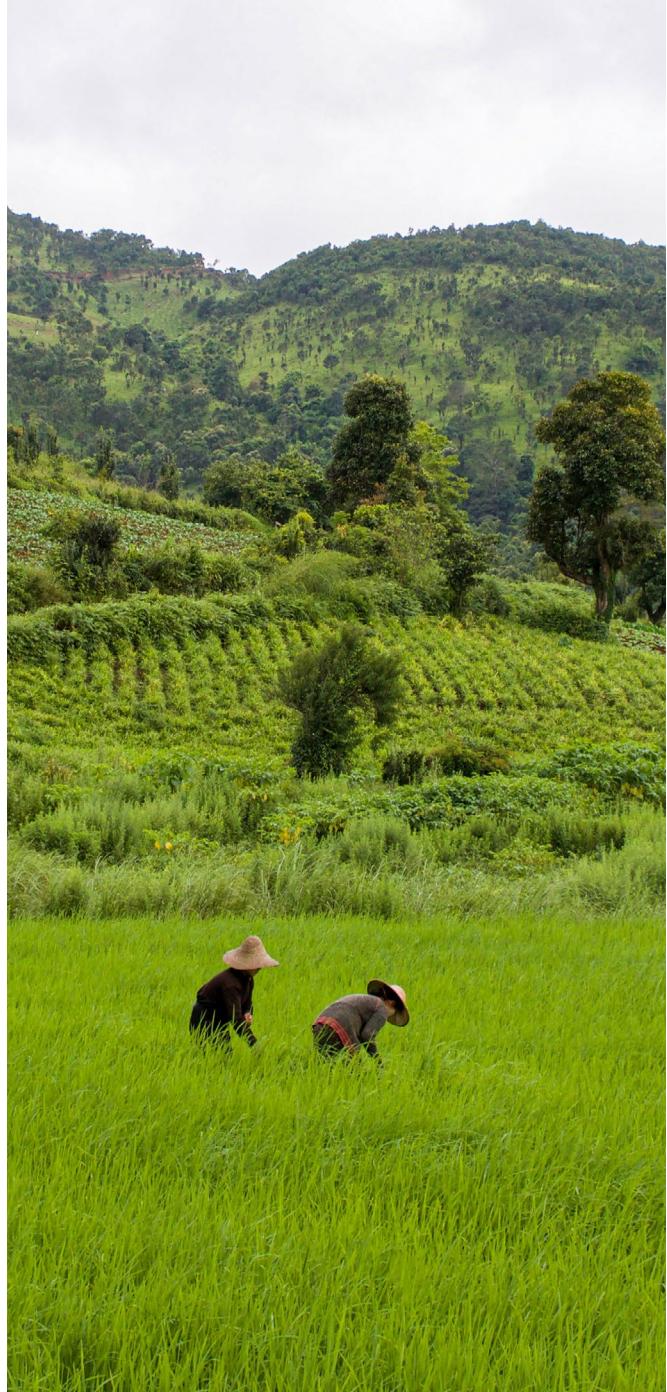


PHOTO CREDIT: SAMANTHA CHENG/DAI

Current State of the Evidence Base

The search yielded 7,202 search results (including articles, reports, and other types of research literature). After assessing these for relevance at title and abstract, we examined the full text of 645 potentially relevant articles. We identified 151 relevant articles ([Annex 4](#)) from which we characterized meta-data on the studies to better describe the distribution and extent of the evidence base.

GEOGRAPHIC AND RESOURCE PATTERNS

The evidence base on links between PNRM and democratic outcomes has grown over the past 15 years, with most articles published within the last 7 years. Cases covered a wide geographic range (Figure 4); however, many studies focused on Tanzania and Nepal (n=31 and n=21 articles, respectively). Kenya, Uganda, Indonesia, and the Philippines also had a considerable volume of study effort. Forests were the most well-studied resource (n=97 articles), followed by relatively fewer studies examining PNRM within fisheries and wildlife contexts (n=39 and n=21 articles, respectively).

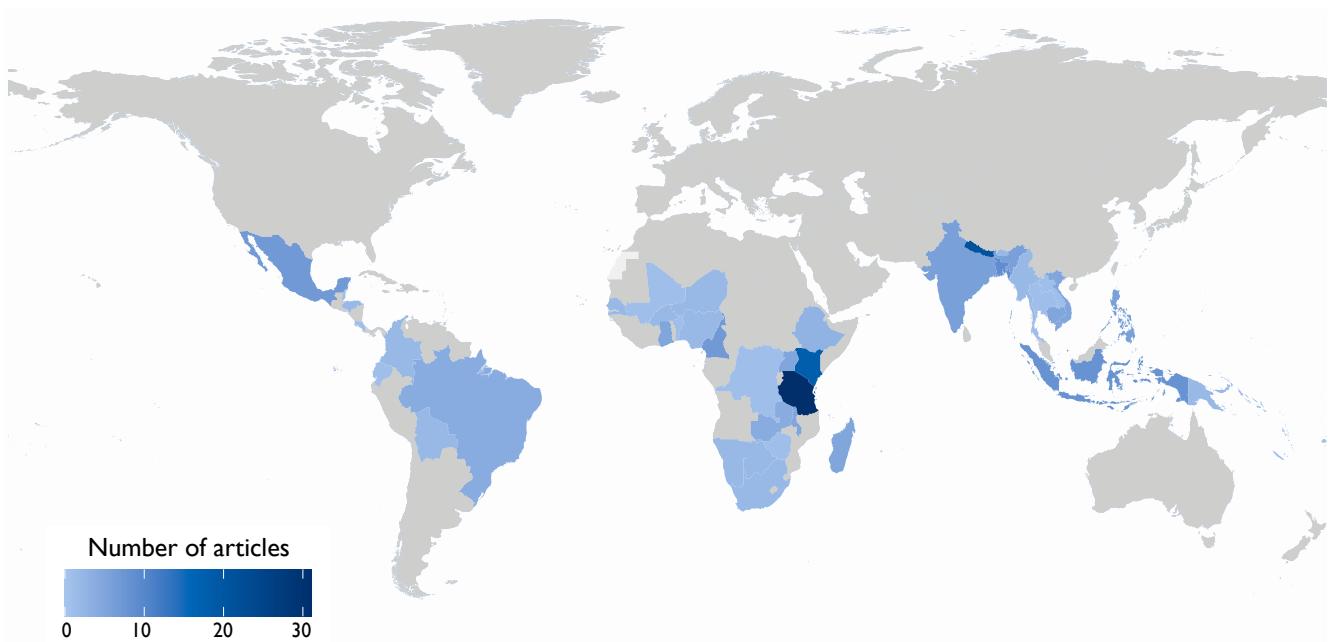


Figure 4. Geographic distribution of case studies (n=151).

PNRM PATTERNS

The articles examined a broad range of PNRM interventions ranging from cases in which power was focused within a single group (e.g., the state) and users had no rights to resources (e.g., Lewins et al. 2014; Ece 2017) to cases that involved power distributed across multiple groups with users having full resource rights (e.g., Ojha et al. 2014; Asmin et al. 2017; Léopold, Thébaud, and Charles 2019) (Figure 5). Cases from a few well-known and well-established interventions dominated the evidence base; for example, community forest management in Nepal (Ojha et al. 2014), community-based forest management and wildlife management areas in Tanzania (Green 2016), and forest management in Indonesia (Erbaugh 2019). Many of these interventions focused on devolving rights and decision-making power over natural resources to local communities to improve their well-being and equity. However, out of the 100 articles that received in-depth review, only a third included explicit considerations for women and marginalized groups in the intervention's design (n=36 out of 100 articles). While the evidence base acknowledges the importance and relevance of PNRM implementation for equity and empowerment objectives, it is relatively lacking in terms of targeted studies that measure those outcomes.

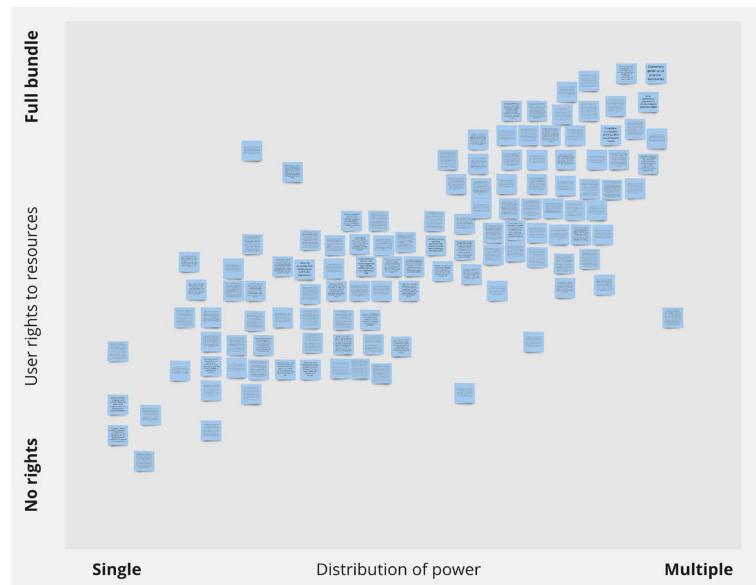


Figure 5. Interventions examined within the evidence base characterized by distribution of power and bundle of rights held by users.

DEMOCRATIC OUTCOMES

This review identified cases in the evidence base describing links between 23 types of democratic outcomes and PNRM interventions (Figure 6). Most cases examined impacts within and among users and manifestations of power and rules within NRM systems. For example, nearly 50 articles focused on the type of user engagement within a PNRM intervention and types of rules and regulations governing use and rights to natural resources. Relatively fewer studies examined impacts on civil society and institutions outside of the immediate PNRM intervention. For instance, only a few studies examined organizational capacity, justice, and the evolution of policy or legal reforms to support PNRM at scale (spatial and temporal). Encouragingly, many studies explored the quality of institutions governing an NRM system and the ability of users to hold those systems to account. These studies covered topics such as corruption, governance performance and fragility, dispute resolution, and transparency and accountability.

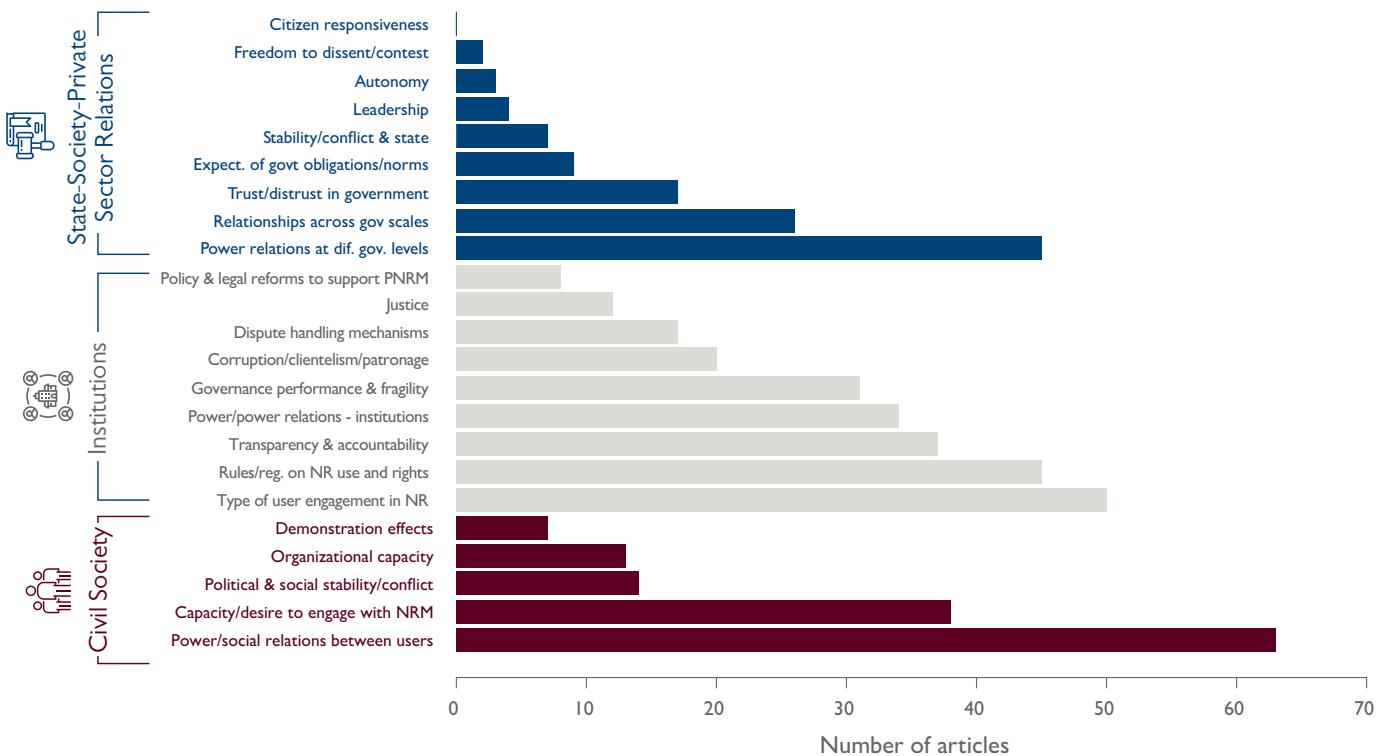


Figure 6. Frequency of measured/observed impacts on democratic outcomes.

About half of the cases examined impacts on civil society outcomes, either alone or in tandem with impacts on institutions or state-society-private sector relations. Impacts on institutions alone or in tandem with state-society-private sector relations appeared in about 40 percent of the evidence base. Overall, the evidence base focuses on both immediate and downstream democratic outcomes, but understanding these relationships is limited by the scope and methodology that most articles employ. Many of the articles observe these linkages in the context of having a principal focus on other issues, such as conservation outcomes or the effects of interventions on various aspects of community well-being. Few articles delve deeply into the broader context of political dynamics or the characteristics of national governance. Nonetheless, findings from this review provide a window onto these linkages and illustrate where further research effort is needed to better understand the impacts of PNRM at scale.

Impacts on Democratic Outcomes: Patterns and Illustrative Cases

This portion of the review focuses on insights drawn from a subset of the evidence base (100 out of the 151 included articles) that represents a range of PNRM interventions and geographies.

Three broad categories of governance dynamics emerge from the evidence: 1) power dynamics both among actors and between levels of governance, 2) forms of participation and engagement, and 3) the acquisition of rights and responsibilities for NRM. Changes in relations of power are inherent to the process of shifting toward participatory processes in the implementation of PNRM. The primary mechanisms within PNRM that can change power relations include new institutional arrangements that expand participation, enhanced capabilities of resource users to engage in deliberation and decision-making, and increases in the rights and responsibilities of different groups of resource users and local communities with respect to the access, use, benefits, and stewardship of natural resources (Currie-Alder 2005). In general, the evidence base focuses on how interventions have dealt with the challenge of expanding democratic practices in each of these areas.

Interestingly, the evidence review found relatively fewer articles that explicitly focused on issues of equity and empowerment for women and marginalized groups (29 percent across the entire evidence base). Most studies tended to examine the distribution of impacts within a single community or using a single lens, without disaggregating potential differences in impacts across specific groups within a community or area. For example, while some studies focused on interventions that explicitly

aimed to improve equity and empowerment of women and marginalized groups ($n=30$ out of 100 articles), fewer examined aspects of distributional equity for these groups. We found that 13 out of 100 articles examined in-depth, explicitly measured outcomes for women, while 8 out 100 examined outcomes for Indigenous Peoples or other racial or ethnic minorities.

Overall, while some of the cases *only* reported positive (i.e., improvements from prior conditions) or negative impacts, most cases presented a more complex picture in which conditions did not necessarily improve or where heterogeneous impacts across different user groups were observed. This trend should be taken as a heuristic measure of the reported impacts of PNRM within the evidence base and does not speak to the magnitude of change, the reliability of studies reporting change, or the strength of causal linkage between PNRM and the observed impact.

In fact, most of the articles provide descriptive discussion of impacts and mechanisms rather than an explicit causal analysis. In particular, it is important to consider the influence of publication bias (Franco, Malhotra, and Simonovits 2014) in these reported impacts (Box 2). Authors at academic or research institutions led the majority of the studies we examined (84 out of 100 articles) and they often were not involved in program implementation or evaluation. However, the depth and extent of the evidence base we assessed does surface critical patterns and trends, particularly on the role of power within PNRM implementation and its influence on downstream impacts. We describe illustrative cases of this complexity in dynamics and impacts below.

We found that many of the articles highlighted how changes in power and institutional arrangements required to implement PNRM were closely linked to state policies for decentralization. This is unsurprising given the surge of decentralization policies from the mid-1980s, coinciding with the emergence of critiques of post-colonial governments and recognition that local communities can be best suited to manage and steward natural resources (Larson and Soto 2008). More recent literature makes clear that decentralization of NRM and the devolution of managerial powers has put in motion processes that often involve intense political contestation and have broader scale impacts on socio-political dynamics. For these reconfigurations of institutions and power within PNRM to become effective and credible, procedures for interactions and communication among stakeholders, flows of information, and the exercise of authority must be transparent and accountable. Thus, how these dynamics of power and politics play out across multiple scales strongly influences the implementation of PNRM, and subsequent pathways to a diversity of outcomes.

In Sections A and B below, we explore more closely: 1) the enabling conditions and contexts associated with links between PNRM and positive democratic outcomes and 2) constraints that hobble or obstruct PNRM in cases of suboptimal or negative democratic outcomes (Table 2).

BOX 2:

UNDERSTANDING THE PNRM LITERATURE: RESEARCH ANALYSIS AS CRITIQUE

Most of the peer-reviewed literature on PNRM uses a consistent **critical lens** to focus on efforts to improve conservation outcomes and the lives of natural resource users who are often poor, limited in their resource rights, and politically weak. These studies discuss the interactions of internal and external actors, formal and informal institutions, shifting levels of governance, social and cultural patterns, and livelihood needs in communities trying to increase their human security. All these relationships reflect competing interests and are often marked by large asymmetries of power.

PNRM involves the transfer of power—ranging from pro forma consultation to real decision-making and control—from central authorities to local communities and resource users. The PNRM literature documents this difficult process as it works against the grain of the status quo. This entails analysis of the problems, constraints, failures, and successes of resource-reliant communities seeking empowerment in weak or flawed democracies. Most analysts focus on highlighting and critiquing suboptimal outcomes in hopes of contributing to knowledge that can advance more effective PNRM and contribute to community well-being. Despite that critical perspective, the literature also captures achievements of PNRM in co-management, empowerment, conflict resolution, and benefit sharing that can serve as examples to strengthen program activities.

TABLE 2.

EMERGENT PATTERNS ASSOCIATED WITH DIFFERENT DIRECTIONS OF REPORTED OUTCOMES FOR DEMOCRACY

Positive outcomes	Suboptimal or negative outcomes
<ol style="list-style-type: none"> 1. New collective action capacities and alliances increase negotiating power. 2. Density of social networks increases influence and community benefits. 3. Institutional development and adaptation produce broader downstream effects. 4. Integrating customary and formal institutions increases effectiveness. 5. Institutional legitimacy and credibility contribute to conflict management. 6. Co-management supports community interests in limited political spaces. 7. Supporting Indigenous Peoples' NRM enhances biodiversity-democracy linkages. 	<ol style="list-style-type: none"> 1. Failure of state authorities to cede power constrains implementation of decentralized NRM. 2. “Responsibilization” and technical approaches hinder local democracy. 3. Creation of new institutional elites undermines downward accountability. 4. Local NRM institutions reproduce gender inequality. 5. Local NRM institutions reproduce class and caste discrimination. 6. External actors with global environmental goals underestimate community complexities and may undermine elected local government.

A. POSITIVE DEMOCRATIC OUTCOMES AND ENABLING CONDITIONS

In their recent comparative history of how democracies come into being, Acemoglu and Robinson (2019) conclude that it is necessary to focus on the processes by which democracy “emerges in a narrow corridor where society’s involvement in politics creates a balance of power with the state.” Reflecting that basic dynamic, the reviewed literature shows how PNRM produces outcomes linked to democratic variables that evolve over time through iterations of local empowerment and political counterbalancing. We observed seven patterns and enabling conditions in the evidence review and describe them below, along with country-specific cases. While analytically distinct, in practice these patterns may overlap and create further positive synergies. These cases suggest a number of common enabling conditions—factors that facilitate the emergence of positive democratic outcomes—but how they combine and interact depends on specific socio-political contexts.

I. New Collective Action Capacities and Alliances Increase Negotiating Power

PNRM produces structural changes in patterns of power that increase the capacity for collective action and the negotiating power of local communities. These changes include both new opportunities for agenda-setting and mechanisms to influence formal decision-making processes. When communities are able to form political alliances to support their interests, they exercise greater voice, advocacy, and agency—the capacity of actors to make things happen.

PNRM generates structured opportunities at the local level for new forms of representation and formal settings for resource users to voice concerns, access information, advocate reforms, propose oversight mechanisms, and negotiate the distribution of benefits. These opportunities are necessary but may not be sufficient to contribute meaningfully to democratic outcomes. The evidence indicates that further enabling conditions are often important for stronger positive linkages. In these cases, PNRM is increasingly strengthened by organizational alliances and sustained by legislative reforms or favorable political conditions, which combine to produce shifts in power and policies that alter dominant and subordinate state-society relationships. A shared imperative among communities

and government to solve natural resource problems of access, use, and sustainability deepens relations of cooperation and collaboration. These relationships include both links among communities and vertical interactions with different levels of government authority. NGOs also often play important state-society bridging roles, bringing together actors from formal governmental institutions, local customary institutions, the private sector, and resource-user groups.

In Thailand, four communities on the Andaman coast worked collaboratively on community-based mangrove management (CBMM) for more than 20 years—demonstrating how the agency of resource users grew through linkages with outside partners and government agencies. The communities first increased their capacity for collective action, knowledge sharing, collaboration, and mobilization (including blockading shrimp farmers) with the technical assistance of several NGOs. This was followed by a phase that focused on developing organizational skills to engage with provincial, regional, and national government agencies on legal issues and conflict resolution.

The communities succeeded in having mangrove forest registration transferred from the Department of Forestry to the Department of Marine and Coastal Resources (DMCR), which better understood the threats to mangroves and coastal communities’ needs. In the context of Thailand’s 1997 constitution, which recognized decentralized community rights, DMCR

also played a bridging role to bring in private sector groups that supported mangrove planting projects. Community leaders became active in national networks for community forestry and worked with universities and other partners to strengthen community-based activities, including the development of ecotourism.

As NGO support diminished, villagers became more adept at lobbying government agencies directly. The CBMM activities gained recognition by both government organizations and academic institutions, generating downstream demonstration effects as the villages became popular study sites for environmental and development professionals from across the country (Kongkeaw et al. 2019).

In the state of Acre, in Brazil, multistakeholder forums were created to engage Indigenous and traditional peoples' communities (ITPC) in territorial planning for Ecological Economic Zoning, the process that determines the use, restrictions, and rights for forests, protected areas, and extractive reserves. Over the previous two decades, Indigenous groups in Acre had faced progressive encroachment from surrounding farms, contributing to the loss of 40 percent of forested lands. Unlike other Brazilian states, Acre had a relative absence of organized agricultural elites.

During those years, local ITPC groups advocating forest protection established relationships with environmental NGOs and took advantage of the political space afforded by the ascendance of the Workers Party. ITPC groups developed group solidarity around *florestania* (sustainable forest management) and gained government recognition and support in their resistance to deforestation. In the state-sponsored forums on zoning, which included representatives from both government and the private sector, ITPC representatives used their accumulated political capital to exercise “great influence” in establishing the state’s territorial planning goals. Incorporating Indigenous priorities also helped to give public legitimacy to the outcomes of Acre’s multistakeholder forums (Gonzales Tovar et al. 2021).

2. Growing Density of Social Networks Increases Influence and Community Benefits

PNRM produces social change as communities and resource users build on and develop social capital—the networks, norms, and trust that allow people to work together—in ways that expand networks of civil society collaboration and bring material and nonmaterial benefits. Pre-existing social capital derived from strong cultural bonds or group identity among resource users (such as fishers or forest users) can provide collaborative experiences that also help develop the institutional arrangements for PNRM.

The implementation of PNRM significantly increases and deepens the forms of association among resource users through natural resource committees, local assemblies, forest user groups, fisheries co-management, wildlife patrols, peace committees, women's and youth groups, and reinvented traditional gatherings that explain and affirm shared understandings of the instrumental and normative aims of community-based natural resource management. Social trust and larger networks develop when these groups are perceived to function with effectiveness, transparency, and accountability. Successful PNRM often deploys strengthened social capital and solidarity as leverage to influence government decision-making and gain benefits for participating communities.

In the Philippines, people’s participation in mangrove restoration projects based on decentralized co-management built social capital among communities through more dense and diverse inter-community ties, improving their shared access to information, services, and resources. Investigators found measurable differences in social capital between members and nonmembers of the People’s Organization (PO), i.e., those who did or did not participate in the mangrove restoration program. The social networks established by the PO members led to their eventual participation in government-sponsored environmental projects and improvements in state-society relations. These collaborations created synergies

for the creation of additional networks and new project involvement that provided further material benefits for communities (Valenzuela et al. 2020).

In Honduras, the fishing communities of Tela Bay successfully transitioned to co-management to overcome weak local institutions and ensure the sustainability of their Caribbean reef fishery by joining with government agencies and NGOs in the Tela Environmental Committee. The Environmental Committee supported the communities with research, education, policy development, and monitoring and enforcement. In 2019, Tela Bay established the first fisheries co-management system in the country. In community dialogues, local fishers identified social relations based on a sense of shared identity among fisherfolk, previous experiences of collaboration, and a widespread normative commitment to community participation as the foundational strengths of the project (Rivera, San Martin-Chicas, and Myton 2021).

A distinctive scenario appears to apply to situations in which pre-existing social capital and supportive government policies combine to produce participatory and equitable outcomes. Bhutan is the clearest example of the positive effects of strong social capital, bolstered by ethnic homogeneity, the absence of caste divisions, and communal livelihood activities. In contrast to examples from its South Asian neighbors, community forestry groups in Bhutan had high levels of economic equity, with timber distribution favorable to women and the poor. Female participants were as knowledgeable as men about institutional procedures, had higher levels of participation, and openly voiced their opinions despite occupying fewer leadership roles. The community forestry groups also benefited from significant assistance from forestry extension agents, who worked through the local district administration rather than under the state forestry agency. Cultural norms for collaboration and relative gender equality worked together with technical assistance to support effective collective action to reverse forest degradation (Buffum, Lawrence, and Tempel 2010)

3. Institutional Development and Adaptation Produce Broader Downstream Effects

Successful PNRM is supported by sustained processes of institutional evolution, learning, and adaptation that contribute to democratic outcomes at multiple scales, from local to national to international.

Although PNRM is associated with the self-organization of local communities, the issues it deals with are linked to governance outcomes at multiple scales. Nationally, PNRM both reflects and influences the management of natural resource sectors. Through non-linear but cumulative processes, the growing recognition of the need for greater community empowerment, better defined resource rights, and local input on rules and regulations can be seen in the evolution of NRM regimes, from forests in Indonesia and India, to fisheries in West Africa and Central America, to wildlife in Southeast Asia. These changes come in response to national concerns over sustainability, community demands for greater local control and benefits, and global norms for social safeguards and inclusive politics in environmental and climate interventions.

In Tanzania, wildlife management areas implement community-based conservation (CBC). Communities receive benefits from safari tourism revenues in return for protecting wildlife, often in the form of material support for infrastructure and health and education facilities. A multi-site investigation into an 18-year CBC program found that CBC participation predicted stronger village governance institutions, and CBC villages had more local civic organizations and small business enterprises (Salerno, Andersson, et al. 2021).

One of the best-known examples of long-term PNRM is that of community conservancies in Namibia, which grew from four conservancies in 1998 to 86 conservancies in 2018. Conservancies in Namibia manage wildlife habitats and anti-poaching activities in return for joint venture concessions for tourism and hunting that provide employment and revenues. The conservancies are supported by legislation giving them defined legal

rights, governed through elections and a constitution, and managed with a focus on financial transparency. Conservancies manage 20 percent of Namibia's land area, including 43 community forests. The conservancy approach has also served as the model for national legislation to provide rights in the water and forestry sectors. An Institutional Development Working Group, including government representatives, advises conservancies on ways to continue improving resource management, democracy, transparency, and gender balance (MET/NACSO 2020; Anderson et al. 2013).

Since the 1970s, community forestry in Nepal has contributed to and reflected waves of reform in development strategy, from technical management approaches and participatory forestry to sustainable forestry aimed at addressing global climate change. As community forest user groups (CFUG) grew in number, a national network, the Federation of Community Forestry Users (FECOFUN) was created in the mid-1990s. FECOFUN became a key player in forest sector politics as a "secondary level organization," pooling the shared interests of communities through street protests and lobbying campaigns (Paudel, Cronkleton, and Monterroso 2012). Eventually, the group became an influential force in national policy debates, interacting with governance at all levels. During Nepal's years of political crisis from 1996–2006, CFUGs provided political stability by filling the vacuum left in the absence of elected local government. More recently, Nepal's forest sector engagement at the global level with REDD+ has added to momentum for increased local participation for women, Indigenous people, and marginalized groups (Ojha et al. 2014).

4. Integrating Customary and Formal Institutions Increases Effectiveness

PNRM improves governance through institutional innovations that retain the benefits of customary institutions while integrating them with formal institutional arrangements.

One of the main governance challenges in countries with large rural populations is balancing or integrating

Indigenous and traditional systems of natural resource governance—based on deep local knowledge and community legitimacy—with formal institutions and legal mandates of environmental ministries and implementing agencies. PNRM provides mechanisms for communication, dialogue, and learning that help negotiate the distribution of power and authority across levels of governance as well as bridge differences in cultural outlooks and values.

In Central Sulawesi in Indonesia, the in-migration of Bugi fishers, who used fine-mesh gill nets and other illegal fishing practices, completely depleted tilapia stocks in Lake Lindu. Local Lindu wet-rice farmers relied on the lake fish for domestic food consumption. Both the Bugi and Lindu communities faced a resource crisis. The government gazetted a broad area around Lake Lindu as a national park and Lindu communities worked with NGOs to create Community Conservation Agreements adjudicated by local customary (*adat*) councils. The government passed regional autonomy legislation that recognized the authority of *adat* sanctions.

Communities repurposed a traditional Lindu practice of restricting fish catches during times of mourning and made it into a more general rule to sustainably manage fish stocks. Bugi fishers agreed to the periodic restrictions on fishing issued by the council. When Lindu was designated as a conservation district, Bugi migrants received official recognition as potential local council members. These local arrangements, covering both ethnic groups, were integrated within the multilevel governance arrangements for regional autonomy and the national park system (Haller, Acciaioli, and Rist 2016).

In the Ayopaya highlands of Bolivia, the land reform of 1953 granted collective land rights to the Indigenous Quechua people through rural syndicates (*sindicatos*). Communities in the *sindicatos* granted use and control of land to families. Underpinning the communities' social organization were traditional values of group reciprocity, grounded in the idea of the forest commons as *Pachamama* (Mother Earth). But as forests increased in value and the demand for timber in urban areas grew, some high-value land was granted as private

property to members of elite families. Communities found themselves unable to stop deforestation in these privately owned forest areas, a trend that contravened Quechua cultural-spiritual norms.

Motivated by the example of conservation NGOs in Bolivia, the communities created their own NGO called “Foundation for Self-Determination and the Environment” (FUPAGEMA). FUPAGEMA became the vehicle through which communities began pressuring municipalities to enforce rules against private owners violating shared norms for forest protection. In the early 2000s, a political window of opportunity emerged when a new party, the Movement Toward Socialism (MAS), came to power in municipalities with the support of the Indigenous communities. With MAS in charge of local government, the concerns of FUPAGEMA and other community forest advocates received official recognition, and private landowners were sanctioned and subjected to fines for deforestation (Haller, Acciaioli, and Rist 2016).

5. Institutional Legitimacy and Credibility Contribute to Conflict Management

PNRM based on transparency and accountability accumulates legitimacy and credibility that allows it to serve as a platform for dispute resolution and conflict management.

The institutional arrangements that develop under PNRM for participation, dialogue, information-sharing, and problem-solving increase the capacity and desire of resource users to engage on resource management issues. In weak or flawed democracies, PNRM provides one of the few platforms with the potential to consider diverse perspectives within heterogeneous communities and community grievances about the implementation of state policies. Co-management institutions able to serve as honest brokers offer venues to address the state-society conflicts that lie at the intersection of natural resource governance and broader development policies.

In Colombia, researchers carried out quantitative survey fieldwork to determine the effects of natural resource co-management on local conflicts over

development projects, access restrictions, unfulfilled government promises for consultation, and imposition of exogenous objectives. The survey focused on 10 national protected areas (NPAs) across the Amazon, Andes, and Caribbean and Pacific coasts. The results showed that the proportion of conflicts experienced in the NPAs decreased as the number of enabling conditions for effective co-management increased. The authors found similar results in relation to survey data on the presence of trust and effective participation under co-management, with conflicts reduced to zero when both conditions were met. The study concluded that “more effective participation of local groups in NPA management are most-important conditions to prevent or mitigate park-people conflicts” (De Pourcq et al. 2015).

In Ghana, wildlife management actions at Mole National Park produced conflict due to the enclosure of traditional hunting grounds, farmlands, and sacred sites. These actions led to a loss of livelihoods and increasing resentment against park authorities. A local NGO worked with community wildlife co-management groups to address the conflicts, which varied in intensity across locations. The NGO conducted focus group discussions in 10 communities surrounding the park to determine the role of co-management in resolving disputes. Community members judged strategies that used co-management structures to facilitate “open and transparent dialogue in the form of negotiation, mediation, and economic incentives” to be successful. Communities that were not within the co-management system continued to express hostility toward park officials. Where conflict had escalated beyond the possibility of dialogue, park authorities recorded increases in illegal logging, killing of wildlife, and bushfires (Soliku and Schraml 2018).

6. Effective Co-Management Supports Community Interests in Limited Political Space

PNRM based on co-management institutions that are perceived as effective and legitimate by state authorities can represent community interests despite limited political space (e.g., non-democratic regimes in Southeast Asia).

As co-management arrangements demonstrate the capacity to formulate solutions to natural resource challenges, their institutional reach increases, connecting them with a variety of state actors, including government agencies and officials with diverse responsibilities. Even in countries with limited political space, government officials who need to address environmental or resource-related problems may engage with participatory co-management institutions.

Despite a history of top-down governance in Cambodia and Vietnam, declining coastal resources have motivated government officials in both countries to support co-management approaches for the restoration of mangrove resources, including the Peam Krasaop Wildlife Sanctuary in Cambodia and the Tam Giang Lagoon in Vietnam. Both co-management interventions markedly increased opportunities for more diverse user engagement, learning, and adaptation. In Cambodia, new interlocutors included national ministries and the provincial Department of Women's Affairs. A task force to address mangrove degradation included multiple government departments, the military, and police. In Vietnam, the co-management board included local associations, commune representatives, and farmer's and women's unions. Government officials in Vietnam credited new NRM strategies for coastal management to knowledge they acquired during engagement with the Tam Giang Lagoon co-management institutions (Fidelman et al. 2017).

In Laos, communities and government officials worked together on implementing collaborative governance in 18 villages surrounding the Hin Nam No National Protected Area (NPA). The district governor endorsed

village co-management committees that included both community and government participants, and these were mandated to conserve biodiversity, promote ecotourism, and support local cultural values. With the Provincial Office of Natural Resources and Environment and the district governor's office as champions, the committees directly engaged in decision-making and developed policies, by-laws, and management programs (including a five-year strategic plan for the Hin Nam No NPA). With assistance from the German government, community members took part in biodiversity monitoring, patrolling, scientific surveys, and ecotourism activities. In May 2015, a Decree on Conservation Forests enabled more local community participation in protected area management and gave villagers user rights. The Hin Nam No NPA was viewed by government as a successful example of co-management with potential applicability elsewhere in Laos. However, skeptics remained concerned about the program's sustainability in the context of persistent corruption in Lao political culture and uncertainties about government funding to support park management (De Koning et al. 2017).

7. Supporting Indigenous Peoples' NRM Enhances Biodiversity-Democracy Linkages

PNRM is aligned with the traditions and practices for NRM used by most Indigenous communities and provides the framework most likely to be successful in protecting Indigenous rights while responding to national governance systems and international environmental goals.

Many Indigenous communities collectively manage natural resources according to a range of priorities and values that are broader, more diverse, and more integrated than those typically reflected in formal institutions, rules, and regulations. These priorities may include kin and clan-based resource rights, sanctions based on compensatory or restorative justice, dispute resolution by recognized leaders or elders, and cultural or spiritual values tied to landscapes, flora, and fauna. According to findings from a recent evidence synthesis

on the role of Indigenous peoples and local communities in conservation, “when the legislative and policy arrangements are supportive, equitable governance that recognizes local knowledge and institutions . . . represents the primary pathway to effective long-term conservation of biodiversity” (Dawson et al. 2021). PNRM uses inclusive, rights-based approaches to build the trust and cooperation needed to recognize and protect Indigenous rights and facilitate their articulation with formal institutional structures.

In Sumatra in Indonesia, the forest management by the Koto Malintang and Simancuang people provides a strong example of endogenous PNRM. Uncultivated forest land (*rimbo*) and converted forest land for dryland cultivation (*parak*) are both common pool resources whose acquisition, allocation, and distribution are managed primarily through collective decision-making grounded in clan-based relations, matrilineal descent, or communal leadership. *Parak* and *rimbo* are governed by ancestral norms for land and forest management, but customary authorities and village leaders work together in NRM implementation. The Simancuang people, who have a permit for their village forest, collaborate with a local government institution dedicated to forest management. Graduated sanctions are used for violations and conflict management, with decisions moving as needed from families to sub-clans to customary leadership courts to the occasional involvement of local government leaders. Justice is sought through “win-win” solutions where possible, with Islamic law used as a point of reference for moral and ethical matters. These endogenous mechanisms for resource management have proven effective for local communities in Sumatra, but require recognition in government policies to ensure their sustainability (Asmin et al. 2017).

In recently independent Timor-Leste, with post-conflict land and forest tensions still ongoing, the revival of traditional natural resource management rules under the process known as *tara bandu* has contributed to environmental peacebuilding. *Tara bandu* consists of a set of community rituals, negotiations, and ceremonies over a period of several days that set out resource prohibitions and rules for dispute resolution before large public gatherings that include community leaders, clergy, law enforcement, and other government authorities. A combination of cultural and spiritual norms, local mediation mechanisms, and community patrols constrain the behaviors of resource users.

International and national NGOs have provided support for *tara bandu*, which local people prefer to formal institutions and law enforcement. State authorities recognize that *tara bandu* produces higher rates of compliance than formal state laws. The success of *tara bandu* has increased state support for the process but also raised concerns about its dilution and bureaucratization as a form of “symbolic politics” used by state authorities to compensate for the shortcomings of their own natural resource governance and peacebuilding efforts. The challenge is how to retain the distinctive benefits of *tara bandu* as an endogenous system of PNRM, supported by the state, without evolving into a weaker, hybrid form of environmental governance that loses the force and influence of its cultural and spiritual roots (Ide, Palmer, and Barnett 2021).

B. CONSTRAINTS AND NEGATIVE DEMOCRATIC OUTCOMES

As indicated in the theory of change in Figure 1, the prospects for successful PNRM are heavily influenced by contextual factors, including power asymmetries, political dynamics, social structures, economic priorities, cultural norms, and the condition of natural resources. The material support, organizational goals, and normative commitments of external actors such as environmental NGOs, biodiversity specialists, climate experts, development practitioners, and private sector actors also affect the course of PNRM interventions.

At the global level, democratic backsliding has become widespread in recent years. The [V-Dem Institute](#) reported in 2020 that Latin America and the Asia-Pacific have reverted to a level of democracy last seen 30 years ago, and 60 percent of sub-Saharan countries are classified as “electoral autocracies.” The annual [Freedom House](#) survey stated that “the year 2020 was the fifteenth consecutive year in decline of global freedom.” The period covered by this evidence review of PNRM and democracy (2005–2020) coincides with these declines in democracy. In many countries, PNRM interventions—essentially a series of experiments in local democracy centered on natural resource management—have been swimming upstream against anti-democratic trends.

PNRM AND DECENTRALIZATION

Aside from the limited number of cases of endogenous PNRM discussed in the literature, the great majority of PNRM interventions are linked either in their origins or implementation to national policies for decentralization. The evidence shows that incomplete or flawed decentralization is one of the most widespread and persistent constraints on successful implementation of PNRM.

Beginning in the 1980s, supported by multilateral institutions and donor governments, policies promoting decentralization were initiated in many developing countries. These policies prominently included many

aspects of environmental governance. Forty years later, that process is still incomplete. The devolution of power for the management of natural resources from central authorities to local communities and resource user groups has often been tentative, selective, contradictory, or subject to reversal.

As a matter of stated policy, governments decentralize with the expectation of realizing a variety of improvements in natural resource management, including increased efficiency, reduced costs, greater participation and accountability, and enhanced resource sustainability. But the evidence indicates that, in many instances, governments also devolve power as a response to the incentives and preferences of external institutions and donors. Many articles in this review demonstrate that authorities at higher levels are frequently reluctant to cede powers downward, as seen in their greater willingness to pass down responsibilities than to relinquish decision-making powers.

In flawed democracies, electoral autocracies, or clientelist states—categories that cover most of the countries represented in this review—control over the access and use of natural resources like forests, fisheries, and wildlife also often provides opportunities for elite capture, rent-seeking, and corruption. This situation creates further incentives for dominant authorities to limit or manipulate the decentralization process. Six patterns of constraints and negative democratic outcomes observed in the evidence review are described below, along with country-specific cases. The examples show that these distortions of the transfer of power can take many forms.

The problematic space between officially declared decentralization policies and politicized or non-compliant implementation is the day-to-day context within which the planners and would-be beneficiaries of PNRM often find themselves working. Given the challenge of navigating this interplay of interests and power—often

from a position of limited information and poorly defined rights—communities may struggle to advance along the spectrum of participatory governance from passive receipt of information and nominal consultation to formally recognized standing, defined rights, tangible influence, and clear decision-making powers.

The evidence shows many cases in which the central government, despite ostensible or proclaimed decentralization, maintains control over decision-making or retains control over high-value resources and revenue. These examples appear across geographies and landscapes.

I. The Failure of State Authorities to Cede Power Constrains the Implementation of Decentralized NRM

Despite the noted success of Kenya's conservancies in the Northern Rangelands Trust, critics assert that the country's participatory forest management (PFM) program has not produced similarly positive results. The PFM policy encourages the sharing of forest management powers, and community forest association members are beneficiaries of specific, delimited rights. But investigators found most powers for decisions, management, and revenues still resided with the Kenya Forest Service (KFS). Donor financial support was “planned and executed through the KFS,” rather than community forest associations (Mutune and Lund 2016).

CBNRM has been problematic in southern Africa as well. An early assessment of wildlife and fishery co-management in the Kafue Flats of Zambia determined that CBNRM had largely been unsuccessful. Despite stated intentions of devolution, central authorities established the management committees, government administrators made key decisions, and the Department of National Parks and Wildlife Services handled revenue distribution. The “government’s inflexible approach toward building relationships with communities” further complicated these processes (Nkhata and Breen 2010).

In Botswana, the CBNRM model for community conservancies never provided extensive decision-making

powers over resource use to communities, and in recent years the devolution of limited rights further narrowed as national economic benefits became “valued as more important than the developmental needs of districts or communities.” CBNRM representatives were also held in disfavor by incumbent politicians for supporting opposition political parties (Cassidy 2021).

This pattern of withholding important decision-making powers also appeared in Latin America. A study of decentralization, legal authority, and decision-making in forest co-management in Mexico and Brazil found the process to be incomplete. Central governments retained key powers, while devolved rights were ambiguous or difficult to exercise. Communities in both countries made day-to-day operational decisions for forest management, but the regulation of wood extraction and long-term planning remained under government control. Communities took on monitoring and surveillance responsibilities in locations where governments were absent in law enforcement (Hajjar, Kozak, and Innes 2012).

Despite the introduction of community-based forestry schemes, central authorities in Asian countries also often retained control over valuable forest resources. In Cambodia, the perspectives of local experts were solicited about community-based forestry interventions regarding 13 community forestry sites. While respondents diverged in their views about environmental and socioeconomic conditions, as well as the legal and institutional aspects of governance, they all agreed that the current co-management system does not allow for “meaningful ownership and control over forest resources” (Nhem and Lee 2019).

An evaluation of participatory forestry governance in the Madhupur Sal forests of Bangladesh found that moderate community participation and low levels of transparency did not translate into empowerment. An implementation gap blocked the devolution of power. Local people believed that most income benefits went to elites who had good relationships with forest officials. In a power analysis, researchers found that the Forestry Department of Bangladesh was “the most powerful and influential actor in every element of

participatory forestry programs.” The main management role of community forestry associations was to provide low-cost labor and support for monitoring and enforcement practices (Subhan Mollick et al. 2018).

These and other examples reflect the constraints that limited and incomplete decentralization imposes on PNRM in many countries. The evidence also highlights additional common, dysfunctional qualities of decentralization as it is implemented. Two of these qualities are “responsibilization” and the creation of new institutional elites.

2. “Responsibilization” and Technical Requirements Hinder Local Democracy

Like the phenomenon of unfunded mandates in federal systems of governance, “responsibilization” refers to the transfer of responsibilities to communities without corresponding attention to actual local capacities or the necessary resources to perform the anticipated tasks. Considerations of cost and efficiency usually underpin responsibilization. For example, responsibilization may involve transferring day-to-day tasks for managing forest resources to local communities as an “economy in governance,” but assigning such tasks without ensuring the required technical and financial resources to accomplish them leaves participation as “an end in itself” (Mustalahti and Agrawal 2020). In these cases, adequate governance capacity is presumed by higher authorities (and taken as a matter of local responsibility), although differences in resources and technical and bureaucratic capacities among community members, especially among women and marginalized groups, may lead to inequitable outcomes or even conflict.

Alternatively, communities may have to manage the financial and transaction costs of engaging technical experts to fulfill key roles. In other instances, if community members are judged to lack technical know-how, they may be excluded from participating in governance.

The case of social forestry in Indonesia illustrates several of the practical difficulties and tensions that can arise through responsibilization. Communities that wish to gain forest management rights must do so through formal government procedures for entry into social forestry, but the state retains decision-making power on forest use and the ability to approve or deny permits. Lacking technical and bureaucratic expertise, user groups must work with “a range of facilitators, forest management unit professionals, and political actors” who possess these crucial skills. The complexities of the licensing process place further demands on candidate communities. Scant resources are available for technical training and services. User groups are said to be “empowered” and responsible for producing community benefits and well-being, despite the evident difficulties and added burdens of addressing these administrative and technical challenges (Erbaugh 2019).

Comparative analyses of experiences from Mexico, Nepal, and Tanzania raise similar issues. In Mexico, a community sawmill enterprise—which focused on increasing production in return for government funding—replaced community forest enterprises that focused on employment. But the operation’s technical demands led to tasks, workloads, and compliance mandates that communities found extremely difficult to fulfill.

In a REDD+ pilot project in Nepal, the community forest users committee was responsible for developing income generating activities under REDD+ social safeguard provisions. *Dalits*, people of the lowest caste, received fish ponds to increase incomes, but aquaculture was neither their choice nor did they receive training in how to raise fish. In Tanzania, in the Village Land Forest Reserve, due to lack of technical expertise, traditional leaders were not recognized in the governance structure, and women were not seen as capable participants in decision-making. In all these cases, the empowerment of local actors through “responsibilization” did not align the actual duties and capabilities needed to produce positive outcomes (Mustalahti et al. 2020).

3. The Creation of New Institutional Elites Undermines Downward Accountability

The new governance arrangements created by decentralization and the adoption of some form of PNRM are not written on a blank slate. On the contrary, local communities have pre-existing, socially and culturally embedded institutions, rules, and norms for natural resource management. The relative effectiveness of PNRM often hinges on the degree to which new institutional structures can integrate with customary institutional practices and traditional leadership patterns. This is often a difficult task, as the recognized merits and prerogatives of traditional leaders frequently diverge from the criteria for efficiency and expertise that government officials and donors prioritize. However, when new sets of decision-makers, with competing influence and power, displace or marginalize customary practices and traditional community elites, there is often a loss of local legitimacy, community cohesion, and an increase in tensions and conflict over participation, rights, and benefits.

The forest sector in Cameroon in the early 2000s exemplified these institutional shifts. The government process for legally creating a community forest required an agreement with a “legalized group,” which

in effect excluded traditional community bodies. The resulting community forest management committees were composed not of recognized elders and chiefs but a “new forestry elite” of former civil servants returning home or educated young men.

These newly influential individuals acted in ways that were upwardly accountable to the state forestry administration, but not downwardly accountable to community members. Few of these leaders had been democratically elected, despite written government procedures that outlined a participatory electoral process. Traditional leaders and the new elites communicated poorly and often clashed. Local leaders perceived government officials to be “resisting decentralization.” The fundamental problem was not failing to acknowledge the superiority of traditional leaders but rather the absence of a transparent and fair process by which local people could choose committee members. Rather than integrating customary institutions, new governance structures supplanted them (Brown and Lassoie 2010).

Within some decentralized initiatives, there is a tension between an intervention’s participatory discourse and the de facto dominance of new institutional bodies focused on technical criteria. In Senegal, the World Bank and other donors funded the Sustainable and Participatory Energy Management Project (PROGEDE) to support decentralization and deliver biomass energy to urban areas. To help implement activities, PROGEDE created a system of Inter-Village Management and Development Committees (IVDMCs). The IVDMCs soon challenged the authority of elected Rural Councils to make key decisions over local forests, and they took significant percentages of the project’s financial and material benefits. In principle, the purpose of the IVDMCs was to implement the technical elements of forest management plans and work directly with village communities. In practice, PROGEDE recentralized authority, as the IVDMCs were mainly responsive to the Forest Department, which often made decisions out of public view.

In a second phase of the project, Rural Council presidents tried to resist the introduction of additional “Associations.” These local leaders took steps to deny quorums for scheduled meetings and, when they could not stop their creation, sought to elect allies to the Associations. These efforts were partly successful, but local governments largely acquiesced to the technical prescriptions of the project’s new institutional elites in order to prevent Forest Department officials from further excluding them from forest governance (Faye 2015).

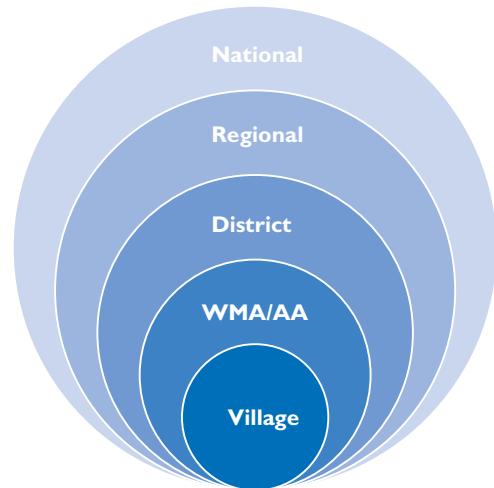


Figure 7: Conceptualized scalar configuration of natural resource governance, with the addition of Wildlife Management Associations (WMA) and Authorized Associations (AA), Tanzania. Adapted from Green 2016.

BOX 3:

SCALE-JUMPING

Decentralization not only creates new institutions but also reconfigures power and the way that it operates at multiple scales. This process is evident in the decentralization of the forest and wildlife sectors in Tanzania. In both sectors, a complex system of nested governance emerged. Multiscalar village-district-regional-national government levels accompanied new institutional roles played by line ministries, Village Natural Resource Councils, Wildlife Management Associations (WMA), Authorized Associations (AA), Village Councils, NGOs, boards of trustees, and other local groups. The WMA governance arrangements, for example, added “Authorized Associations” as a new level of local governance (Figure 7).

These changes in patterns of power created winners and losers and motivated key actors to adjust and “re-scale” their positions to advance their own interests. Each new institutional platform was a potential mechanism for elite capture, self-dealing, and corruption. In Tanzania, as a counter to the new powers of the VNRCs, district authorities used “scale-jumping” to contrive a role in VNRC elections, despite lacking a mandate to do so. Similarly, the Village Council inserted a representative into the VNRC and claimed a role in forest patrol activities. Village Councils sought to re-scale investment and financial benefits away from the WMAs, creating conflicts over revenues. Other scale-jumping moves similarly added to governance dysfunction. “The politics of scaling” often complicates decentralization as a form of resistance by elites to the new distribution of power (Green 2016).

REINFORCEMENT OF SOCIAL HIERARCHIES AND POWER ASYMMETRIES

The institutional arrangements associated with PNRM intertwine with the power asymmetries, gendered norms, and social tensions that already exist in local communities, informal institutions, and broader state-society relations. As a result, despite the participatory design and intended effects of PNRM, operationally new, decentralized institutions often reflect these local power asymmetries in ways that limit their democratic aspirations. Gender inequality is the most prevalent example. But other cases can involve issues like class, caste, and culture. Reinforcement of social norms and power asymmetries in PNRM occur across cultural contexts. However, the considerable influence of these social forces does not mean they are static or invariant. Local PNRM institutions often include mechanisms to increase women's participation and gradually amplify their voices in community deliberations.

4. Gender Inequality

Bordered by Uganda, Kenya, and Tanzania, Lake Victoria has been the site of extensive efforts to establish fisheries co-management through local Beach Management Units (BMUs). Most fishers around the lake are men; women generally work as processors and traders. National guidelines in each country require that at least three of the 9-15 members of BMU executive committees are women. The nominal representation of women on the executive committees is accepted in most communities, and communities appreciate some of the benefits of their participation. For example, communities regard women as more honest, less prone to corruption, and better able to connect with social counterparts through their trading networks.

Gendered norms and practical constraints, however, limit women's power and influence on BMU executive committees. Women have fewer material assets than

men, domestic and child care duties place time constraints on their participation, social and sexual taboos stipulate they should not be near fishing boats, and some men presume that women's lack of capital makes them susceptible to involvement in illegal fishing. Male boat owners effectively control decision-making in the BMUs, and women are often reluctant to express their opinions. Mandated quotas for women represent an incremental improvement, but local gender norms and male domination largely take precedence over the participatory design of Lake Victoria's co-management institutions (Nunan and Cepić 2020) (Box 4).

A similar picture emerged from a multi-country analysis of women's participation in forest management. Where asset differentials between men and women were large, women's participation was low. Women also had lower participation in local forest institutions that required in-kind time donations or user fees. Women were disadvantaged by educational disparities, as membership and participation in forest associations correlated with higher educational levels. The survey found that only 28 percent of forest council members were women, and 15 percent of forest associations were led by a woman. Here again, wealth inequality between men and women was linked to a lower probability of a woman leader. The negative synergies of education, assets, and low participation reflect the systemic, patriarchal spaces in which interventions often operate. Yet low participation rates for women in forest management institutions, especially in leadership positions, appear to come at a cost. The evidence suggests that women contribute significantly to rule-making and manage day-to-day disputes over resource issues more successfully than men (Agarwal 2009; 2010), and the presence of women in leadership positions is "highly correlated with lower levels of disruptive conflict" (Coleman and Mwangi 2013).

BOX 4:

PNRM, GENDER, AND MARGINALIZATION

Recent literature on PNRM reveals some attempts to determine if including women and other marginalized groups in environmental project activities achieves greater democratic outcomes in NRM. However, these efforts have yet to produce greater shared power and participation.

Beyond considering marginalized populations when designing an activity, more robust normative interventions have established quotas for women and other marginalized groups and increased diversity in decision-making. Nunan and Cepić (2020) studied the effects of women's representation and participation on fisheries co-management on Lake Victoria, East Africa, where a project used a quota for women's minimum inclusion in community-based co-management structures. The formation of Beach Management Units required one-fifth to one-third of committee members to be women. The study found that the quota-based, descriptive representation of women (physical representation) does not translate into effective substantive representation (representation based on shared values) (Pitkin 1972).

Communities often regard women as having more moral authority and integrity than men, and women's social networks are different and denser than those among men. The stronger bonds among women in social networks can help to strengthen the collective action necessary for project activities. Yet women participants remain constrained by structural issues related to their gender roles such as time poverty (due to caregiving or home care duties, for example), taboos, and other gendered norms.

Modest inclusion efforts persist despite evidence that consistently demonstrates that social and cultural norms significantly hamper women's and marginalized groups' full participation in NRM. Activities fail to account for social structures that perpetuate the unequal division of responsibility at the household level, reinforce the effects of economic inequality, codify ascriptive hierarchies, and perpetuate pervasive cultural norms that keep women subordinate to men in decision-making and access to land and resources.

Diversity in decision-making can create more representative outcomes. Yadav, Bigsby, and MacDonald (2017) studied the decision-making of the executive committees of community forestry user groups (CFUG) in Nepal to determine whether greater inclusion of poor households on these committees led to policies that allowed for more representative distribution of benefits. CFUG executive committees are designed to include members of rich, medium, and poor households, as well as the *Dalit* (discriminated, oppressed) and *Janjati* (Indigenous) castes. The results showed that when poor and disadvantaged households can influence the formulation of rules, regulations, and practices through executive committee positions, the harvesting period of community forestry increased—a favorable outcome for these groups.

Greater inclusion of women in decision-making groups also creates opportunities for women to challenge existing social norms that prevent them from full participation. Giri and Darnhofer (2010) offer a success story in their study of community forestry user groups in rural Nepal. The study notes that women typically remain excluded from active participation in decision-making, despite increased efforts for inclusion. Yet, the Nepali women in the study subtly increased their decision-making standing at the household and community level by participating more at meetings, demonstrating their voice and agency, and making inroads in a society that has historically discouraged their full participation.

5. Class, Caste, and Culture

Evidence on the predominant form of social forestry in Indonesia, which covers 1.7 million hectares, highlights how socioeconomic contexts can affect participation and equity in PNRM. Although social forestry is intended to increase broad-based community participation and engage vulnerable populations, it did not correlate with higher levels of participation in village meetings. Rather, the level of participation was linked to higher levels of well-being and pre-existing support for conservation. In effect, community-based forestry management elicited the participation of social elites and built on existing institutions—raising concerns that the practice was reinforcing existing inequalities rather than supporting more inclusive local governance.

More active participation did take place in areas with subsistence-based, Indigenous groups with traditions of communal decision-making. Possible reasons for the disconnect between social forests and higher levels of participation may include the higher relative transaction costs for poor community members, lack of knowledge of conservation goals, and local concerns that support for conservation might translate into reduced forest access. At a minimum, the experience with social forestry in Indonesia indicates that institutional arrangements for PNRM need to account for and address existing social inequalities and overcome participation and communication barriers to avoid levels of participation that fall far short of project goals (Friedman et al. 2020).

Comparative work on the challenges of empowering women in Tanzania and Dalits in Nepal also reflects the limitations of a “blueprint approach” to PNRM in the forestry sector. Both countries have stated policies to support disadvantaged groups and formal provisions for their representation in local committees and assemblies. But cultural norms and social impediments reduce their practical effect.

In Tanzania, women are reasonably well-represented on committees. But because they hold quota-based rather than elected positions, women have less power. Women are reluctant to speak when their husbands are present or when their opinions run contrary to the male-dominated group consensus.

In Nepal, due to low levels of literacy, Dalits are unfamiliar with committee rules and regulations and do not comment on financial or political matters. Time constraints limit their participation in community forest development activities. Despite these recurrent constraints and frustrations, over the course of the past 20 years, both groups say that their political awareness has increased, and their participation has improved.

In both countries, exceptional individuals have occasionally reached leadership positions. Women and Dalits are now better informed about their rights, but “duty bearers (elites and other powerful groups) have not changed their behavior” or taken tangible steps to share power (Hyle, Devkota, and Mustalahti 2019).

GLOBAL ENVIRONMENTAL GOALS, EXTERNAL ACTORS, AND PNRM: CHALLENGES FOR REDD+

The past decade has seen an acceleration of efforts to slow global warming by preserving forests that sequester carbon and reduce CO₂ in the atmosphere. The principal global strategy in support of these efforts has been the scheme for REDD+, which compensates countries and communities for forest protection. REDD+ includes the social safeguard guidelines of the 2010 Cancun Agreements, which call for “respect for the knowledge and rights of Indigenous peoples and members of local communities.” While these safeguards align in principle with PNRM’s focus on inclusivity, rights, equity, and justice, the evidence suggests that REDD+’s track record is mixed, at best, and often appears to work against democratic outcomes. Efforts to translate REDD+’s global environmental goals into locally implemented project activities have often failed to grapple successfully with national political dynamics and the complexity of local communities, and at times have undermined local elected authorities. The imperative to address climate change will likely multiply the number of REDD+ projects and other payment-for-ecosystems initiatives—but examples from the literature demonstrate why concerns remain about the effects of REDD+ on local governance and community well-being.

6. External Actors with Global Environmental Goals like REDD+ Underestimate Community Complexities and May Undermine Elected Local Government

Vietnam has been one of the most active countries participating in piloting and implementing REDD+. The country has gone through a series of very different forest management regimes, from traditional customary tenure to the nationalization of forests in 1976, and support for forest protection and state forest enterprises in the early 2000s. In communities of the central highlands, where the population is a mix of a minority native ethnic group (K'ho) and a dominant migrant ethnic group (Kinh), a Forest Management Board (FMB) was created. A national Payment for Environmental Services (PES) program paid local people to participate in patrols to prevent illegal tree cutting and wildlife hunting. The REDD+ project built upon the existing PES program structure, allowing the FMB to administer on-the-ground activities.

In line with REDD+ governance guidelines, implementers held awareness-raising meetings, conducted training on safeguards, and fulfilled free, prior, and informed consent protocols. But the project community was riven by disputes between the Kinh and the K'ho, with the latter group seeking to reclaim their ancestral lands. K'ho villagers were also at odds with the FMB over what they believed to be unfair tree-cutting policies and payments. Despite good intentions and participatory structures, the REDD+ intervention's community discussions and program activities inflamed these ethnic and government-community tensions, with the various stakeholders now justifying their competing claims according to different notions of customary, national, and global norms, laws, and environmental justice. The normative and procedural merits of global REDD+ safeguards could not cope with these existing state-society tensions, institutional conflicts, and historical ethnic grievances over land and forest rights (Hoang, Satyal, and Corbera 2019).

Experiences from Nigeria and Kenya have produced accounts of REDD+'s negative effects on elected local government. In Nigeria, powerful state governors, sometimes called "political godfathers," capture and control federal, state, and local tax revenues. In Cross River State, the site of the first state-level REDD+ pilot program, the governor enacted a logging ban in anticipation of REDD+ funding and the associated legitimacy derived from support of the international community and NGOs. The governor also worked with local chiefs who had influence over local land use—but local elected governments were largely marginalized. With the approval of REDD+ officials, local NGOs facilitated the representation of local people in project activities, based on the rationale that local government officials were corrupt. REDD+ personnel even stated that "strengthening local democratic governance is not the main priority of donors." Unlike local government officials, however, NGOs could not be held accountable by local people through electoral processes (Nuesiri 2017).

In Kenya, a for-profit conservation organization implemented the REDD+ project, and began working with chiefs and Local Development Committees (LDCs). But the project soon "derecognized" these groups and shifted to a parallel structure of specially created Local Carbon Committees (LCC) and community-based organizations (CBOs). The new project governance arrangements also largely excluded elected local councilors. LDCs were often overburdened and corrupt, and local communities perceived LCCs and CBOs to be more accountable and responsive to issues raised by the REDD+ project activities. Yet LDCs and councilors represented the full range of constituent concerns, while LCCs solely focused on reducing deforestation and generating carbon credits. Critics saw the REDD+ project as circumventing elected local governments and undermining the institutional goals of Kenya's 2010 constitution, which sought to empower decentralized and accountable government institutions (Chomba 2017).

Outcomes have been mixed, however. More recent results from Tanzania suggest that governance under REDD+ may gradually improve over time, although these advances may be more evident in some areas of governance than others. Participatory Forest Management has been practiced in Tanzania since 2002, and REDD+ interventions have built on PFM institutions to design project activities that generate carbon offsets. The methodical process of developing the institutional governance framework includes preparing the PFM plan, establishing committees, passing by-laws, defining forest reserve boundaries, and gaining FPIC from the project communities. Before and after surveys in 2010 and 2014 in Kilwa district

showed generally positive effects on forest governance in relation to social cohesion and organization, quality of decision-making, and knowledge of PFM and its relationship to project activities. The villages that had participated in the REDD+ project the longest—and thereby benefited the most from timber revenues—showed the strongest improvements in governance. Participation in village committees and leadership, however, remained male-dominated, with uneven access to project information. As in other examples of PNRM, socio-cultural barriers to improved democratic outcomes appeared to be among the most difficult to surmount in a short time frame (Corbera et al. 2020).



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Lessons

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Participatory natural resource management takes place in very diverse circumstances, spanning a range of geographies, socio-political contexts, local environmental conditions, and livelihood activities. PNRM's links to democratic outcomes are similarly differentiated but can be grouped within recognizable patterns. In most cases, PNRM operates in a contested space between the stated or legislated commitments of state authorities to empower local resource users, the often weak or flawed implementation of those commitments, and the efforts of resource users and communities to ensure their participation and influence in NRM planning, decision-making, and execution. Although often promoted for reasons of economy and efficiency, PNRM is also fundamentally about power and politics, the negotiated and iterative process of making institutions for environmental governance more inclusive and resource outcomes more equitable.

The linkages between PNRM and democratic outcomes present a variable mix of positive and negative relationships. A number of enabling conditions correlate with innovation and positive change, and some notable constraints contribute to suboptimal or negative outcomes.

Expanding the Sphere of Collective Action and Democratic Interactions

Many communities engaged in PNRM face challenges in moving from blueprints based on institutional designs created by government planners and international donors to the actual implementation of local environmental governance. Organizational capacities, technical expertise, and material resources are frequently in short supply. While governments do recognize and, to some extent, address these gaps, their efforts are consistently inadequate. Many cases in the evidence review document the crucial role of NGOs in filling the “implementation gap” that characterizes these early stages of PNRM. NGOs frequently help communities to organize community members, identify priorities, clarify agendas, and develop leadership and advocacy skills. These NGOs are generally local organizations that have the experience, credibility, and trust necessary to cooperate and work through conflicts at the community level. NGO partners also often have contacts and prior experiences that help to facilitate communication and bridge relationships with government agencies and donors. While there are examples of successful endogenous PNRM in areas with limited interactions with government, most instances of effective PNRM involve communities receiving technical inputs and training from the nongovernmental sector.

POLITICAL ALLIANCES, POLITICAL SPACE, AND SOCIAL CAPITAL

When community capacities for collective action are strengthened and placed on a more stable footing, PNRM activities often diversify and expand to include interactions with other communities, government agencies, local and national NGOs, and, at times, the private sector. The effectiveness of these horizontal and vertical interactions increases when the political space for PNRM is increased or made more predictable by supporting laws and regulations such as land tenure

or other resource rights. In other cases, windows of opportunity arise from the emergence and election of political parties that support grassroots democracy. Even when political space is limited, the practical economic and political needs of governments may lead them to turn to local co-management institutions as partners in maintaining or restoring threatened natural resources.

As it evolves, PNRM is likely to increase social capital and the density of social networks among civil society actors concerned with resource-related issues like education and awareness, monitoring and surveillance, income generation, empowerment of women and youth, and peace and conflict. Communities with pre-existing social capital from cultural bonds or vocational associations may apply those previous collaborative experiences to new forms of cooperation based on PNRM.

In these favorable circumstances, PNRM can connect and establish collaborations with a broader range of actors, developing synergies that contribute to positive democratic outcomes. These connections may include:

- Inter-community groups and associations.
- Organizations for grassroots empowerment.
- Organizations for women and youth.
- Regional, national, and international environmental advocacy groups.
- Indigenous rights organizations.
- Government agencies whose responsibilities overlap with but go beyond NRM (e.g., law enforcement, women’s rights, economic development, health and education).
- Private sector groups supporting community development and corporate social responsibility.

BROADER DOWNSTREAM EFFECTS

The evidence shows that, like other democratic processes, the evolution of PNRM is non-linear and subject to periods of breakdown, grievances, reorganization, and policy and regulatory reform. When PNRM is sustained for some period of time, however, the institutional evolution and adaptation of PNRM produces downstream effects that feed into broader democratic developments, as has occurred in countries like Kenya, Tanzania, Namibia, India, Nepal, and Brazil (Cinner and McClanahan 2015; Nelson et al. 2020; MET/NACSO 2020; Salerno, Andersson, et al. 2021; Salerno, Romulo, et al. 2021; Das 2011; Laudari, Aryal, and Maraseni 2020; Anderson et al. 2013; Gonzales Tovar et al. 2021).

In crisis situations, PNRM also may fill a political vacuum to provide stability and mitigate conflict. In Nepal, during the years of Maoist control of the countryside, community forest user groups provided a stabilizing presence, as rebel leaders knew many CFUG leaders and respected the transparency of their management of community resources (Nightingale and Sharma 2014). In Timor-Leste, in the aftermath of violence, displacement, and land disputes, there was an urgent need for national reconciliation. Because the new state could not meet this challenge, communities turned to customary forms of NRM to help guide dialogue and

provide the necessary settings for positive, peaceful social interactions (Ide, Palmer, and Barnett 2021). Experiences from national parks in Latin America and Africa also show that when stakeholders perceive PNRM to be trustworthy and transparent, political spaces become more conducive to open dialogue, negotiation, and conflict reduction (De Pourcq et al. 2015; Soliku and Schraml 2018).

POWER AND CULTURE: FORMAL AND CUSTOMARY INSTITUTIONS

As issues of rights to land and access and use of natural resources in and around Indigenous lands become more contentious (e.g., FIP and adelphi 2021), questions about how formal and traditional governance institutions can work together are increasingly important. Because of the often indivisible nature of cultural practices (e.g., kinship, clans, ceremonies) and the management of natural resources in Indigenous communities, participatory and inclusive decision-making is particularly significant. However, the expectations of formal and customary authorities about the type and adequacy of participatory processes, as well as their relationship to other levels of governance, often diverge. The evidence from countries like Brazil, Bolivia, and Indonesia indicates that PNRM can help to bridge these divides and find innovative ways to integrate customary practices within multilevel governance.

BOX 4:

TEN ENABLING CONDITIONS FOR PNRM LINKAGES TO POSITIVE DEMOCRATIC OUTCOMES

1 Developing or strengthening communities' internal capacities for collective action by engaging early organizational support from local NGOs (or government agencies).

2 A bridging role by NGOs (or government agencies) to bring together actors from formal and customary institutions and other stakeholders to engage in dialogue and problem-solving.

3 Encouraging recognition by government authorities and partners that it is in their political and institutional interests to work collaboratively with communities to solve NRM problems.

4 Fostering alliances among communities or with regional and national environmental organizations for advocacy and mobilization around environmental (and non-environmental) issues of shared concern.

5 Capitalizing on political windows of opportunity that increase the political space for PNRM, including legal reforms that empower local communities, or political parties that come to power based on grassroots support.

6 Supporting progressive increases of social capital (often building on pre-existing social capital), with expanding social networks and diversification of government relationships.

7 Increasing inter-community linkages among women's groups (sometimes building on trading networks) based on strong social ties and shared problem-solving.

8 Retaining or repurposing customary institutions of Indigenous Peoples and local communities to work with formal institutions in nested, multiscale governance.

9 Bolstering political demonstration effects of PNRM innovation and successes that lead to replication and scaling of grassroots democracy.

10 Providing the time and resources necessary to establish PNRM credibility and legitimacy, making possible longer-term institutional development through experiences with failures, resistance, learning, and adaptation.

Incomplete Power Sharing, Normative Constraints, and External Actors

While PNRM has many linkages to positive democratic outcomes, the evidence shows that PNRM is also associated with various suboptimal or negative outcomes. These outcomes stem from both structural state-society power relationships and specific local political, social, and ecological factors. Higher-level governance often negatively affects PNRM through chronic flaws in the prevailing political system such as patronage, rent-seeking, and identity group biases. At the local level, although certain kinds of institutions are common across cases (e.g., natural resource committees, co-management organizations, user groups), their impact on democratic outcomes often depend on the endogenous effects of customary governance arrangements and local culture. These may include deeply embedded socio-cultural patterns such as gender inequality and caste or class discrimination. In addition to these local and national factors, PNRM increasingly plays a role in implementing global environmental goals like REDD+. Despite shared goals of reducing deforestation, the performance of REDD+ interventions has been mixed in terms of perceived benefits for local communities.

PERSISTENT ELITE POWER

The flawed and incomplete forms of decentralization that have weakened and distorted the implementation of PNRM are not specific to natural resource management. Broader critiques of decentralization across sectors in Sub-Saharan Africa, for example, have noted that, absent training, financial resources, and genuine local autonomy, decentralization has repeatedly failed to meet expectations (Erk 2014). But given constitutional provisions that frequently place ultimate authority over natural resources like forests, marine resources, and wildlife in the hands of the state, decentralized NRM is a distinctively difficult political challenge.

As described above, there are abundant examples in the literature of central authorities retaining key powers over NRM despite formal commitments to devolution or co-management arrangements. Elites maintain their prerogatives through a range of mechanisms, involving both visible power (formal rules and procedures of decision-making) and hidden power (controlling who occupies decision-making bodies and what gets on the agenda) (VeneKlasen and Miller 2002). The asymmetrical division of rights and responsibilities between government officials and local communities often results in resource users having heavy operational responsibilities, while elite officials and their bureaucratic allies control strategic decisions over land use, long-term resource planning, and revenues. The weak implementation of PNRM in what is essentially an undemocratic context often leads to suboptimal or negative linkages to democratic outcomes.

The institutional changes and intended shifts in power associated with PNRM are both a challenge and an opportunity for influential actors at all levels, many of whom maneuver to maintain their ability to advance their interests. New decision-making bodies such as executive committees are often dominated by men with the education, language skills, and donor connections that make them expedient and favored choices. In response to shifts of power among levels of governance, politically savvy actors “scale jump” to insert themselves in newly established sites of power that allow them to continue to exert their influence (Green 2016). These machinations of visible and hidden power detract from the devolution of power that is meant to produce democratic outcomes in PNRM interventions.

REPRODUCING INEQUALITY

Local socio-cultural norms also may run counter to meaningful participation and inclusion in PNRM. Community organizations for PNRM often reproduce these hierarchies of power in new institutional forms. Many articles describe systematic constraints on women's opportunities to express opinions, make decisions, and assume leadership roles. Nominal quotas for the participation of women are not uncommon in PNRM, but many factors reduce their practical effects. Limitations on women's assets and ownership rights reduce their power and influence. Expectations about daily work tasks, along with child-rearing obligations, contribute to women's time poverty and create barriers to full engagement. With unequal representation, women often receive fewer benefits, and communities do not realize women's potential contributions to rule-making, conflict management, and stability. While advances in women's roles in PNRM are sometimes noted, local cultural norms outside of environmental governance often make efforts at improvement a form of "bargaining with patriarchy" (Kawarazuka, Locke, and Seeley 2019).

Groups marginalized by ascriptive identity or class also face forms of exclusion. Even when these groups take part in decision-making, dominant community members may ignore their input, capacities, and preferences (Mustalahti et al. 2020). Marginalized groups often rely more directly and heavily on natural resources for their livelihoods than members of executive committees, who may own or control larger and more diversified assets. As a result, the impact of restrictions on resource use to promote conservation may fall disproportionately on lower castes and classes who have limited influence on the design and implementation of rules. There is evidence, however, that including these groups on PNRM decision-making committees helps create natural resource rules that are more favorable to poorer resource users.

WHOSE AGENDA? EXTERNAL ACTORS AND LOCAL CONTROL

The multiscalar intersections of PNRM are most clearly at play in interventions promoted by external actors to achieve goals linked to climate change, conservation, and sustainable use of natural resources. Internationally supported measures like REDD+ are implemented through public and private linkages with national governments, ministries, provincial leaders, and local communities. These actors negotiate rights, responsibilities, and benefits, and then implement projects—well or badly—in local communities. The evidence shows that tensions often arise between the environmental goals of external actors and the multifaceted livelihood and cultural priorities of communities. Historical legacies, intra-community social and political rifts, and competing understandings of environmental goals and economic justice can lead to miscommunication and missteps that produce suboptimal or negative democratic outcomes.

The temptation is to circumvent these complications by either working with compliant elites at different scales or by creating new, project-specific institutions. Supportive, high-ranking government officials, for example, may support REDD+ in hopes of using their patronage networks to realize benefits for themselves and their allies. Newly created local committees may be designed to meet project requirements for expertise and managerial efficiency. NGOs may take on areas of coordination and oversight. But these apparent expediencies may displace or disrupt the normal functioning of local government and the mandated responsibilities of elected officials.

Implementation challenges also involve democratic norms that are part of REDD+ governance standards but are not practiced in many project communities, especially those related to women's participation and gender equality. This dilemma is captured by Samndong and Kjosavik (2017) when they observe: "Making REDD+ gender transformative...depends on how REDD+ actors can be more effective in fostering gender equity by manipulating the existing socio-cultural norms." These kinds of knotty scenarios indicate that normative differences can complicate questions about the linkages between PNRM and democratic outcomes.

BOX 5:

EIGHT CONSTRAINTS ON PNRM WITH LINKAGES TO SUBOPTIMAL/NEGATIVE DEMOCRATIC OUTCOMES

1 Decentralization of NRM by central government authorities is incomplete or flawed, with key powers of decision-making retained by elite decision-makers and government agencies.

2 Decentralization of NRM is motivated by the preferences of donors and other external actors, with local elites seeking to benefit from political support, patronage, and rent-seeking opportunities.

3 Through “responsible,” obligations for NRM implementation are transferred to local communities without the proportionate transfer of necessary resources, while elites control key decision-making and women and marginalized groups are further disadvantaged.

4 New governance arrangements under decentralization create “new institutional elites” who are upwardly accountable to higher level government but not downwardly accountable to local communities.

5 As a form of resistance to the new distribution of power, dominant political actors engage in “scale-jumping” to reassert their power in new institutional niches at different scales.

6 Patriarchal gender norms in local communities limit women’s participation, voice, and decision-making power in NRM committees, undermining democratic practices and sidelining women’s contributions to rule-making and conflict management (both of which show women performing better than men).

7 Socio-cultural norms limit the participation, voice, and decision-making of individuals deemed of lower caste or class, depriving them of input on decisions pertaining to their labor and benefits.

8 External actors supporting international initiatives like REDD+ fail to take into account national political dynamics and the complexity of local communities, leading to miscommunication and conflict.

Knowledge Gaps and Future Research

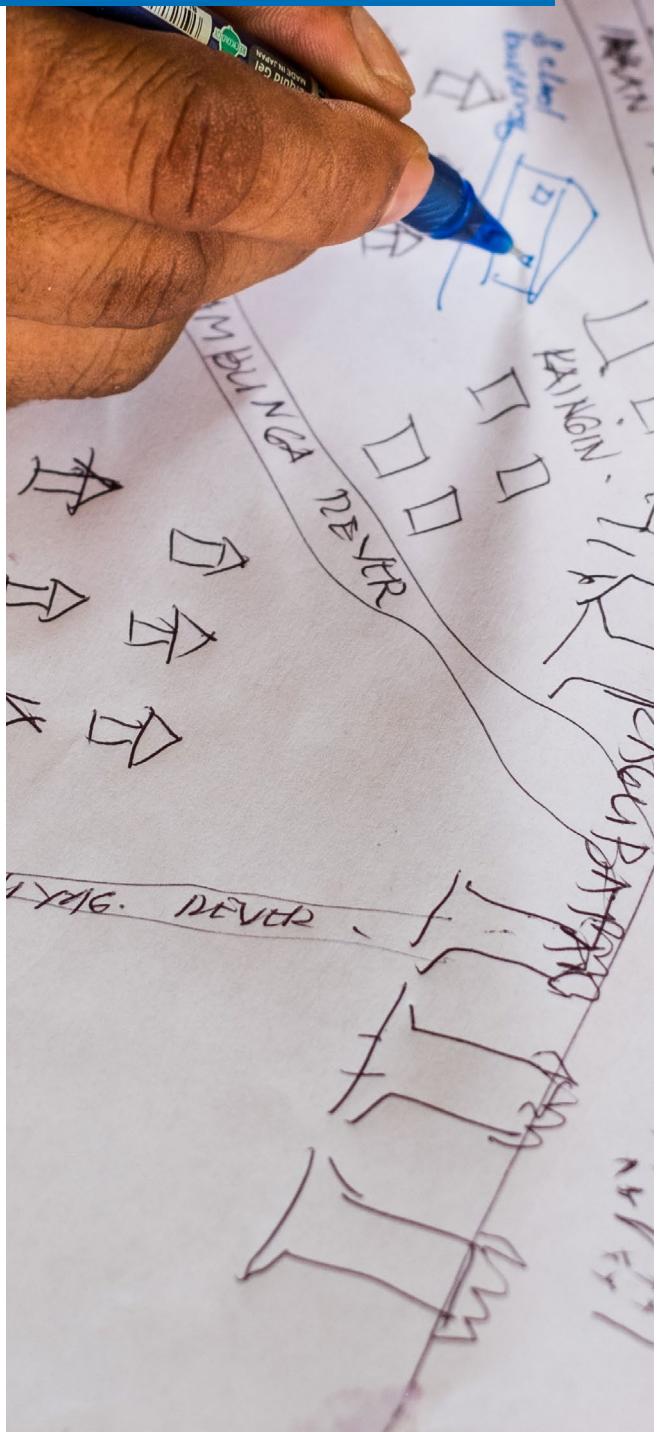


PHOTO CREDIT: JASON HOUSTON/USAID

As noted above, it is important to recall the limitations of the evidence base of the articles reviewed in terms of reliability, bias, and the strength of causal linkages. Most articles described mechanisms and impacts based on fieldwork, surveys, and qualitative or mixed methods, rather than experimental, causal analysis. Nevertheless, they provide a rich source of empirical information and insights from which we have distilled key themes and patterns that inform a more substantive consideration of the linkages between PNRM and democratic outcomes. In the time frame covered by the articles (2005-2020), the discussion surrounding PNRM clearly evolved. Research placed a growing emphasis on institutions and power, included more detailed discussions of devolution and decentralization, paid greater attention to the complexity of PNRM-related policy and legal regimes, and acknowledged the need to take more explicitly into account the impact of PNRM on women and marginalized groups.

While the evidence base on links between PNRM and democratic outcomes has grown, knowledge remains relatively shallow in many areas. PNRM can significantly contribute to democratic outcomes, but there is no ready-made blueprint for success. The likelihood that programs will produce positive outcomes strongly correlates with a favorable mix of enabling conditions and the relative absence of key political and socio-cultural constraints. Underlying the importance of these factors is the fact that PNRM is not just about inclusion and participatory procedures but also fundamentally a matter of restructuring power.

The initial picture of enabling conditions suggests important questions for further investigation, including the following:

- Under what circumstances is the engagement of the nongovernmental sector for organizational support and cross-sectoral bridging likely to be effective?
- Why and when do government authorities recognize that PNRM aligns with their political and institutional interests?
- How do communities engaged in PNRM mobilize to form alliances to advance their interests and take advantage of favorable political developments?
- What circumstances and actions facilitate the successful coordination of customary institutions with formal institutions and multiscale governance?

A central assumption of PNRM is that it can improve equity and empowerment of women and marginalized groups. While the evidence base does provide insight into the dynamics between state and local authorities and the roles and responsibilities of local users, articles tend to examine local users as a single group, rarely disaggregating impacts across racial and ethnic categories, demographics, age groups, or gender.

In particular, while the interventions examined often consider women in project design and implementation, and some articles noted statements and made observations about gender inequality, relatively few studies explicitly examined impacts on women. This is a major knowledge gap that limits future design and adaptation of PNRM to better serve women and marginalized groups and provide safeguards against exacerbating existing issues and inequities.

There is a strong evidence base on the recurrent flaws and dysfunctions of decentralization, but comparatively little on effective local forms of resistance to its negative effects within PNRM. This may be in part because in many cases decentralization appears to be as much the result of the expectations of international donors and institutions—the World Bank spent \$7.4 billion supporting decentralization between 1990 and 2007 (Lewis 2014)—as a reflection of local demands.

In addition, some studies note that, despite its many shortcomings, decentralization does provide new opportunities and roles for local people in NRM. This includes nominal membership on natural resource committees for women and marginalized groups.

In general, however, the articles identified political and socio-cultural constraints that also point toward several areas for deeper inquiry:

- What circumstances and actions help communities to develop multisectoral relationships at different levels of governance to advance their interests?
- What are the conditions and actions by which successful PNRM interventions avoid elite capture of new institutions and work effectively with local government and customary institutions?
- What circumstances and actions help women and marginalized groups leverage PNRM to resist exclusionary and discriminatory socio-cultural norms?
- What approaches are most effective in implementing REDD+ programs with attention to the complexity of local communities and functioning of elected local government?

In addition to these issues, the evidence base remains skewed toward a few countries and is heavily focused on forests. More evidence from Latin America, the Middle East, and under-represented areas of Africa, along with recent developments in fisheries co-management and [Other Effective Area-Based Conservation Measures \(OECM\)](#), would help to round out the picture.

Perhaps most significantly, while democracy is a multifaceted process that evolves over time, most of the evidence base looks at relatively limited time frames and rarely connects PNRM interventions to the broader political context. Hence, the literature would be strengthened by longitudinal research that seeks to understand PNRM as a series of democratic experiments that are both conditioned by and reveal the fault lines and accomplishments of national political systems.

Conclusion



Implications for Integrated Environmental Programming

A review of the evidence finds diverse and consequential links between PNRM and democratic outcomes.

Some form of PNRM is used to implement key aspects of the entire suite of environmental programming: forests, fisheries, wildlife, parks, rangelands, climate mitigation, climate adaptation, and land and resource governance. PNRM is also likely to be an important part of responses to emerging issues related to biodiversity and the urban-rural interface (Zeller, Perry, and Göttert 2019).

PNRM also has links to important issues and components of democratic governance. We observed the following examples of positive linkages with democratic governance:

- New models of government-community collaboration (Southeast Asia, Honduras).
- Political influence in national debates (Amazon in Brazil, reconciliation in Timor-Leste).
- Village governance improvements (Tanzania).
- Increased women's participation and improvements in rule compliance (India, Nepal).
- Political representation of Indigenous interests and rights (Indonesia, Bolivia).
- Sectoral reforms (Namibia).
- Political crisis management (Nepal).
- Conflict resolution (Colombia, Ghana).
- Democratic local practices in non-democratic states (Vietnam, Cambodia).

Conversely, examination of the linkages between PNRM and suboptimal or negative democratic outcomes opened windows onto serious challenges to democratic performance:

- Persistent elite power despite decentralization (Zambia, Botswana, Mexico, Bangladesh).
- Transfer of responsibilities without resources (Indonesia, Mexico, Tanzania).
- Elite capture of institutional reforms (Cameroon, Senegal).
- Gendered norms in community institutions (Uganda, Kenya, Bolivia, Mexico, etc.).
- Socio-cultural norms linked to marginalization (Indonesia, Nepal, Tanzania).
- Climate change interventions (REDD+) causing local tensions (Vietnam, Nigeria, Kenya).

These diverse linkages demonstrate why PNRM is a relevant focus of attention for development specialists working on environmental issues, democratic governance, land and marine tenure, climate change, conflict prevention, gender and social inclusion, and other related sectors. The reason to prioritize PNRM is not the assured democratic benefits it produces—this evidence review has shown that those benefits are possible but contingent—but rather its centrality across issue-areas and within participatory program designs.

With the mounting evidence of ecological and climate crises from the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) and the UN Intergovernmental Panel on Climate Change (IPCC), international organizations and donors are setting ambitious goals for land and water conservation, climate mitigation, and climate adaptation. Programmatic initiatives like REDD+ and Nature-based Solutions (NbS) are likely to expand. These initiatives often promote land-use interventions in areas inhabited by rural populations and Indigenous Peoples whose

territorial and land rights may be unrecognized or weakly enforced. At the same time, recent initiatives receiving global attention like the Principles for Locally Led Adaptation Action (Global Commission on Adaptation 2021) and the Natural Resource Governance Framework issued by IUCN (Springer, Campese, and Nakangu 2021) are normative benchmarks that will inform environmental programming in the years ahead. These efforts reflect a strong international consensus and echo the aspirations of PNRM.

What is apparent from this evidence review, however, is that from a governance standpoint, REDD+ has had disappointing results. More recently, analysts have expressed concerns that NbS will similarly fail to ensure rights and equitable benefits for Indigenous Peoples and local communities (Tugendhat 2021). Supporters of the “30x30” target—which advocates equitably conserving 30 percent of marine habitats in marine protected areas and 30 percent of terrestrial areas and inland waters by 2030—are sensitive to these misgivings. In September 2021, a [World Conservation Congress motion](#) called for “the full and effective participation of Indigenous Peoples” and encouraged state authorities to “implement area-based targets in ways that are appropriate to regional conditions through participatory, knowledge-based spatial planning processes.”

These challenges, however, highlight a persistent disjuncture between ambitious initiatives to address climate change and ecosystem health and the

modest track record of external actors working with Indigenous Peoples and local communities to develop effective and participatory natural resource governance mechanisms. Left unaddressed, this governance gap will likely reduce the effectiveness of global environmental interventions and contribute to grievances and instability in rural communities and among Indigenous groups—with broader downstream effects on democracy.

The patterns, lessons, and knowledge gaps identified in this evidence review can inform more focused thinking on these emerging challenges of PNRM and democracy. They add to previous work by USAID on stakeholder engagement at the crossroads of environment and democracy (USAID 2018; 2020a) as well as pilot activities to integrate PNRM and climate adaptation with conflict management and peacebuilding (USAID 2020c).

This evidence review has mapped and clarified the types and range of PNRM impacts on democracy as a preliminary step toward developing integrated programming. But much more remains to be learned about the mechanisms of change in specific contexts. Building on this evidence base, further investigation of knowledge gaps through longitudinal studies and political economy analysis can help to identify program options and recommendations to realize the full potential of PNRM in addressing growing environmental problems and the challenges of democratic governance.

References



- Acemoglu, Daron, and James Robinson. 2019. *The Narrow Corridor: States, Societies, and the Fate of Liberty*. New York: Penguin Press.
- Agarwal, Bina. 2009. "Gender and Forest Conservation: The Impact of Women's Participation in Community Forest Governance." *Ecological Economics* 68 (11): 2785–99. <https://doi.org/10.1016/j.ecolecon.2009.04.025>.
- . 2010. "Does Women's Proportional Strength Affect Their Participation? Governing Local Forests in South Asia." *World Development* 38 (1): 98–112. <https://doi.org/10.1016/j.worlddev.2009.04.001>.
- Agrawal, Arun, and Elinor Ostrom. 2001. "Collective Action, Property Rights, and Decentralization in Resource Use in India and Nepal." *Politics & Society* 29 (4): 485–514. <https://doi.org/10.1177/0032329201029004002>.
- Anderson, Jon, Michael Colby, Michael McGahuey, and Shreya Mehta. 2013. "Nature, Wealth, and Power 2.0: Leveraging Natural and Social Capital for Resilient Development," U.S. Agency for International Development. <http://rmportal.net/library/content/nwp-2.0>.
- Asmin, Ferdinal, Dudung Darusman, Iin Ichwandi, and Didik Suharjito. 2017. "Social Capital of Parak and Rimbo Management in West Sumatera." *Jurnal Manajemen Hutan Tropika* 23 (3): 140–49. <https://doi.org/10.7226/jtfm.23.3.140>.
- Borrini-Feyerabend, Grazia, and International Institute for Environment and Development, eds. 2004. *Sharing Power: Learning-by-Doing in Co-Management of Natural Resources throughout the World*. Eschborn: GTZ.
- Brooks, Jeremy, Kerry Ann Waylen, and Monique Borgerhoff Mulder. 2013. "Assessing Community-Based Conservation Projects: A Systematic Review and Multilevel Analysis of Attitudinal, Behavioral, Ecological, and Economic Outcomes." *Environmental Evidence* 2 (1): 2. <https://doi.org/10.1186/2047-2382-2-2>.
- Brown, H. Carolyn Peach, and James P. Lassoie. 2010. "Institutional Choice and Local Legitimacy in Community-Based Forest Management: Lessons from Cameroon." *Environmental Conservation* 37 (3): 261–69. <https://doi.org/10.1017/S0376892910000603>.
- Buffum, B., A. Lawrence, and K. J. Tempel. 2010. "Equity in Community Forests in Bhutan." *International Forestry Review* 12 (3): 187–99. <https://doi.org/10.1505/ifor.12.3.187>.
- Cassidy, Lin. 2021. "Power Dynamics and New Directions in the Recent Evolution of CBNRM in Botswana." *Conservation Science and Practice* 3 (1): e205–e205. <https://doi.org/10.1111/csp2.205>.

- Cheng, S. H., C. Augustin, A. Bethel, D. Gill, S. Anzaroot, J. Brun, B. DeWilde, et al. 2018. "Using Machine Learning to Advance Synthesis and Use of Conservation and Environmental Evidence." *Conservation Biology* 32 (4): 762–64. <https://doi.org/10.1111/cobi.13117>.
- Child, Brian, and Grenville Barnes. 2010. "The Conceptual Evolution and Practice of Community-Based Natural Resource Management in Southern Africa: Past, Present, and Future." *Environmental Conservation* 37 (3): 283–95. <https://doi.org/10.1017/S0376892910000512>.
- Chomba, Susan. 2017. "Choices Have Consequences: REDD+ and Local Democracy in Kenya." *Conservation and Society* 15 (4): 400–413.
- Cinner, Joshua E., and Tim R. McClanahan. 2015. "A Sea Change on the African Coast? Preliminary Social and Ecological Outcomes of a Governance Transformation in Kenyan Fisheries." *Global Environmental Change* 30: 133–39. <https://doi.org/10.1016/j.gloenvcha.2014.10.003>.
- Coleman, Eric A., and Esther Mwangi. 2013. "Women's Participation in Forest Management: A Cross-Country Analysis." *Global Environmental Change* 23 (1): 193–205. <https://doi.org/10.1016/j.gloenvcha.2012.10.005>.
- Collaboration for Environmental Evidence. 2018. "Guidelines and Standards for Evidence Synthesis in Environmental Management. Version 5.0." www.environmentalevidence.org/information-for-authors.
- Corbera, Esteve, Adrian Martin, Oliver Springate-Baginski, and Adrián Villaseñor. 2020. "Sowing the Seeds of Sustainable Rural Livelihoods? An Assessment of Participatory Forest Management through REDD+ in Tanzania." *Land Use Policy* 97 (September). <https://doi.org/10.1016/j.landusepol.2017.09.037>.
- Currie-Alder, Bruce. 2005. "Unpacking Participatory Natural Resource Management: A Conceptual Framework to Distinguish Democratic Governance from Resource Capture." *Environments* 33 (2): 1+.
- Das, Nimai. 2011. "Women's Dependence on Forest and Participation in Forestry: A Case Study of Joint Forest Management Programme in West Bengal." *Journal of Forest Economics* 17 (1): 67–89. <https://doi.org/10.1016/j.jfe.2010.09.003>.
- Dawson, Neil M., Brendan Coolsaet, Eleanor J. Sterling, Robin Loveridge, Nicole D Gross-Camp, Supin Wongbusarakum, Kamaljit K. Sangha, et al. 2021. "The Role of Indigenous Peoples and Local Communities in Effective and Equitable Conservation." *Ecology and Society* 26 (3). <https://doi.org/10.5751/es-12625-260319>.
- De Koning, Mirjam, Tin Nguyen, Michael Lockwood, Sinnasone Sengchanthavong, and Souvanhpheng Phommasane. 2017. "Collaborative Governance of Protected Areas: Success Factors and Prospects for Hin Nam No National Protected Area, Central Laos." *Conservation and Society* 15 (1): 87–99. <https://doi.org/10.4103/0972-4923.201396>.
- De Pourcq, Kobe, Evert Thomas, Bas Arts, An Vranckx, Tomas Léon-Sicard, and Patrick Van Damme. 2015. "Conflict in Protected Areas: Who Says Co-Management Does Not Work?" Edited by Andrea Belgrano. *PLOS ONE* 10 (12): e0144943. <https://doi.org/10.1371/journal.pone.0144943>.
- Ece, Melis. 2017. "Representation through Privatisation: Regionalisation of Forest Governance in Tambacounda, Senegal." *Conservation and Society* 15 (4): 439–50. https://doi.org/10.4103/cs.cs_16_104.
- Erbaugh, James T. 2019. "Responsibilization and Social Forestry in Indonesia." *Forest Policy and Economics* 109. <https://doi.org/10.1016/j.forepol.2019.102019>.
- Erk, Jan. 2014. "Federalism and Decentralization in Sub-Saharan Africa: Five Patterns of Evolution." *Regional & Federal Studies* 24 (5): 535–52. <https://doi.org/10.1080/13597566.2014.971769>.
- Faye, Papa. 2015. "Choice and Power: Resistance to Technical Domination in Senegal's Forest Decentralization." *Forest Policy and Economics* 60: 19–26. <https://doi.org/10.1016/j.forepol.2014.10.004>.
- Fidelman, Pedro, Truong Van Tuyen, Kim Nong, and Melissa Nursey-Bray. 2017. "The Institutions-Adaptive Capacity Nexus: Insights from Coastal Resources Co-Management in Cambodia and Vietnam." *Environmental Science and Policy* 76: 103–12. <https://doi.org/10.1016/j.envsci.2017.06.018>.
- FIP and adelphi. 2021. "A Dangerous Climate: Deforestation, Climate Change, and Violence Against Environmental Defenders in the Colombian Amazon. WWF Germany." Berlin: WWF Germany. <https://www.adelphi.de/en/system/files/media-thek/bilder/A%20Dangerous%20Climate.pdf>.
- Franco, Annie, Neil Malhotra, and Gabor Simonovits. 2014. "Publication Bias in the Social Sciences: Unlocking the File Drawer." *Science* 345 (6203): 1502–5. <https://doi.org/10.1126/science.1255484>.
- Friedman, Rachel S., Jonathan R. Rhodes, Angela J. Dean, Elizabeth A. Law, Truly Santika, Sugeng Budiharta, Joseph A. Hutabarat, et al. 2020. "Analyzing Procedural Equity in Government-Led Community-Based Forest Management." *Ecology and Society* 25 (3): 1–18. <https://doi.org/10.5751/ES-11710-250316>.
- Global Commission on Adaptation. 2021. "Principles for Locally Led Adaptation Action." https://files.wri.org/s3fs-public/uploads/Locally_Led_Adaptation_Principles_-_Endorsement_Version.pdf.

- Gonzales Tovar, Jazmin, Juan P. Sarmiento Barletti, Anne M. Larson, Grenville Barnes, and Catherine M. Tucker. 2021. "Can Multistakeholder Forums Empower Indigenous and Local Communities and Promote Forest Conservation? A Comparative Analysis of Territorial Planning in Two Brazilian States with Contrasting Contexts." *Conservation Science and Practice* 3 (1). <https://doi.org/10.1111/csp2.326>.
- Green, Kathryn E. 2016. "A Political Ecology of Scaling: Struggles over Power, Land and Authority." *Geoforum* 74: 88–97. <https://doi.org/10.1016/j.geoforum.2016.05.007>.
- Hajjar, Reem F., Robert A. Kozak, and John L. Innes. 2012. "Is Decentralization Leading to 'Real' Decision-Making Power for Forest-Dependent Communities? Case Studies from Mexico and Brazil." *Ecology and Society* 17 (1): 12–12. <https://doi.org/10.5751/ES-04570-170112>.
- Haller, Tobias, Greg Acciaioli, and Stephan Rist. 2016. "Constitutionality: Conditions for Crafting Local Ownership of Institution-Building Processes." *Society and Natural Resources* 29 (1): 68–87. <https://doi.org/10.1080/08941920.2015.1041661>.
- Hoang, Cam, Poshendra Satyal, and Esteve Corbera. 2019. "'This Is My Garden': Justice Claims and Struggles over Forests in Vietnam's REDD+." *Climate Policy* 19 (supl): S23–35. <https://doi.org/10.1080/14693062.2018.1527202>.
- Holmes, Tim, and Ian Scoones. 2000. "Participatory Environmental Policy Processes: Experiences from North and South." Brighton, U.K.: Institute of Development Studies at the University of Sussex. /z-wcorg/. 2000. http://books.google.com/books?id=Q-t_AAAAMAAJ.
- Hyle, Maija Anneli, Bishnu Prasad Devkota, and Irmeli Mustalahti. 2019. "From Blueprints to Empowerment of Disadvantaged Groups in Natural Resource Governance: Lessons from Nepal and Tanzania." *International Journal of the Commons* 13 (2): 1062–78.
- Ide, Tobias, Lisa R. Palmer, and Jon Barnett. 2021. "Environmental Peacebuilding from below: Customary Approaches in Timor-Leste." *International Affairs* 97 (1): 103–17. <https://doi.org/10.1093/ia/iia059>.
- IPCC. 2021. "Climate Change 2021: The Physical Science Basis: Working Group I Contribution to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change." https://www.ipcc.ch/report/ar6/wg1/downloads/report/IPCC_AR6_WGI_Full_Report.pdf.
- James, Katy L., Nicola P. Randall, and Neal R. Haddaway. 2016. "A Methodology for Systematic Mapping in Environmental Sciences." *Environmental Evidence* 5 (1): 7. <https://doi.org/10.1186/s13750-016-0059-6>.
- Kaufmann, Daniel, Aart Kraay, and Massimo Mastruzzi. 2010. "The Worldwide Governance Indicators: Methodology and Analytical Issues." SSRN Scholarly Paper ID 1682130. Rochester, NY: Social Science Research Network. <https://papers.ssrn.com/abstract=1682130>.
- Kawarazuka, Nozomi, Catherine Locke, and Janet Seeley. 2019. "Women Bargaining with Patriarchy in Coastal Kenya: Contradictions, Creative Agency and Food Provisioning." *Gender, Place & Culture* 26 (3): 384–404. <https://doi.org/10.1080/0966369x.2018.1552559>.
- Kongkeaw, Chaturong, Jawanit Kittornkool, Peter Vanderveest, and Kongkiat Kittiwatanawong. 2019. "Explaining Success in Community Based Mangrove Management: Four Coastal Communities along the Andaman Sea, Thailand." *Ocean & Coastal Management* 178 (August): 104822. <https://doi.org/10.1016/j.ocecoaman.2019.104822>.
- Larson, Anne M., and Fernanda Soto. 2008. "Decentralization of Natural Resource Governance Regimes." *Annual Review of Environment and Resources* 33 (1): 213–39. <https://doi.org/10.1146/annurev.environ.33.020607.095522>.
- Laudari, Hari Krishna, Kishor Aryal, and Tek Maraseni. 2020. "A Postmortem of Forest Policy Dynamics of Nepal." *Land Use Policy* 91 (February): 104338. <https://doi.org/10.1016/j.landusepol.2019.104338>.
- Lawry, Steven, Cyrus Samii, Ruth Hall, Aaron Leopold, Donna Hornby, and Farai Mtero. 2017. "The Impact of Land Property Rights Interventions on Investment and Agricultural Productivity in Developing Countries: A Systematic Review." *Journal of Development Effectiveness* 9 (1): 61–81. <https://doi.org/10.1080/19439342.2016.1160947>.
- Leisher, Craig, Francesca Booker, Bina Agarwal, Michael Day, Elizabeth Matthews, Debra Prosnitz, Dilys Roe, Diane Russell, Leah Samberg, and Terry Sunderland. 2017. A Preliminary Theory of Change Detailing How Women's Participation Can Improve the Management of Local Forests and Fisheries. SocArXiv.
- Léopold, Marc, Olivier Thébaud, and Anthony Charles. 2019. "The Dynamics of Institutional Innovation: Crafting Co-Management in Small-Scale Fisheries through Action Research." *Journal of Environmental Management* 237 (May). <https://doi.org/10.1016/j.jenvman.2019.01.112>.
- Lewins, Roger, Christophe Béné, Malloum Ousman Baba, Emma Belal, Steve Donda, Abbagana Mamane Lamine, Alassane Makadassou, et al. 2014. "African Inland Fisheries: Experiences with Co-Management and Policies of Decentralization." *Society & Natural Resources* 27 (4): 405–20. <https://doi.org/10.1080/08941920.2013.861564>.
- Lewis, Janet I. 2014. "When Decentralization Leads to Recentralization: Subnational State Transformation in Uganda." *Regional & Federal Studies* 24 (5): 571–88. <https://doi.org/10.1080/1359756.2014.971771>.

- Mahajan, Shauna L., Louise Glew, Erica Rieder, Gabby Ahmadi, Emily Darling, Helen E. Fox, Michael B. Mascia, and Madeleine McKinnon. 2019. "Systems Thinking for Planning and Evaluating Conservation Interventions." *Conservation Science and Practice* 1 (7). <https://doi.org/10.1111/csp2.44>.
- MET/NACSO. 2020. "The State of Community Conservation in Namibia." Windhoek: MET/NACSO.
- Mustalahti, Irmeli, and Arun Agrawal. 2020. "Research Trends: Responsibilization in Natural Resource Governance." *Forest Policy and Economics* 121 (December): 102308. <https://doi.org/10.1016/j.forpol.2020.102308>.
- Mustalahti, Irmeli, Violeta Gutiérrez-Zamora, Maija Hyle, Bishnu Prasad Devkota, and Nina Tokola. 2020. "Responsibilization in Natural Resources Governance: A Romantic Doxa?" *Forest Policy and Economics* 111 (February): 102033. <https://doi.org/10.1016/j.forpol.2019.102033>.
- Mutune, Jane Mutheu, and Jens Friis Lund. 2016. "Unpacking the Impacts of 'Participatory' Forestry Policies: Evidence from Kenya." *Forest Policy and Economics* 69 (August). <https://doi.org/10.1016/j.forpol.2016.03.004>.
- Nelson, Fred, Patricia Muyamwa-Mupeta, Shylock Muyengwa, Emmanuel Sulle, and Dickson Kaelo. 2020. "Progress or Regression? Institutional Evolutions of Community-based Conservation in Eastern and Southern Africa." *Conservation Science and Practice* 3 (1). <https://doi.org/10.1111/csp2.302>.
- Nightingale, Andrea, and Jeevan Raj Sharma. 2014. "Conflict Resilience among Community Forestry User Groups: Experiences in Nepal." *Disasters* 38 (3): 517–39. <https://doi.org/10.1111/dis.12056>.
- Nkhata, Bimo A., and Charles M. Breen. 2010. "Performance of Community-Based Natural Resource Governance for the Kafue Flats (Zambia)." *Environmental Conservation* 37 (3): 296–302. <https://doi.org/10.1017/S0376892910000585>.
- Nuesiri, Emmanuel O. 2017. "Feigning Democracy: Performing Representation in the UN-REDD Funded Nigeria-REDD Programme." *Conservation and Society* 15 (4): 384–99.
- Nunan, Fiona, and Dražen Cepić. 2020. "Women and Fisheries Co-Management: Limits to Participation on Lake Victoria." *Fisheries Research* 224: 105454–105454. <https://doi.org/10.1016/j.fishres.2019.105454>.
- Ojanen, Maria, Wen Zhou, Daniel C. Miller, Sue Helen Nieto, Baruani Mshale, and Gillian Petrokofsky. 2017. "What Are the Environmental Impacts of Property Rights Regimes in Forests, Fisheries and Rangelands?" *Environmental Evidence* 6 (1): 12. <https://doi.org/10.1186/s13750-017-0090-2>.
- Ojha, Hemant R., Mani R. Banjade, Ramesh K. Sunam, Basundhara Bhattacharai, Sudeep Jana, Keshab R. Goutam, and Sindhu Dhungana. 2014. "Can Authority Change through Deliberative Politics?" *Forest Policy and Economics* 46 (September): 1–9. <https://doi.org/10.1016/j.forpol.2014.04.005>.
- Ostrom, Elinor. 1990. *Governing the Commons: The Evolution of Institutions for Collective Action*. Cambridge: Cambridge University Press. <https://public.ebookcentral.proquest.com/choice/publicfullrecord.aspx?p=1103736>.
- . 1992. "Institutions and Common-Pool Resources." *Journal of Theoretical Politics* 4 (3): 243–45. <https://doi.org/10.1177/0951692892004003001>.
- . 1999. "Coping with Tragedies of the Commons." *Annual Review of Political Science* 2 (1): 493–535. <https://doi.org/10.1146/annurev.polisci.2.1.493>.
- Paudel, NayaSharma, Peter Cronkleton, and Iliana Monterroso. 2012. "Secondary Level Organisations and the Democratisation of Forest Governance: Case Studies from Nepal and Guatemala." *Conservation and Society* 10 (2): 124. <https://doi.org/10.4103/0972-4923.97485>.
- Pitkin, Hanna F. 1972. *The Concept of Representation*. Berkeley, CA: University of California Press.
- Pörtner, Hans-Otto, Robert J Scholes, John Agard, Emma Archer, Xuemei Bai, Barnes, David, Burrows, Michael, et al. 2021. "IPBES-IPCC Co-Sponsored Workshop Report on Biodiversity and Climate Change." Zenodo. <https://doi.org/10.5281/ZENODO.4782538>.
- Ribot, Lund, J. F. Lund, and T. Treue. 2010. "Democratic Decentralization in Sub-Saharan Africa: Its Contribution to Forest Management, Livelihoods, and Enfranchisement." *Environmental Conservation* 37 (1): 35–44. <https://doi.org/10.1017/s0376892910000329>.
- Rivera, A., J. San Martin-Chicas, and J. Myton. 2021. "Transitioning to Co-Management in Caribbean Reef Fisheries: Tela Bay Case Study." *Sustainability Science*, March. <https://doi.org/10.1007/s11625-021-00922-1>.
- Rydén, Oskar, Alexander Zizka, Sverker C. Jagers, Staffan I. Lindberg, and Alexandre Antonelli. 2020. "Linking Democracy and Biodiversity Conservation: Empirical Evidence and Research Gaps." *Ambio* 49 (2): 419–33. <https://doi.org/10.1007/s13280-019-01210-0>.
- Salerno, Jonathan, Krister Andersson, Karen M. Bailey, Tom Hilton, Kephania K. Mwaviko, Isaya Donald Simon, Claire Bracebridge, et al. 2021. "More Robust Local Governance Suggests Positive Effects of Long-term Community Conservation." *Conservation Science and Practice* 3 (1): e297–e297. <https://doi.org/10.1111/csp2.297>.
- Salerno, Jonathan, Chelsie Romulo, Kathleen A Galvin, Jeremy Brooks, Patricia Mupeta-Muyamwa, and Louise Glew. 2021. "Adaptation and Evolution of Institutions and Governance in

- Community-based Conservation." *Conservation Science and Practice* 3 (1). <https://doi.org/10.1111/csp2.355>.
- Samndong, Raymond Achu, and Darley Jose Kjosavik. 2017. "Gendered Forests: Exploring Gender Dimensions in Forest Governance and REDD+ in Équateur Province, Democratic Republic of Congo (DRC)." *Ecology and Society* 22 (4). <https://www.jstor.org/stable/26799010>.
- Schlager, Edella, and Elinor Ostrom. 1992. "Property-Rights Regimes and Natural Resources: A Conceptual Analysis." *Land Economics* 68 (3): 249. <https://doi.org/10.2307/3146375>.
- Siles, Jackelline, Maria Prebble, Jamie Wen, Corrine Hart, and Heidi Schuttenberg. 2019. "Advancing Gender in the Environment: Gender in Fisheries—A Sea of Opportunities." Washington, DC: IUCN and USAID. <https://portals.iucn.org/library/sites/library/files/documents/2019-040-En.pdf>.
- Soliku, Ophelia, and Ulrich Schraml. 2018. "From Conflict to Collaboration: The Contribution of Co-Management in Mitigating Conflicts in Mole National Park, Ghana." *Oryx* 54 (4): 483–93. <https://doi.org/10.1017/s0030605318000285>.
- Sommerville, Matt, and Emiko Guthe. 2018. "Tenure and Global Climate Change Final Report." Washington, DC: USAID Tenure and Global Climate Change Program. https://www.land-links.org/wp-content/uploads/2018/05/USAID_Land_Tenure_TGCC_Final_Report_Updated.pdf.
- Springer, J., J. Campese, and B. Nakangu. 2021. The Natural Resource Governance Framework: Improving Governance for Equitable and Effective Conservation. IUCN, International Union for Conservation of Nature. <https://doi.org/10.2305/iucn.ch.2021.16.en>.
- Subhan Mollick, Abdus, Md Khalilur Rahman, Md Nabiul Islam Khan, and Md Nazmus Sadath. 2018. "Evaluation of Good Governance in a Participatory Forestry Program: A Case Study in Madhupur Sal Forests of Bangladesh." *Forest Policy and Economics* 95: 123–37. <https://doi.org/10.1016/j.forepol.2018.07.014>.
- Tenure and Global Climate Change (TGCC) project. 2021. "Tenure and Global Climate Change: Global." 2021. <https://www.land-links.org/project/tenure-and-global-climate-change-global/>.
- Tugendhat, Helen. 2021. "Rethinking Nature-Based Solutions: Seeking Transformative Change through Culture and Rights." Forest People's Programme. <https://www.forestpeoples.org/en/briefing-paper/2021/re-thinking-nature-based-solutions>.
- United Nations. 2007. United Nations Declaration on the Rights of Indigenous Peoples. Department of Economic and Social Affairs. https://www.un.org/development/desa/indigenouspeoples/wp-content/uploads/sites/19/2018/11/UNDRIP_E_web.pdf
- . 2015. Transforming Our World: The 2030 Agenda for Sustainable Development. Department of Economic and Social Affairs. <https://sdgs.un.org/2030agenda>
- United Nations Framework Convention on Climate Change (UNFCCC). 2011. Report of the Conference of the Parties on its Sixteenth Session, held in Cancun from 29 November to 10 December 2010. <https://unfccc.int/resource/docs/2010/cop16/eng/07a01.pdf>
- USAID. 2002. "Nature, Wealth, and Power: Emerging Best Practice for Revitalizing Rural Africa." Washington, DC: U.S. Agency for International Development. <https://importall.net/library/content/nature-wealth-and-power-emerging-best-practice-for-revitalizing-rural-africa/view>.
- . 2018. "Democracy, Human Rights and Governance and Biodiversity Conservation Linkages." Washington, DC: U.S. Agency for International Development.
- . 2020a. "Effective Engagement with Indigenous Peoples: USAID Democracy, Human Rights, and Governance Sector Guidance Document." Washington, DC: U.S. Agency for International Development.
- . 2020b. "Environmental and Natural Resource Management Framework." Washington, DC: U.S. Agency for International Development.
- . 2020c. "Pathways to Peace: Addressing Conflict and Strengthening Stability in a Changing Climate: Lessons Learned from Resilience and Peacebuilding Programs in the Horn of Africa." Washington, DC: U.S. International Agency for International Development.
- Valenzuela, Roswin B., Youn Yeo-Chang, Mi Sun Park, and Jung Nam Chun. 2020. "Local People's Participation in Mangrove Restoration Projects and Impacts on Social Capital and Livelihood: A Case Study in the Philippines." *Forests* 11 (5). <https://doi.org/10.3390/F11050580>.
- VeneKlasen, Lisa, and Valerie Miller. 2002. "Power and Empowerment." *PLA Notes* 34: 39–41.
- Zeller, Ulrich, Gad Perry, and Thomas Göttert. 2019. Biodiversity and the Urban-Rural Interface: Conflicts vs. Opportunities. Humboldt-Universität zu Berlin. <https://doi.org/10.18452/1995>.



Annexes

Annex 1:

Further Resources

Annex 2:

Methodological Details

Annex 3:

Detailed Typology of Democratic Outcomes

Annex 4:

Included Articles in Evidence Map and Review

Annex 5:

Codebook

ANNEX I.

Further Resources

- Betley, Erin, Amanda Sigouin, Eleanor J. Sterling, Felicity Arengo, Nadav Gazit, and Ana Luz Porzecanski. 2018. "Best Practices for Stakeholder Engagement in Biodiversity Programming. Resource Guide." USAID Bureau for Economic Growth, Education, and the Environment—Office of Forestry and Biodiversity. Washington, DC: U.S. Agency for International Development (USAID). https://pdf.usaid.gov/pdf_docs/PA00T9XH.pdf.
- Castañeda Camey, Itzá, Laura Sabater, Kate Owren, and A. Emmett Boyer. n.d. "Gender-Based Violence and Environment Linkages: The Violence of Inequality." Gland, Switzerland: IUCN. <https://portals.iucn.org/library/sites/library/files/documents/2020-002-En.pdf>.
- Harper, Caroline, Rachel Marcus, Rachel George, Sophia M. D'Angelo, and Emma Samman. 2020. "Gender, Power and Progress: How Norms Change." London: ALIGN: Advancing Learning and Innovation on Gender Norms and Overseas Development Institute (ODI). www.alignplatform.org/gender-power-progress.
- Rocha Menocal, Alina, Marc Cassidy, Sarah Swift, David Jacobstein, Corrine Rothblum, and Ilona Tservil. n.d. "Thinking and Working Politically through Applied Political Economy Analysis: A Guide for Practitioners." Washington, DC: USAID. <https://www.usaid.gov/documents/1866/thinking-and-working-politically-through-applied-political-economy-analysis>.
- Stark, Jeffrey, Katsuaki Terasawa, and Chalachew Niguse Agonafir. 2017. "Lessons Learned from the Peace Centers for Climate and Social Resilience: An Assessment in Borana Zone, Oromia National Regional State, Ethiopia." Washington, DC: USAID. <https://www.climatelinks.org/resources/lessons-learned-peace-centers-climate-and-social-resilience>.
- USAID. 2014. "USAID Biodiversity Policy." Washington, DC: U.S. Agency for International Development. https://pdf.usaid.gov/pdf_docs/PDACY300.pdf.
- USAID. 2017. "USAID SCALE (System-Wide Collaborative Action for Livelihoods and the Environment)." Washington, DC: U.S. Agency for International Development. <https://rmportal.net/library/content/usaid-scale-collection>.
- USAID. 2018. "Democracy, Human Rights and Governance and Biodiversity Conservation Linkages." Washington, DC: U.S. Agency for International Development. https://www.usaid.gov/sites/default/files/documents/1866/USAID_DRG_BD_Linkages_508.pdf.
- USAID. 2018. "Lessons Learned From PEACE III: A Mid-Cycle Portfolio Review." Washington, DC: U.S. Agency for International Development. <https://www.climatelinks.org/resources/lessons-learned-peace-iii-mid-cycle-portfolio-review>.
- USAID. 2021. "Cross Sectoral Guide Sustainable Landscapes & Democracy, Human Rights, and Governance." Washington, DC: U.S. Agency for International Development. https://pdf.usaid.gov/pdf_docs/PA00XD46.pdf.
- USAID. 2021. "Gender Norms and Women's Land Rights." Washington, DC: U.S. Agency for International Development. https://land-links.org/wp-content/uploads/2021/09/ILRG-Gender-Norms-and-Womens-Land-Rights-Brief_final.pdf.
- USAID. 2021. "Indigenous Peoples." Washington, DC: U.S. Agency for International Development. <https://www.usaid.gov/indigenous-peoples>.

ANNEX 2.

Methodological Details

FOCAL GEOGRAPHIES

Focal geographies of this review (low and middle income countries, as classified by [World Bank, 2021](#))

LOW-INCOME ECONOMIES (\$1,045 OR LESS) [27]

Afghanistan	Ethiopia	Malawi	South Sudan
Burkina Faso	Gambia, The	Mali	Sudan
Burundi	Guinea	Mozambique	Syrian Arab Republic
Central African Republic	Guinea-Bissau	Niger	Togo
Chad	Korea, Dem. People's Rep	Rwanda	Uganda
Congo, Dem. Rep	Liberia	Sierra Leone	Yemen, Rep.
Eritrea	Madagascar	Somalia	

LOWER-MIDDLE INCOME ECONOMIES (\$1,046 TO \$4,095) [55]

Angola	Egypt, Arab Rep.	Mauritania	Solomon Islands
Algeria	El Salvador	Micronesia, Fed. Sts.	Sri Lanka
Bangladesh	Eswatini	Mongolia	Tanzania
Belize	Ghana	Morocco	Tajikistan
Benin	Haiti	Myanmar	Timor-Leste
Bhutan	Honduras	Nepal	Tunisia
Bolivia	India	Nicaragua	Ukraine
Cabo Verde	Indonesia	Nigeria	Uzbekistan
Cambodia	Iran, Islamic Rep	Pakistan	Vanuatu
Cameroon	Kenya	Papua New Guinea	Vietnam
Comoros	Kiribati	Philippines	West Bank and Gaza
Congo, Rep.	Kyrgyz Republic	Samoa	Zambia
Côte d'Ivoire	Lao PDR	São Tomé and Príncipe	Zimbabwe
Djibouti	Lesotho	Senegal	

UPPER-MIDDLE INCOME ECONOMIES (\$4,096 TO \$12,695) [55]

Albania	Dominica	Kosovo	Peru
American Samoa	Dominican Republic	Lebanon	Romania
Argentina	Equatorial Guinea	Libya	Russian Federation
Armenia	Ecuador	Malaysia	Serbia
Azerbaijan	Fiji	Maldives	South Africa
Belarus	Gabon	Marshall Islands	St. Lucia
Bosnia and Herzegovina	Georgia	Mauritius	St. Vincent and the Grenadines
Botswana	Grenada	Mexico	Suriname
Brazil	Guatemala	Moldova	Thailand
Bulgaria	Guyana	Montenegro	Tonga
China	Iraq	Namibia	Turkey
Colombia	Jamaica	North Macedonia	Turkmenistan
Costa Rica	Jordan	Panama	Tuvalu
Cuba	Kazakhstan	Paraguay	

SEARCH STRATEGY

We used the following key terms to search for literature from publication databases. Full records of combinations of Boolean search strings used for each database, records of forward and backward citation search of relevant reviews, along with records of search results, are available [here](#).

POPULATION KEY TERMS

("participatory" OR "community-based" OR "collaborative" OR "cooperative" OR "co-managed")

AND

OUTCOME KEY TERMS

("co-benefits" OR "governance" OR "democracy" OR "rights" OR "government" OR "decision-making" OR "empowerment" OR "corruption" OR "justice" OR "equity" OR "violence" OR "political stability" OR "good governance" OR "autocracy" OR "peace" OR "peacebuilding" OR "social learning" OR "decentralization" OR "democratization" OR "governance structure" OR "engagement strategy" OR "stakeholder engagement" OR "stakeholder involvement" OR "stakeholder collaboration" OR "stakeholder participation" OR "stakeholder representation" OR "particip*" OR "collab*" OR "ladder of participation" OR "consult*" OR "dialogue*" OR "negotiat*" OR "sharing power" OR "transferring power" OR "power" OR "sharing information" OR "rights" OR "roles" OR "responsibilities" OR "supervision" OR "distribution" OR "benefits" OR "inclusive" OR "hon-dis-criminatory" OR "resource-user input" OR "decision-making" OR "transparen*" OR "accountab*" OR "dem-ocratic governance" OR "democratic institutions" OR "authoritarianism" OR "institutions" OR "Collaborative Stakeholder Participation" OR "legitimacy")

AND

STUDY TYPE KEY TERMS

("synthesis" OR "review" OR "evaluat*" OR "case stud*" OR "impacts" OR "evidence" OR "assess*" OR "lessons learned" OR "best practices" OR "Success" OR "Failure" OR "Outcome" OR "Impact" OR "Progress" OR "evidence review" OR "rapid review")

AND

ONE OF THE FOLLOWING SETS OF INTERVENTION KEY TERMS

FOREST-BASED INTERVENTION KEY TERMS

("natural resource management" OR "natural resource governance" OR "forest management" OR "forest governance" OR "agroforestry" OR "forest policy" OR "forest policy reform" OR "silviculture" OR "forest reform" OR "Local ecological knowledge" OR "Multi-functional Forestry" OR "PNRM" OR "CNRM" OR "forestry" OR "forest management" OR "social forestry" OR "FLEGT" OR "Forest Law Enforcement" OR "Forest Governance" OR "REDD+" OR "community forestry" OR "forest decentralization" OR "forest property rights")

NON-FOREST BASED INTERVENTION KEY TERMS

("Integrated landscape management" OR "Conservation Agreements" OR "Conservation Concessions" OR "Conservation Offset Programs" OR "Conservation Oriented Farming" OR "Conservation Tender Program" OR "Grassbanking" OR "pastoralism" OR "land tenure reform" OR "women's land rights" OR "Integrative Natural Protected Areas" OR "INPA")

FISHERIES INTERVENTION KEY TERMS

("Territorial Use Rights for Fisheries" OR "participatory fisheries management" OR "participatory fishery management" OR "LMMA" OR "locally managed marine area" OR "fisheries co-management")

WILDLIFE INTERVENTION KEY TERMS

("wildlife trafficking" OR "illegal wildlife trade" OR "ecoguards" OR "poaching" OR "wildlife trade" OR "wildlife management")

CLIMATE INTERVENTION KEY TERMS

("adaptive co-management" AND "climate change") OR ("climate change mitigation") OR ("climate change adaptation")

GREY LITERATURE SOURCES SEARCHED (FEBRUARY, MARCH 2021)

Source (acronym)	Institution, website
CARE	https://www.care.org/reports-and-resources/
CIFOR	Center for International Forestry Research, https://www.cifor.org/knowledge/publications/
DANIDA	Danish International Development Agency, http://www.danida-publikationer.dk/?sc_lang=en
DFID/FCDO	Department for International Development/Foreign, Commonwealth & Development Office www.gov.uk/research-for-development-outputs
FAO	United Nations Food and Agriculture Organization, http://www.fao.org/publications
GALA	https://www.learn gala.com/
GSDRC	Governance and Social Development Resource Center, https://gsdrc.org/publications/
IDRC Digital Library	International Development Research Centre, https://idl-bnc-idrc.dspacedirect.org/
Mercy Corps	https://www.mercycorps.org/research-resources
ODI	Overseas Development Institute, https://odi.org/en/publications/
Oxfam	https://www.oxfamamerica.org/explore/research-publications/
RFGI	Responsive Forest Governance Initiative, https://www.jesseribot.com/Projects/RFGI—Responsive-Forest-Governance-Initiative-(REDD%2B-and-Adaptation)
SIDA	Swedish International Development Cooperation Agency, https://www.sida.se/en/publications
UNDP	United Nations Development Programme, https://www.undp.org/publications
USAID DEC	Development Experience Clearinghouse, https://dec.usaid.gov/dec/home/Default.aspx
Wageningen UR	Wageningen UR Centre for Development Innovation, https://www.wur.nl/en/Research-Results.htm
WRI	World Resources Institute, https://www.wri.org/research

ANNEX 3.

Detailed Typology of Democratic Outcomes

Category	Subcategory	Description
Civil society		<i>Individuals, communities, identity-based and religious groupings, livelihood-based associations, advocacy organizations, research institutes, and media. Civil society relationships exist between NR users, communities, and other resource actors.</i>
	Power and social relations between users around NR	<p>Diverse manifestations of patterns of power (dominant/subordinate) between users/actors, ranging from control over material resources to power enacted through discourses, issue-framing, and access to information (Bennett et al 2018); relations include collaboration, cooperation, negotiation, abuse of power, and resistance/rejection/discord.</p> <p>E.g., those in community with NR assets/land vis-à-vis those without assets/land; fishermen vis-à-vis trader/processors; power disparities between ethnic groups using same NR; changes in recognition, norms, and respect for female committee members; elite capture, inequitable benefit sharing.</p>
	Political & social stability/conflict involving civil society	<p>Perceptions of the likelihood of political instability and/or politically motivated violence/conflict (Worldwide Governance Indicators); also instability and conflict that is primarily social in nature—all involving civil society.</p> <p>E.g., instability in intra-group dynamics of CFUGs; farmer-herder conflicts over scarce resources or benefits, land rights; outsiders encroaching into defined CBNRM areas; resentment against newly empowered groups in community.</p>
	Capacity/ability/ desire to engage with the NRM intervention	Ability for individuals to participate or become involved in NRM intervention and exercise voice and advocacy (education, training, time).
	Organizational capacity	Ability to create/develop civil society organizations, make them productive and effective, and to prepare for and respond to change in the context of NRM (can comprise resources/infrastructure, knowledge and skills, culture, and leadership).
	Demonstration effects	Development in a community that serves as a catalyst in other communities (behavior is caused by observation of the actions of others and their consequences), socialization of successes. (Does not include perceptions or opinions about intervention).

Category	Subcategory	Description
Institutions		<p><i>Institutions are the systems of established and embedded social and political rules or norms that structure social and political interactions, and that serve to constrain and guide human behavior (Hodgson 2006).</i></p> <p><i>Formal institutions: Formal rules (laws, regulations, procedures) that constrain and prescribe the behavior of groups and individuals in society.</i></p> <p><i>Informal/customary/traditional institutions: Informal rules (socio-cultural norms and practices) or non-state codified rules (procedures and understandings based on traditional authority) that constrain and prescribe the behavior of groups and individuals in society.</i></p>
	Transparency & accountability	<p>Decisions are taken and enforced in accordance with rules and regulations; there is public access to all information that is not classified for well-specified reasons; information on decisions and implementations of policies is made available to the public; decision-makers, both collective and individual, take responsibility for their decisions; decisions are reported on, explained, and can be sanctioned; there are effective remedies against maladministration (Council of Europe).</p> <p>E.g., individuals are aware of/understand rules and regulations, rules are enforced (objectively/empirically), FPIC and other international standards.</p>
	Rules and regulations on NR use and rights	<p>Formal rules (laws, regulations, procedures) and informal rules (norms, shared understandings) as a result of intervention.</p> <p>E.g., development of local by-laws, downstream legal changes, adaptive management.</p>
	Type of user engagement/role in NR decision-making	<p>Rule changes in the nature of how users engage with institutions.</p> <p>E.g., new structured opportunities to voice concerns; new representation mechanisms, new committee roles, voting; new arrangements for monitoring and surveillance; new mechanisms to interact with local government.</p>
	Mechanisms for handling disputes and negotiations about NR	<p>Formal and informal processes for handling disputes about access, use, monitoring, etc., of natural resources.</p> <p>E.g., formal and informal grievance mechanisms.</p>
	Governance performance & fragility	<p>Institutional performance/public services (access, responsiveness, quality); fragility (low/weak) perceptions of legitimacy and effectiveness, vulnerability to instability and conflict. Fragility results from ineffective or/and unaccountable governance, weak social cohesion, or corrupt institutions.</p> <p>E.g., individuals regard rules/regulations as fair/just, or users do not comply with NR rules because the government is not viewed as legitimate (e.g., due to refusal to engage certain ethnic groups). Or new government policies are seen as lip-service and unlikely to be implemented (because they never were in the past).</p>
	Policy & legal reforms to support PNRM	<p>Reforms of law, rules, regulations, policies.</p>

Category	Subcategory	Description
	Corruption/clientelism	<p>Institutional corruption is “the abuse of entrusted power for private gain” (Transparency International).</p> <p>E.g., conflicts of interest, misappropriation, fraud, abuse of power, influence peddling, cronyism, nepotism. Clientelism is a relationship between individuals and groups with unequal economic and social status, e.g., exchange of goods and services for political support.</p>
	Power of institutions and power relations within the institutional context	<p>Diverse manifestations of patterns of institutional power and control, or changes in power relations between different institutions, ranging from control over material resources to enforcement/punishment to power enacted through discourses, issue-framing, and access to information (Bennett et al. 2018); relations include collaboration, cooperation, negotiation, and resistance/rejection/discord.</p>
	Justice (comparability of formal/customary systems)	<p>Local authorities abide by the law and judicial decisions, rules and regulations are adopted in accordance with procedures provided for by law and are enforced impartially; mechanisms exist for comparability of formal and customary justice systems (norms, customs, and practices by people within a group, repeated for sufficient time to be considered mandatory).</p>
State-Society-Private Sector relations		<p><i>State: Administrative and legal order that claims binding authority over citizens and resources in its jurisdiction, empowered with the legitimate use of force.</i></p> <p><i>State actors (formal): Elected or appointed officials in executive, legislative, judicial, and administrative positions as well as their ministries, agencies, commissions, courts, etc.</i></p> <p><i>State-society relations: Interactions between state actors, formal and informal institutions, and societal groups to negotiate how public authority is exercised and how it can be influenced by people.</i></p> <p><i>Private sector: For-profit economic actors (e.g., businesses).</i></p>
	Trust/distrust in government	<p>Perceptions of the extent to which public power is exercised for private gain, including both petty and grand forms of corruption, as well as “capture” of the state by elites and private interests (Worldwide Governance Indicators).</p> <p>Perceptions of the quality of government performance, public services, the reliability of the civil service and government agencies, and the degree of their independence from political pressures, the quality and fairness of policy formulation and implementation, and the credibility of the government’s commitment to such policies (Worldwide Governance Indicators).</p>
	Power relations and representation at different governance levels	<p>Power relations and state-society dynamics (inclusivity, communication, collaboration) occurring between citizens/social groups and different levels of governance (e.g., local, subnational, national OR informal/customary/traditional vs. formal institutions).</p> <p>E.g., government management staff vs. fishers, REDD design vs customary practice, state-society relationships in monitoring and surveillance.</p>

Category	Subcategory	Description
	Political & social stability/conflict involving state	Perceptions of the likelihood of political instability and/or politically motivated violence/conflict as a result of discordant state-society relations (Worldwide Governance Indicators); also instability and conflict that is social but not explicitly political in nature, while also implicating/involving state power (e.g., ethnic group conflict in which the state intervenes).
	Relationships across governance scales/networking/coalitions	Multi-actor networks at multiple levels (including new or strengthened civil society associations) that articulate state-society relationships and collaboration around NRM intervention and beyond.
	Citizen responsiveness	Objectives, rules, structures, and procedures are adapted to the legitimate expectations and needs of citizens; public services are delivered and requests/grievances responded to within a reasonable timeframe (Council of Europe).
	Autonomy	Individual rights and freedoms, freedom of choice and action, equality under the law.
	Expectations of government obligations/norms	Shifts in public perceptions of the proper roles, obligations, services, and conduct of the state and its representatives as a result of the NRM intervention (e.g., public information, defense of user rights, support for gender equity and marginalized groups, equal treatment before the law).
	Leadership (users' political profile/visibility/influence)	NR users' increased political profile/visibility/influence or position in elected office or higher level institutional posts (specifically in government/state).
	Freedom to dissent/contest	Shifts in freedom of expression, freedom of association, and a free media (Worldwide Governance Indicators).

ANNEX 4:

Articles Included in Evidence Map and Review

- Afroz, Sharmin, Rob Cramb, and Clemens Grünbühel. 2016. "Ideals and Institutions: Systemic Reasons for the Failure of a Social Forestry Program in South-West Bangladesh." *Geoforum* 77: 161–73. <https://doi.org/10.1016/j.geoforum.2016.11.001>.
- Agrawal, Arun, and Ashwini Chhatre. 2006. "Explaining Success on the Commons: Community Forest Governance in the Indian Himalaya." *World Development* 34 (1). <https://doi.org/10.1016/j.worlddev.2005.07.013>.
- Anderson, Jon, Colby Michael, McGahuey Michael, and Mehta Shreya. 2013. "Nature, Wealth, and Power 2.0: Leveraging Natural and Social Capital for Resilient Development." U.S. Agency for International Development. <http://rmportal.net/library/content/nwp-2.0>.
- Armitage, D., M. Marschke, and T. van Tuyen. 2011. "Early-Stage Transformation of Coastal Marine Governance in Vietnam?" *Marine Policy* 35 (5): 703–11.
- Asmin, Ferdinal, Dudung Darusman, Iin Ichwandi, and Didik Suharjito. 2017. "Social Capital of Parak and Rimbo Management in West Sumatera." *Jurnal Manajemen Hutan Tropika* 23 (3): 140–49. <https://doi.org/10.7226/jtfm.23.3.140>.
- Baker-Médard, Merrill. 2017. "Gendering Marine Conservation: The Politics of Marine Protected Areas and Fisheries Access." *Society and Natural Resources* 30 (6): 723–37. <https://doi.org/10.1080/08941920.2016.1257078>.
- Baral, Nabin. 2012. "Empirical Analysis of Factors Explaining Local Governing Bodies' Trust for Administering Agencies in Community-Based Conservation." *Journal of Environmental Management* 103: 41–50. <https://doi.org/10.1016/j.jenvman.2012.02.031>.
- Baral, Nabin, and Marc J. Stern. 2011. "A Comparative Study of Two Community-Based Conservation Models in Nepal." *Biodiversity and Conservation* 20 (11): 2407–26. <https://doi.org/10.1007/s10531-011-9993-3>.
- Barratt, Caroline, Janet Seeley, and Edward H. Allison. 2015. "Lacking the Means or the Motivation? Exploring the Experience of Community-Based Resource Management among Fisherfolk on Lake Victoria, Uganda." *European Journal of Development Research* 27 (2): 257–72. <https://doi.org/10.1057/ejdr.2014.33>.
- Basnyat, Bijendra, Thorsten Treue, Ridish Kumar Pokharel, Lok Nath Lamsal, and Santosh Rayamajhi. 2018. "Legal-Sounding Bureaucratic Re-Centralisation of Community Forestry in Nepal." *Forest Policy and Economics* 91: 5–18. <https://doi.org/10.1016/j.forepol.2017.08.010>.
- Baynes, Jack, John Herbohn, and Wolfram Dressler. 2016. "Power Relationships: Their Effect on the Governance of Community Forestry in the Philippines." *Land Use Policy* 54: 169–76. <https://doi.org/10.1016/j.landusepol.2016.01.008>.
- Baynes, Jack, John Herbohn, Nestor Gregorio, William Unsworth, and Émilie Houde Tremblay. 2019. "Equity for Women and Marginalized Groups in Patriarchal Societies during Forest Landscape Restoration: The Controlling Influence of Tradition and Culture." *Environmental Conservation* 46 (03): 241–46. <https://doi.org/10.1017/s0376892919000079>.
- Benjaminsen, Tor A., Mara J. Goldman, Maya Y. Minwary, and Faustin P. Maganga. 2013. "Wildlife Management in Tanzania: State Control, Rent Seeking, and Community Resistance." *Development and Change* 44 (5): 1087–1109. <https://doi.org/10.1111/dech.12055>.
- Bhattarai, Basundhara. 2020. "How Do Gender Relations Shape a Community's Ability to Adapt to Climate Change? Insights from Nepal's Community Forestry." *Climate and Development* 12 (10): 876–87. <https://doi.org/10.1080/17565529.2019.1701971>.
- Blas, Driss Ezzine de, Manuel Ruiz-Pérez, and Cédric Vermeulen. 2011. "Management Conflicts in Cameroonian Community Forests." *Ecology and Society* 16 (1). <https://doi.org/10.5751/es-03845-160108>.
- Borgerhoff Mulder, Monique, Tim Caro, and Assa Sharif Ngwali. 2021. "A Silver Lining to REDD: Institutional Growth despite Programmatic Failure." *Conservation Science and Practice* 3 (1). <https://doi.org/10.1111/csp.2.312>.
- Bouda, Henri-Noël, Patrice Savadogo, Daniel Tiveau, and Boureima Ouedraogo. 2011. "State, Forest and Community: Challenges of Democratically Decentralizing Forest Management in the Centre-West Region of Burkina Faso." *Sustainable Development* 19 (4). <https://doi.org/10.1002/sd.444>.
- Brown, H. Carolyn Peach, and James P. Lassoie. 2010. "Institutional Choice and Local Legitimacy in Community-Based Forest

- Management: Lessons from Cameroon." *Environmental Conservation* 37 (3): 261–69. <https://doi.org/10.1017/S0376892910000603>.
- Buffum, B., A. Lawrence, and K. J. Tempel. 2010. "Equity in Community Forests in Bhutan." *International Forestry Review* 12 (3): 187–99. <https://doi.org/10.1505/ifor.12.3.187>.
- Cassidy, Lin. 2021. "Power Dynamics and New Directions in the Recent Evolution of CBNRM in Botswana." *Conservation Science and Practice* 3 (1): e205–e205. <https://doi.org/10.1111/csp.2.205>.
- Chomba, Susan. 2017. "Choices Have Consequences: REDD+ and Local Democracy in Kenya." *Conservation and Society* 15 (4): 400–413. https://doi.org/10.4103/cs.cs_16_109.
- Chomba, Susan W., Iben Nathan, Peter A. Minang, and Fergus Sinclair. 2015. "Illusions of Empowerment? Questioning Policy and Practice of Community Forestry in Kenya." *Ecology and Society* 20 (3). <https://doi.org/10.5751/ES-07741-200302>.
- Cinner, Joshua E., and Tim R. McClanahan. 2015. "A Sea Change on the African Coast? Preliminary Social and Ecological Outcomes of a Governance Transformation in Kenyan Fisheries." *Global Environmental Change* 30: 133–39. <https://doi.org/10.1016/j.gloenvcha.2014.10.003>.
- Cinner, Joshua E., Tim R. McClanahan, M. Aaron MacNeil, Nicholas A. J. Graham, Tim M. Daw, Ahmad Mukminin, David A. Feary, et al. 2012. "Comanagement of Coral Reef Social-Ecological Systems." *Proceedings of the National Academy of Sciences of the United States of America* 109 (14): 5219–22. <https://doi.org/10.1073/pnas.1121215109>.
- Cohen, Philippa Jane, and Dirk Johan Steenbergen. 2015. "Social Dimensions of Local Fisheries Co-Management in the Coral Triangle." *Environmental Conservation* 42 (3): 278–88. <https://doi.org/10.1017/S0376892914000423>.
- Coleman, Eric A., and Esther Mwangi. 2013. "Women's Participation in Forest Management: A Cross-Country Analysis." *Global Environmental Change* 23 (1): 193–205. <https://doi.org/10.1016/j.gloenvcha.2012.10.005>.
- Corbera, Esteve, Adrian Martin, Oliver Springate-Baginski, and Adrián Villaseñor. 2020. "Sowing the Seeds of Sustainable Rural Livelihoods? An Assessment of Participatory Forest Management through REDD+ in Tanzania." *Land Use Policy* 97. <https://doi.org/10.1016/j.landusepol.2017.09.037>.
- Coulibaly-Lingani, P., P. Savadogo, M. Tigabu, and P. C. Oden. 2011. "Decentralization and Community Forest Management in Burkina Faso: Constraints and Challenges." *International Forestry Review* 13 (4): 476–86. <https://doi.org/10.1505/146554811798811399>.
- Das, Bidhan Kanti. 2019. "Denial of Rights Continues: How Legislation for 'Democratic Decentralisation' of Forest Governance Was Subverted in the Implementation Process of the Forest Rights Act in India." *European Journal of Development Research* 31 (4): 957–83. <https://doi.org/10.1057/s41287-019-0195-2>.
- Das, Nimai. 2011. "Women's Dependence on Forest and Participation in Forestry: A Case Study of Joint Forest Management Programme in West Bengal." *Journal of Forest Economics* 17 (1): 67–89. <https://doi.org/10.1016/j.jfe.2010.09.003>.
- De Koning, Mirjam, Tin Nguyen, Michael Lockwood, Sinnasone Sengchanthavong, and Souvanhpheng Phommasane. 2017. "Collaborative Governance of Protected Areas: Success Factors and Prospects for Hin Nam No National Protected Area, Central Laos." *Conservation and Society* 15 (1): 87–99. <https://doi.org/10.4103/0972-4923.201396>.
- De Pourcq, Kobe, Evert Thomas, Bas Arts, An Vranckx, Tomas Léon-Sicard, and Patrick Van Damme. 2015. "Conflict in Protected Areas: Who Says Co-Management Does Not Work?" *PLoS ONE* 10 (12). <https://doi.org/10.1371/journal.pone.0144943>.
- Dekker, Lidewej A G., Koen Arts, and Esther Turnhout. 2020. "From Rationalities to Practices: Understanding Unintended Consequences of CBNRM." *Conservation and Society* 18 (2): 137–137. https://doi.org/10.4103/cs.cs_19_29.
- Delgado-Serrano, Maria del Mar, Elisa Oteros-Rozas, Isabel Ruiz-Mallén, Diana Calvo-Boyero, Cesar Enrique Ortiz-Guerrero, Roberto Ivan Escalante-Semerena, and Esteve Corbera. 2018. "Influence of Community-Based Natural Resource Management Strategies in the Resilience of Social-Ecological Systems." *Regional Environmental Change* 18 (2): 581–92. <https://doi.org/10.1007/s10113-017-1223-4>.
- Donda, Steve. 2017. "Who Benefits from Fisheries Co-Management? A Case Study in Lake Chiuta, Malawi." *Marine Policy* 80: 147–53. <https://doi.org/10.1016/j.marpol.2016.10.018>.
- Ece, Melis. 2017. "Representation through Privatisation: Regionalisation of Forest Governance in Tambacounda, Senegal." *Conservation and Society* 15 (4): 439–50. https://doi.org/10.4103/cs.cs_16_104.
- Erbaugh, James T. 2019. "Responsibilization and Social Forestry in Indonesia." *Forest Policy and Economics* 109. <https://doi.org/10.1016/j.forpol.2019.102019>.
- Espada, Ana Luiza Violato, and Mário Vasconcellos Sobrinho. 2019. "Logging Community-Based Forests in the Amazon: An Analysis of External Influences, Multi-Partner Governance, and Resilience." *Forests* 10 (6). <https://doi.org/10.3390/f10060461>.

- Etigni, C. A., K. Irvine, and M. Kooy. 2017. "Playing by Whose Rules? Community Norms and Fisheries Rules in Selected Beaches within Lake Victoria (Kenya) Co-Management." *Environment, Development and Sustainability* 19 (4): 1557–75. <https://doi.org/10.1007/s10668-016-9799-2>.
- Etigni, Christine Adhiambo, Kenneth Irvine, and Michelle Kooy. 2020. "Participatory Governance in Lake Victoria (Kenya) Fisheries: Whose Voices Are Heard?" *Maritime Studies* 19 (4): 489–507. <https://doi.org/10.1007/s40152-020-00195-x>.
- Etigni, Christine, Michelle Kooy, and Kenneth Irvine. 2019. "Promoting Social Accountability for Equitable Fisheries within Beach Management Units in Lake Victoria (Kenya)." *Conservation and Society* 17 (1): 63–72. https://doi.org/10.4103/cs.cs_18_10.
- Fache, Elodie, and Annette Breckwoldt. 2018. "Small-Scale Managed Marine Areas over Time: Developments and Challenges in a Local Fijian Reef Fishery." *Journal of Environmental Management* 220. <https://doi.org/10.1016/j.jenvman.2018.05.029>.
- Faye, Papa. 2015. "Choice and Power: Resistance to Technical Domination in Senegal's Forest Decentralization." *Forest Policy and Economics* 60: 19–26. <https://doi.org/10.1016/j.forepol.2014.10.004>.
- Fidelman, Pedro, Truong Van Tuyen, Kim Nong, and Melissa Nursey-Bray. 2017. "The Institutions-Adaptive Capacity Nexus: Insights from Coastal Resources Co-Management in Cambodia and Vietnam." *Environmental Science and Policy* 76: 103–12. <https://doi.org/10.1016/j.envsci.2017.06.018>.
- Friedman, Rachel S., Jonathan R. Rhodes, Angela J. Dean, Elizabeth A. Law, Truly Santika, Sugeng Budiharta, Joseph A. Hutabarat, et al. 2020. "Analyzing Procedural Equity in Government-Led Community-Based Forest Management." *Ecology and Society* 25 (3): 1–18. <https://doi.org/10.5751/ES-11710-250316>.
- García-López, Gustavo A. 2019. "Rethinking Elite Persistence in Neoliberalism: Foresters and Techno-Bureaucratic Logics in Mexico's Community Forestry." *World Development* 120: 169–81. <https://doi.org/10.1016/j.worlddev.2018.03.018>.
- Gbedomon, Rodrigue Castro, Anne Floquet, Roch Mongbo, Valère Kolawolé Salako, Adandé Belarmain Fandohan, Achille Ephrem Assogbadjo, and Romain Glèlè Kakaï. 2016. "Socio-Economic and Ecological Outcomes of Community Based Forest Management: A Case Study from Tobé-Kpobidon Forest in Benin, Western Africa." *Forest Policy and Economics* 64. <https://doi.org/10.1016/j.forepol.2016.01.001>.
- Giri, Kalpana, and Ika Darnhofer. 2010. "Nepali Women Using Community Forestry as a Platform for Social Change." *Society and Natural Resources* 23 (12): 1216–29. <https://doi.org/10.1080/08941921003620533>.
- Gonzales Tovar, Jazmin, Juan P. Sarmiento Barletti, Anne M. Larson, Grenville Barnes, and Catherine M. Tucker. 2021. "Can Multistakeholder Forums Empower Indigenous and Local Communities and Promote Forest Conservation? A Comparative Analysis of Territorial Planning in Two Brazilian States with Contrasting Contexts." *Conservation Science and Practice* 3 (1): e326. <https://doi.org/10.1111/csp.2.326>.
- Green, Kathryn E. 2016. "A Political Ecology of Scaling: Struggles over Power, Land and Authority." *Geoforum* 74: 88–97. <https://doi.org/10.1016/j.geoforum.2016.05.007>.
- Gregorio, Nestor, John Herbohn, Rogelio Tripoli, and Arturo Pasa. 2020. "A Local Initiative to Achieve Global Forest and Landscape Restoration Challenge-Lessons Learned from a Community-Based Forest Restoration Project in Biliran Province, Philippines." *Forests* 11 (4). <https://doi.org/10.3390/F11040475>.
- Gross-Camp, Nicole. 2017. "Tanzania's Community Forests: Their Impact on Human Well-Being and Persistence in Spite of the Lack of Benefit." *Ecology and Society* 22 (1). <https://doi.org/10.5751/ES-09124-220137>.
- Gurung, T. B., P. Chaudhary, and K. P. Bhatta. 2019. "Restoring Rupa Lake Fisheries and Rural Livelihoods through Rights-Based Inclusive Governance." In *Securing Sustainable Small-Scale Fisheries: Sharing Good Practices from around the World*. FAO.
- Hajjar, Reem F., Robert A. Kozak, and John L. Innes. 2012. "Is Decentralization Leading to 'Real' Decision-Making Power for Forest-Dependent Communities? Case Studies from Mexico and Brazil." *Ecology and Society* 17 (1): 12. <https://doi.org/10.5751/ES-04570-170112>.
- Haller, Tobias, Greg Acciaioli, and Stephan Rist. 2016. "Constitutionality: Conditions for Crafting Local Ownership of Institution-Building Processes." *Society and Natural Resources* 29 (1): 68–87. <https://doi.org/10.1080/08941920.2015.1041661>.
- Hansen, Christian P., Rebecca Rutt, and Emmanuel Acheampong. 2018. "'Experimental' or Business as Usual? Implementing the European Union Forest Law Enforcement, Governance and Trade (FLEGT) Voluntary Partnership Agreement in Ghana." *Forest Policy and Economics* 96: 75–82. <https://doi.org/10.1016/j.forepol.2018.08.012>.
- Ho, Nga Thi Thanh, Helen Ross, and Jeffrey Coutts. 2015. "Power Sharing in Fisheries Co-Management in Tam Giang Lagoon, Vietnam." *Marine Policy* 53: 171–79. <https://doi.org/10.1016/j.marpol.2014.12.006>.
- Hoang, Cam, Poshendra Satyal, and Esteve Corbera. 2019. "'This Is My Garden': Justice Claims and Struggles over Forests in Vietnam's REDD+." *Climate Policy* 19 (sup 1): S23–35. <https://doi.org/10.1080/14693062.2018.1527202>.
- Hyle, Maija Anneli, Bishnu Prasad Devkota, and Irmeli Mustalahti. 2019. "From Blueprints to Empowerment of Disadvantaged Groups in Natural Resource Governance: Lessons from

- Nepal and Tanzania." *International Journal of the Commons* 13 (2): 1062–78. <https://doi.org/10.5334/ijc.951>.
- Ide, Tobias, Lisa R. Palmer, and Jon Barnett. 2021. "Environmental Peacebuilding from below: Customary Approaches in Timor-Leste." *International Affairs* 97 (1): 103–17. <https://doi.org/10.1093/ia/iaa059>.
- Islam, K. K., S. Jose, Masakazu Tani, Kimihiko Hyakumura, Max Krott, and Noriko Sato. 2015. "Does Actor Power Impede Outcomes in Participatory Agroforestry Approach? Evidence from Sal Forests Area, Bangladesh." *Agroforestry Systems* 89 (5): 885–99. <https://doi.org/10.1007/s10457-015-9822-x>.
- Kaluma, Ketiwe, and Bridget Bwalya Umar. 2021. "Outcomes of Participatory Fisheries Management: An Example from Co-Management in Zambia's Mweru-Luapula Fishery." *Heliyon* 7 (2): e06083–e06083. <https://doi.org/10.1016/j.heliyon.2021.e06083>.
- Kamoto, Judith, Graham Clarkson, Peter Dorward, and Derek Shepherd. 2013. "Doing More Harm than Good? Community Based Natural Resource Management and the Neglect of Local Institutions in Policy Development." *Land Use Policy* 35: 293–301. <https://doi.org/10.1016/j.landusepol.2013.06.002>.
- Kicheleri, Rose P., Lazaro J. Mangewa, Martin R. Nielsen, George C. Kajembe, and Thorsten Treue. 2021. "Designed for Accumulation by Dispossession: An Analysis of Tanzania's Wildlife Management Areas through the Case of Burunge." *Conservation Science and Practice* 3 (1). <https://doi.org/10.1111/csp.2.360>.
- Kicheleri, Rose P., Thorsten Treue, Martin R. Nielsen, George C. Kajembe, and Felister M. Mombo. 2018. "Institutional Rhetoric Versus Local Reality: A Case Study of Burunge Wildlife Management Area, Tanzania." *SAGE Open* 8 (2). <https://doi.org/10.1177/2158244018774382>.
- Killian, Bernadetta, and Maija Hyle. 2020. "Women's Marginalization in Participatory Forest Management: Impacts of Responsibilization in Tanzania." *Forest Policy and Economics* 118. <https://doi.org/10.1016/j.forpol.2020.102252>.
- Kimdung, Nguyen, Simon Bush, and Arthur P.J. Mol. 2013. "Administrative Co-Management: The Case of Special-Use Forest Conservation in Vietnam." *Environmental Management* 51 (3): 616–30. <https://doi.org/10.1007/s00267-012-0012-6>.
- Kimengsi, Jude Ndzifon, Pyi Soe Aung, Jürgen Pretzsch, Tobias Haller, and Eckhard Auch. 2019. "Constitutionality and the Co-Management of Protected Areas." *International Journal of the Commons* 13 (2): 1003–20.
- Koli, A. 2013. "Community Forest Management Addressing Social Vulnerability of Forest Communities in Bangladesh."
- International Forestry Review 15 (3): 336–47. <https://doi.org/10.1505/146554813807700100>.
- Kramer, John Michael, Uddin Shams, and Kabi Humayun. 2019. "USAID/Bangladesh Natural Resources Management (NRM) Sector Assessment Report." https://pdf.usaid.gov/pdf_docs/PA00WFCQ.pdf.
- Krause, Torsten, Wain Collen, and Kimberly A. Nicholas. 2013. "Evaluating Safeguards in a Conservation Incentive Program: Participation, Consent, and Benefit Sharing in Indigenous Communities of the Ecuadorian Amazon." *Ecology and Society* 18 (4). <https://doi.org/10.5751/ES-05733-180401>.
- Kundu, Rodrick, Christopher Mulanda Aura, Mucai Muchiri, James Murithi Njiru, and Jacob E. Ojuok. 2010. "Difficulties of Fishing at Lake Naivasha, Kenya: Is Community Participation in Management the Solution?" *Lakes and Reservoirs: Research and Management* 15 (1): 15–23. <https://doi.org/10.1111/j.1440-1770.2010.00419.x>.
- Kurniasih, Heni, Rebecca M. Ford, Rodney J. Keenan, and Barbara King. 2021. "The Evolution of Community Forestry through the Growth of Interlinked Community Institutions in Java, Indonesia." *World Development* 139: 105319–105319. <https://doi.org/10.1016/j.worlddev.2020.105319>.
- Lacuna-Richman, Celeste, Bishnu P. Devkota, and Mark A. Richman. 2016. "Users' Priorities for Good Governance in Community Forestry: Two Cases from Nepal's Terai Region." *Forest Policy and Economics* 65: 69–78. <https://doi.org/10.1016/j.forpol.2015.11.005>.
- Léopold, Marc, Olivier Thébaud, and Anthony Charles. 2019. "The Dynamics of Institutional Innovation: Crafting Co-Management in Small-Scale Fisheries through Action Research." *Journal of Environmental Management* 237. <https://doi.org/10.1016/j.jenvman.2019.01.112>.
- Leventon, Julia, Felix K. Kalaba, Jen C. Dyer, Lindsay C. Stringer, and Andrew J. Dougill. 2014. "Delivering Community Benefits through REDD+: Lessons from Joint Forest Management in Zambia." *Forest Policy and Economics* 44: 10–17. <https://doi.org/10.1016/j.forpol.2014.03.005>.
- Levine, Arielle. 2016. "The Development and Unraveling of Marine Resource Co-Management in the Pemba Channel, Zanzibar: Institutions, Governance, and the Politics of Scale." *Regional Environmental Change* 16 (5): 1279–91. <https://doi.org/10.1007/s10113-015-0856-4>.
- Lewins, Roger, Christophe Béné, Malloum Ousman Baba, Emma Belal, Steve Donda, Abbagana Mamane Lamine, Alassane Makadassou, et al. 2014. "African Inland Fisheries: Experiences with Co-Management and Policies of Decentralization." *Society and Natural Resources* 27 (4): 405–20. <https://doi.org/10.1080/08941920.2013.861564>.

- Long, S., P. J. S. Jones, Z. Randriana, and J. Hadj-Hammou. 2017. "Governance Analysis of a Community Managed Small-Scale Crab Fishery in Madagascar: Novel Use of an Empirical Framework." *Marine Policy*. <https://doi.org/10.1016/j.marpol.2017.11.022>.
- Long, Stephen, Grace Thurlow, Peter J. S. Jones, Andrew Turner, Sylvestre M. Randrianantenaina, Tom Gammage, Jessica Savage, and Jeremie R. Ndriamanja. 2019. "Critical Analysis of the Governance of the Sainte Luce Locally Managed Marine Area (LMMA), Southeast Madagascar." *Marine Policy*, no. September: 103691–103691. <https://doi.org/10.1016/j.marpol.2019.103691>.
- Luintel, Harisharan, Randall A. Bluffstone, Robert M. Scheller, and Bhim Adhikari. 2017. "The Effect of the Nepal Community Forestry Program on Equity in Benefit Sharing." *Journal of Environment and Development* 26 (3): 297–321. <https://doi.org/10.1177/1070496517707305>.
- Lund, Jens Friis, and Moeko Saito-Jensen. 2013. "Revisiting the Issue of Elite Capture of Participatory Initiatives." *World Development* 46: 104–12. <https://doi.org/10.1016/j.worlddev.2013.01.028>.
- Magessa, Kajenje, Sophie Wynne-Jones, and Neal Hockley. 2020. "Does Tanzanian Participatory Forest Management Policy Achieve Its Governance Objectives?" *Forest Policy and Economics* 111: 102077–102077. <https://doi.org/10.1016/j.forpol.2019.102077>.
- Makatta, Angelis Akwilini, Faustin Peter Maganga, and Amos Enock Majule. 2015. "A Hidden Pitfall for REDD: Analysis of Power Relation in Participatory Forest Management on Whether It Is an Obstacle or a Reliever on REDD Pathway." *International Journal of Forestry Research* 2015: 1–12. <https://doi.org/10.1155/2015/959016>.
- Maraseni, Tek Narayan, Nabin Bhattacharai, Bhaskar Singh Karky, Timothy Cadman, Niroj Timalsina, Trishna Singh Bhandari, Armando Apan, et al. 2019. "An Assessment of Governance Quality for Community-Based Forest Management Systems in Asia: Prioritisation of Governance Indicators at Various Scales." *Land Use Policy* 81: 750–61. <https://doi.org/10.1016/j.landusepol.2018.11.044>.
- McDougall, Cynthia, and Mani Ram Banjade. 2015. "Social Capital, Conflict, and Adaptive Collaborative Governance: Exploring the Dialectic." *Ecology and Society* 20 (1). <https://doi.org/10.5751/ES-07071-200144>.
- Measham, Thomas G., and Jared A. Lumbasi. 2013. "Success Factors for Community-Based Natural Resource Management (CBNRM): Lessons from Kenya and Australia." *Environmental Management* 52 (3): 649–59. <https://doi.org/10.1007/s00267-013-0114-9>.
- Méndez-Medina, Crisol, Birgit Schmook, Xavier Basurto, Stuart Fulton, and Alejandro Espinoza-Tenorio. 2020. "Achieving Coordination of Decentralized Fisheries Governance through Collaborative Arrangements: A Case Study of the Sian Ka'an Biosphere Reserve in Mexico." *Marine Policy* 117: 103939–103939. <https://doi.org/10.1016/j.marpol.2020.103939>.
- Miller, Adam E., Andrew Davenport, Stephanie Chen, Caroline Hart, Demi Gary, Ben Fitzpatrick, Muflihati, Kartikawati, Sudaryanti, and Novia Sagita. 2020. "Using a Participatory Impact Assessment Framework to Evaluate a Community-led Mangrove and Fisheries Conservation Approach in West Kalimantan, Indonesia." *People and Nature*. <https://doi.org/10.1002/pan3.10133>.
- Mogende, Emmanuel, and Oluwatoyin Kolawole. 2016. "Dynamics of Local Governance in Natural Resource Conservation in the Okavango Delta, Botswana." *Natural Resources Forum* 40 (3): 93–102. <https://doi.org/10.1111/1477-8947.12098>.
- Mohammed, A. J., and M. Inoue. 2012. "Explaining Disparity in Outcome from Community-Based Natural Resource Management (CBNRM): A Case Study in Chilimo Forest, Ethiopia." *Journal of Environmental Planning and Management* 55 (9): 1248–67. <https://doi.org/10.1080/09640568.2011.640171>.
- Mohammed, Abrar Juhar, and Makoto Inoue. 2012. "Drawbacks of Decentralized Natural Resource Management: Experience from Chilimo Participatory Forest Management Project, Ethiopia." *Journal of Forest Research* 17 (1): 30–36. <https://doi.org/10.1007/s10310-011-0270-9>.
- . 2014. "Linking Outputs and Outcomes from Devolved Forest Governance Using a Modified Actor-Power-Accountability Framework (MAPAF): Case Study from Chilimo Forest, Ethiopia." *Forest Policy and Economics* 39: 21–31. <https://doi.org/10.1016/j.forpol.2013.11.005>.
- Moyo, Francis, Jasper Ijumba, and Jens Friis Lund. 2016. "Failure by Design? Revisiting Tanzania's Flagship Wildlife Management Area Burunge." *Conservation and Society* 14 (3): 232–42. <https://doi.org/10.4103/0972-4923.191160>.
- Musavengane, Regis, Henry Bikwibili Tantoh, and Danny Simatele. 2019. "A Comparative Analysis of Collaborative Environmental Management of Natural Resources in Sub-Saharan Africa: A Study of Cameroon and South Africa." *Journal of Asian and African Studies* 54 (4): 512–32. <https://doi.org/10.1177/0021909618825276>.
- Mustalahti, Irmeli, Violeta Gutiérrez-Zamora, Maija Hyle, Bishnu Prasad Devkota, and Nina Tokola. 2020. "Responsibilization in Natural Resources Governance: A Romantic Doxa?" *Forest Policy and Economics* 111. <https://doi.org/10.1016/j.forpol.2019.102033>.
- Mutune, Jane Mutheu, and Jens Friis Lund. 2016. "Unpacking the Impacts of 'Participatory' Forestry Policies: Evidence from Kenya." *Forest Policy and Economics* 69. <https://doi.org/10.1016/j.forpol.2016.03.004>.

- Mwanjela, Geofrey, and Razack Lokina. 2016. "What Does It Take to Be Heard in Managing Marine Protected Areas? Insights from Tanzania Coastal Communities." *African Journal of Economic Review* 4 (1): 143–56.
- Nantongo, Mary, Arild Vatn, and Paul Vedeld. 2019. "All That Glitters Is Not Gold; Power and Participation in Processes and Structures of Implementing REDD+ in Kondoa, Tanzania." *Forest Policy and Economics* 100: 44–54. <https://doi.org/10.1016/j.forpol.2018.10.011>.
- Nhem, Sareth, and Young Jin Lee. 2019. "Using Q Methodology to Investigate the Views of Local Experts on the Sustainability of Community-Based Forestry in Oddar Meanchey Province, Cambodia." *Forest Policy and Economics* 106. <https://doi.org/10.1016/j.forpol.2019.101961>.
- Nhem, Sareth, and Young Jin Lee. 2020. "Exploring Perspectives in Assessing the Quality of Governance of the Reducing Emissions from Deforestation and Forest Degradation (REDD+) Pilot Project in Cambodia: Use of Q Methodology." *Journal of Mountain Science* 17 (1): 95–116. <https://doi.org/10.1007/s11629-018-5301-y>.
- Nightingale, Andrea, and Jeevan Raj Sharma. 2014. "Conflict Resilience among Community Forestry User Groups: Experiences in Nepal." *Disasters* 38 (3): 517–39. <https://doi.org/10.1111/dis.12056>.
- Njaya, Friday, Steve Donda, and Christophe Béné. 2012. "Analysis of Power in Fisheries Co-Management: Experiences from Malawi." *Society and Natural Resources* 25 (7): 652–66. <https://doi.org/10.1080/08941920.2011.627912>.
- Nkemnyi, Mbunya Francis. 2016. "An Analysis of Local Participation in Community Forestry: The Case of Tinto and Bimbia-Bonadikombo Community Forest, Cameroon." *Sustainability in Environment* 1 (2): 85–85. <https://doi.org/10.22158/se.v1n2p85>.
- Nkemnyi, Mbunya Francis, Tom De Herdt, George B. Chuyong, and Tom Vanwing. 2016. "Reconstituting the Role of Indigenous Structures in Protected Forest Management in Cameroon." *Forest Policy and Economics* 67: 45–51. <https://doi.org/10.1016/j.forpol.2016.03.012>.
- Nkhata, Bimo A., and Charles M. Breen. 2010. "Performance of Community-Based Natural Resource Governance for the Kafue Flats (Zambia)." *Environmental Conservation* 37 (3): 296–302. <https://doi.org/10.1017/S0376892910000585>.
- Noe, Christine, and Richard Y. M. Kangalawe. 2015. "Wildlife Protection, Community Participation in Conservation, and (Dis) Empowerment in Southern Tanzania." *Conservation and Society* 13 (3): 244–53. <https://doi.org/10.4103/0972-4923.170396>.
- Ntuli, Herbert, and Edwin Muchapondwa. 2018. "The Role of Institutions in Community Wildlife Conservation in Zimbabwe." *International Journal of the Commons* 12 (1): 134–69. <https://doi.org/10.18352/ijc.803>.
- Nuesiri, Emmanuel O. 2017. "Feigning Democracy: Performing Representation in the UN-REDD Funded Nigeria-REDD Programme." *Conservation and Society* 15 (4): 384–99. https://doi.org/10.4103/cs.cs_16_106.
- Nunan, Fiona. 2020. "The Political Economy of Fisheries Co-Management: Challenging the Potential for Success on Lake Victoria." *Global Environmental Change* 63: 102101–102101. <https://doi.org/10.1016/j.gloenvcha.2020.102101>.
- Nunan, Fiona, and Dražen Cepić. 2020. "Women and Fisheries Co-Management: Limits to Participation on Lake Victoria." *Fisheries Research* 224: 105454–105454. <https://doi.org/10.1016/j.fishres.2019.105454>.
- Nunan, Fiona, Dražen Cepić, Ernest Yongo, Mwanahamis Salehe, Bwambale Mbilingi, Konstantine Odongkara, Paul Onyango, Elizabeth Mlahagwa, and Monica Owili. 2018. "Compliance, Corruption and Co-Management: How Corruption Fuels Illegalities and Undermines the Legitimacy of Fisheries Co-Management." *International Journal of the Commons* 12 (2): 58–79. <https://doi.org/10.18352/ijc.827>.
- Nunan, Fiona, Marlyn A. Omond, Aziza Y. Nchimbi, Mwita M. Mangora, James G. Kairoe, Mwanahija S. Shalli, and Narriman S. Jiddawi. 2020. "The Silos of Natural Resource Governance: Implications of Sector-Led Coastal Management at the Village Level in Kenya and Zanzibar-Tanzania." *Conservation & Society* 18 (2): 148–60.
- Oduor, Ayub M. O. 2020. "Livelihood Impacts and Governance Processes of Community-Based Wildlife Conservation in Maasai Mara Ecosystem, Kenya." *Journal of Environmental Management* 260: 110133–110133. <https://doi.org/10.1016/j.jenvman.2020.110133>.
- Ojha, Hemant R., Mani R. Banjade, Ramesh K. Sunam, Basundhara Bhattacharai, Sudeep Jana, Keshab R. Goutam, and Sindhu Dhungana. 2014. "Can Authority Change through Deliberative Politics? Lessons from the Four Decades of Participatory Forest Policy Reform in Nepal." *Forest Policy and Economics* 46: 1–9. <https://doi.org/10.1016/j.forpol.2014.04.005>.
- Ojha, Hemant R., Prabin Bhusal, Naya S. Paudel, Paul M. Thompson, and Parvin Sultana. 2019. "Turning Conflicts into Cooperation? The Role of Adaptive Learning and Deliberation in Managing Natural Resources Conflicts in Nepal." *Climate Policy* 19 (sup1). <https://doi.org/10.1080/1493062.2018.1556240>.
- Persha, Lauren, and Krister Andersson. 2014. "Elite Capture Risk and Mitigation in Decentralized Forest Governance Regimes." *Global Environmental Change* 24. <https://doi.org/10.1016/j.gloenvcha.2013.12.005>.

- Persson, Joel, and Martin Prowse. 2017. "Collective Action on Forest Governance: An Institutional Analysis of the Cambodian Community Forest System." *Forest Policy and Economics* 83: 70–79. <https://doi.org/10.1016/j.forpol.2017.06.008>.
- Rabby, Al Amin, and Mohammed Anwar Hossain. 2019. "Institutional Constraints to Fishers Resilience: Community Based Fishery Management in Bangladesh." *International Journal of the Commons* 13 (1): 507–27. <https://doi.org/10.18352/ijc.902>.
- Rantala, S., and L. A. German. 2013. "Exploring Village Governance Processes behind Community-based Forest Management: Legitimacy and Coercion in the Usambara Mountains of Tanzania." *International Forestry Review* 15 (3): 355–67. <https://doi.org/10.1505/146554813807700155>.
- Ray, Biswajit, Promita Mukherjee, and Rabindra N. Bhattacharya. 2017. "Attitudes and Cooperation: Does Gender Matter in Community-Based Forest Management?" *Environment and Development Economics* 22 (5): 594–623. <https://doi.org/10.1017/S1355770X16000358>.
- Rivera, A., J. San Martin-Chicas, and J. Myton. 2021. "Transitioning to Co-Management in Caribbean Reef Fisheries: Tela Bay Case Study." *Sustainability Science*. <https://doi.org/10.1007/s11625-021-00922-1>.
- Rives, Fanny, Stéphanie M. Carrière, Pierre Montagne, Sigrid Aubert, and Nicole Sibelet. 2013. "Forest Management Devolution: Gap between Technicians' Design and Villagers' Practices in Madagascar." *Environmental Management* 52 (4): 877–93. <https://doi.org/10.1007/s00267-013-0138-1>.
- Robinson, Lance W., and Joram K. Kagombe. 2018. "Institutional Linkages and Landscape Governance Systems: The Case of Mt. Marsabit, Kenya." *Ecology and Society* 23 (1). <https://doi.org/10.5751/ES-09933-230127>.
- Robinson, Lance W., and Enock Makupa. 2015. "Using Analysis of Governance to Unpack Community-Based Conservation: A Case Study from Tanzania." *Environmental Management* 56 (5): 1214–27. <https://doi.org/10.1007/s00267-015-0573-2>.
- Ruzol, Clarissa D., April Charmaine D. Camacho, Lorena L. Sabino, Josephine E. Garcia, Dixon T. Gevaña, and Leni D. Camacho. 2020. "A Materialist-Idealist Divide? Policy and Practice in Participatory Mangrove Rehabilitation in the Philippines." *Environmental Science and Policy* 112: 394–404. <https://doi.org/10.1016/j.envsci.2020.06.026>.
- Salerno, Jonathan, Krister Andersson, Karen M. Bailey, Tom Hilton, Kephania K. Mwaviko, Isaya Donald Simon, Claire Bracebridge, et al. 2021. "More Robust Local Governance Suggests Positive Effects of Long-term Community Conservation." *Conservation Science and Practice* 3 (1): e297. <https://doi.org/10.1111/csp.2.297>.
- Samndong, Raymond Achu, and Darley Jose Kjosavik. 2017. "Gendered Forests: Exploring Gender Dimensions in Forest Governance and REDD+ in Équateur Province, Democratic Republic of Congo (DRC)." *Ecology and Society* 22 (4): 34–34. <https://doi.org/10.5751/ES-09753-220434>.
- Sapkota, Lok Mani, Hari Dhungana, Bishnu Hari Poudyal, Binod Chapagain, and David Gritten. 2020. "Understanding the Barriers to Community Forestry Delivering on Its Potential: An Illustration From Two Heterogeneous Districts in Nepal." *Environmental Management* 65 (4): 463–77. <https://doi.org/10.1007/s00267-019-01224-0>.
- Sapkota, Prativa, Rodney J. Keenan, and Hemant R. Ojha. 2018. "Community Institutions, Social Marginalization and the Adaptive Capacity: A Case Study of a Community Forestry User Group in the Nepal Himalayas." *Forest Policy and Economics* 92: 55–64. <https://doi.org/10.1016/j.forpol.2018.04.001>.
- Sattler, Claudia, Barbara Schröter, Angela Meyer, Gregor Giersch, Claas Meyer, and Bettina Matzdorf. 2016. "Multilevel Governance in Community-Based Environmental Management: A Case Study Comparison from Latin America." *Ecology and Society* 21 (4). <https://doi.org/10.5751/ES-08475-210424>.
- Scheba, Andreas, and Irmeli Mustalahti. 2015. "Rethinking 'Expert' Knowledge in Community Forest Management in Tanzania." *Forest Policy and Economics* 60. <https://doi.org/10.1016/j.forpol.2014.12.007>.
- Scheba, Andreas, and O. Sarobidy Rakotonarivo. 2016. "Territorialising REDD+: Conflicts over Market-Based Forest Conservation in Lindi, Tanzania." *Land Use Policy* 57. <https://doi.org/10.1016/j.landusepol.2016.06.028>.
- Schusser, Carsten. 2013. "Who Determines Biodiversity? An Analysis of Actors' Power and Interests in Community Forestry in Namibia." *Forest Policy and Economics* 36: 42–51. <https://doi.org/10.1016/j.forpol.2012.06.005>.
- Shamsul Kabir, G. M., Tai Shzee Yew, Kusairi Mohd Noh, and Law Siong Hook. 2013. "Assessment of Governance of Fisher Communities of Inland Openwater Fisheries in Bangladesh." *Ocean and Coastal Management* 80: 20–28. <https://doi.org/10.1016/j.ocecoaman.2013.03.014>.
- Sheppard, Donna J., Axel Moehrenschlager, Jana M. McPherson, and John J. Mason. 2010. "Ten Years of Adaptive Community-Governed Conservation: Evaluating Biodiversity Protection and Poverty Alleviation in a West African Hippopotamus Reserve." *Environmental Conservation* 37 (3): 270–82. <https://doi.org/10.1017/S037689291000041X>.
- Soliku, Ophelia, and Ulrich Schraml. 2020a. "From Conflict to Collaboration: The Contribution of Comanagement in

- Mitigating Conflicts in Mole National Park, Ghana." *Oryx* 54 (4): 483–94. <https://doi.org/10.1017/S0030605318000285>.
- . 2020b. "Protected Areas Management: A Comparison of Perceived Outcomes Associated with Different Co-Management Types." *Forest Policy and Economics* 118: 102258–102258. <https://doi.org/10.1016/j.forepol.2020.102258>.
- Subhan Mollick, Abdus, Md Khalilur Rahman, Md Nabiul Islam Khan, and Md Nazmus Sadath. 2018. "Evaluation of Good Governance in a Participatory Forestry Program: A Case Study in Madhupur Sal Forests of Bangladesh." *Forest Policy and Economics* 95: 123–37. <https://doi.org/10.1016/j.forepol.2018.07.014>.
- Sugimoto, Ayumi, Juan M. Pulhin, and Makoto Inoue. 2014. "Is Recentralization Really Dominant? The Role of Frontline Foresters for Institutional Arrangement in the Philippines." *Small-Scale Forestry* 13 (2): 183–200. <https://doi.org/10.1007/s11842-013-9248-0>.
- Thondhlana, Gladman, Sheona Shackleton, and James Blignaut. 2015. "Local Institutions, Actors, and Natural Resource Governance in Kgalagadi Transfrontier Park and Surrounds, South Africa." *Land Use Policy* 47: 121–29. <https://doi.org/10.1016/j.landusepol.2015.03.013>.
- Tilley, Alexander, Kimberley J. Hunnam, David J. Mills, Dirk J. Steenbergen, Hugh Govan, Enrique Alonso-Poblacion, Matthew Roscher, et al. 2019. "Evaluating the Fit of Co-Management for Small-Scale Fisheries Governance in Timor-Leste." *Frontiers in Marine Science* 6. <https://doi.org/10.3389/fmars.2019.00392>.
- Turner, R. A., C. Fitzsimmons, J. Forster, R. Mahon, A. Peterson, and S. M. Stead. 2014. "Measuring Good Governance for Complex Ecosystems: Perceptions of Coral Reef-Dependent Communities in the Caribbean." *Global Environmental Change* 29: 105–17. <https://doi.org/10.1016/j.gloenvcha.2014.08.004>.
- Uddin, Mohammad Nizam, Mohammad Mosharraf Hossain, Yong Chen, Wapakorn Siriwong, and Jaruntorn Boonyanuphap. 2019. "Stakeholders' Perception on Indigenous Community-Based Management of Village Common Forests in Chittagong Hill Tracts, Bangladesh." *Forest Policy and Economics* 100. <https://doi.org/10.1016/j.forepol.2018.12.005>.
- Valenzuela, Roswin B., Youn Yeo-Chang, Mi Sun Park, and Jung Nam Chun. 2020. "Local People's Participation in Mangrove Restoration Projects and Impacts on Social Capital and Livelihood: A Case Study in the Philippines." *Forests* 11 (5). <https://doi.org/10.3390/F11050580>.
- Wangui, Elizabeth Edna, and Thomas Alan Smucker. 2018. "Gendered Opportunities and Constraints to Scaling up: A Case Study of Spontaneous Adaptation in a Pastoralist Community in Mwanga District, Tanzania." *Climate and Development* 10 (4): 369–76. <https://doi.org/10.1080/1756529.2017.1301867>.
- Yadav, Bhagwan Dutta, Hugh Biggsby, and Ian MacDonald. 2015. "How Can Poor and Disadvantaged Households Get an Opportunity to Become a Leader in Community Forestry in Nepal?" *Forest Policy and Economics* 52: 27–38. <https://doi.org/10.1016/j.forepol.2014.11.010>.
- . 2017. "Rules of Benefit Distribution: A Dynamic Impact on Nepalese Community Forestry Organizations." *Journal of Sustainable Forestry* 36 (2): 177–97. <https://doi.org/10.1080/10549811.2016.1275700>.
- Yeboah-Assiamah, Emmanuel, Kobus Muller, and Kwame Ameyaw Domfeh. 2018. "'Complex Crisis' and the Rise of Collaborative Natural Resource Governance: Institutional Trajectory of a Wildlife Governance Experience in Ghana." *Environment, Development and Sustainability* 20 (5): 2205–24. <https://doi.org/10.1007/s10668-017-9985-x>.
- Zetina-Rejón, Manuel J., José Alberto Zepeda-Domínguez, Marian Rodríguez-Fuentes, and Claudia María Fumero-Andreu. 2020. "Stakeholder Diversity Correlates with Governance Network Performance in Two Artisanal Fisheries in Northwest Mexico." *Ocean & Coastal Management* 196. <https://doi.org/10.1016/j.ocecoaman.2020.105313>.
- Zulu, Leo. 2013. "Bringing People Back into Protected Forests in Developing Countries: Insights from Co-Management in Malawi." *Sustainability (Switzerland)* 5 (5): 1917–43. <https://doi.org/10.3390/su5051917>.

ANNEX 5.

Codebook

All data extracted from 151 included studies using this codebook is available [here](#).

	Article ID	Number
	Name of Assessor	Text
	Date of assessment	Date
1. Bibliographic information	Publication type	List
	Authors	Text
	Year of publication	List
	Title	Text
	Journal	Text
	Indicated Affiliation of first author	Text
	Affiliation type of first author	List
	DOI	Text
	Source	List
	Where does this study focus on?	Text
2. Contextual information	What country(ies) does this study focus on?	List
	What is the resource type under study?	List
	Describe the existing context around the resource in question	Text
	What is the objective of this study (as stated by authors)?	Text
3. Study information	Do the authors use a clearly defined theoretical/conceptual framework or approach about links between PNRM and democratic outcomes?	Y/N
	If so, describe it	Text
	At what scale does the study occur? Check all that apply	Local Subnational National Regional Global HL coding notes
		Continuous time series Punctuated time series Before/after intervention With/without During intervention Spatial Between Groups
	What comparator(s) is used in this study? Check all that apply	
	If possible, provide details on timing of study	Text
	Study type	List
	Research approach	List
	Data type	Quantitative Qualitative Ordinal/Likert

	Name of intervention	Text
	Describe the intervention(s)	Text
	Describe the motivation for pursuing the intervention(s)	Text
	Does that motivation include changes to downstream democratic outcomes?	Y/N
		Local
		Subnational
		National
		Regional
		Global
4. Intervention	At what scale does the intervention/do these interventions occur? Check all that apply	
	Where does the intervention occur (be as specific as possible)	Text
	Who are the key actors in the intervention?	Text
	Does the intervention explicitly include considerations for women and/or marginalized groups?	Y/N
	If so, describe	Text
	What is the category of outcome being examined?	
	What is the subcategory of the outcome being examined?	
	Describe the outcome being observed/measured (one row per outcome)	
		Sex/Gender
		Age
		Occupation/class
		Race/ethnicity
		Indigenous Peoples Group
5. Outcome(s)	Is measurement of this outcome disaggregated between groups? If so, check all that apply	
	How is the outcome measured?	
	Describe the direction of the outcome	
	Who defines the measurement/indicator?	Text
	Who validates the measurement/indicator?	Text
	Does the study consider links between multiple outcomes?	Y/N
	Describe links considered between multiple outcomes	Text
	Do the authors describe the mechanism that links PNRM and the outcome (s)?	Y/N
		social capital
		power (between users or state/users)
		relationships (between users or state/users)
		human capital
		economic/financial capital
		political/social, conflicts/stability
		access to participation (GESI)
		constraints to participation (GESI)
6. Outcomes adjacent	What category does the mechanism that links PNRM and outcome(s) fall into? (check all that apply)	
	Describe the mechanism(s) that links PNRM and the outcome (s)	Text
	Does the outcome (s) occur in parallel to implementation or downstream from implementation, or both?	List
	Describe the outcome(s) in relation to the implementation (parallel and/or downstream)	Text



The USAID logo graphic consists of a blue circle with a white outline, containing a white plus sign. The circle is centered in the lower half of the image, overlapping the bottom of the photograph.

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