

**MANGROVE GOVERNANCE AND TENURE: INSIGHTS FOR POLICY AND
PRACTICE FROM SELECTED SITES IN INDONESIA, TANZANIA AND A GLOBAL
REVIEW**

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Mangrove Governance and Tenure: Insights for Policy and Practice from Selected Sites in Indonesia, Tanzania and a Global Review

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Mangroves are trees and shrubs juxtaposed between land and sea in the world's subtropics and tropics. Mangrove forest ecosystems are highly productive, rich in biodiversity and adapted to the harsh and variable interface between land and sea. Despite their recognized importance in carbon sequestration, coastal protection, biodiversity conservation, and carbon sequestration, and the provision of habitat, spawning grounds and nutrients for a variety of fish, the world's mangrove are on the decline. Between 1980 and now, about one-fifth of global mangroves have disappeared, with the Asian and Pacific regions recording the highest decline (>20%) and Africa recording the lowest decline (8%) in mangrove forests cover. The major causes of decline in mangrove forests are anthropogenic and include over-extraction and deforestation; infilling, drainage and conversion to aquaculture; agricultural, urban and industrial runoff; oil spills; and poorly managed dredging and coastal development. There is thus strong global pressure for mangrove conservation, and evidence to inform conservation, management and rehabilitation is at a premium. Research on mangroves is highly imbalanced with a great proportion conducted on biophysical dimensions relative to the human dimensions. In particular, analyses of governance arrangements (including tenure rights) and their implications for sustainable use and management or rehabilitation and restoration are scarce. This paper presents results of a study on mangrove governance and tenure in Indonesia and Tanzania. Both countries are recognized for having substantial mangrove cover in their respective regions and for experimenting with diverse mangrove management and rehabilitation approaches. Our analysis comprises reviews of legal, policy and institutional frameworks, in-depth assessment of local level institutional arrangements and practices for mangrove management and restoration in selected sites, and a global review of literature. We examine the type and distribution of tenure rights, resource use and management as well as interactions among communities and mandated authorities in mangrove protection and rehabilitation.

Findings of the global review show that authority over mangrove conservation and management is overwhelmingly vested in state institutions with protection as a central objective. Protection efforts face major challenges and enforcement is constrained by inadequate personnel and budgets. Frameworks and mechanisms for coordinating across agencies and governance levels are uncommon, and where they exist, they are difficult to put into practice. Laws and policies have not been crafted for the specific management requirements of mangroves. Instead, mangroves are regulated under legal frameworks intended for forests, environment, water, land or marine fisheries. Local tenure rights to mangrove resources also vary. Customary rights and systems of use and management (especially in Africa) are often unrecognized by statutory systems. Local, indigenous rights are more often than not recognized by the state in Latin America, where full ownership, including titles, is granted to communities. In parts of Asia, long duration leases are granted to households and communities. These leases often offer a broad range of rights in the bundle sometimes including transfer rights. There is increasing experimentation with community-based approaches with mixed outcomes for mangroves. Tenure arrangements that accord full ownership or longer term rights appear to be more effective in

mangrove conservation. Where customary rights are not respected or recognized and are actively undermined or community institutions are subject to government interference, mangroves tend to deteriorate. Gender equity is a missing element in mangrove conservation and management. Local level findings in selected study sites in Indonesia are generally consistent with the global review's findings. For example, the legal and institutional framework for the governance of mangroves in Indonesia is characterized by fragmented authority. Mangrove management authority falls under five different government authorities which poses major coordination challenges across line ministries. Though Tanzania's legal framework vests the mandate in one agency, rule enforcement practices have often pitted forest authorities against marine/coastal resources management authorities resulting in conflict. Furthermore, lack of coordination between mainland Tanzania and Zanzibar on the regulation of mangrove products negatively affects mangrove management. At the local level, Indonesia's multiplicity of regulations from different sectors appears to be tempered or even substituted by mangrove-specific regulations. Local level village regulations for mangrove protection and conservation in our study sites are designed specifically for mangroves and are implemented as such. Moreover, they are integrated into broader resource management rules at village and district levels. Unlike Indonesia, local level mangrove management in Tanzania is hindered by active enforcement of mangrove protection policies, which has over time restricted local community access and use, banned mangrove harvesting or even evicted communities cultivating or settling in mangrove forest areas. Strict protection (i.e. forest reserves) has been challenged by expanding paddy rice farming, increasing demand for mangrove forest products and limited human and financial resources.

Communities in Indonesia, unlike in Tanzania, generally feel that their rights to use and manage mangroves and to exclude unsanctioned users are generally secure. However, the government and development partners in Tanzania are experimenting with different models of community management that attempt to expand tenure rights and benefits such as providing individual permits under a taungya system, group rehabilitation schemes and joint forest management. Community members appear to prefer joint forest management as it provides a broader range of rights and benefits to participating communities unlike the taungya system which imposes a broad range of responsibilities on resource users for short-duration, relatively insecure rights.

Support for community management initiatives in Indonesia is provided by diverse actors including government and non-governmental agencies, the private sector and universities. They provide seedlings, cover labor costs, awareness-raising/educational programs and skill development. This support has been instrumental in sustaining local enthusiasm for mangrove management and rehabilitation. Here, local leadership is important: successful community initiatives are often spearheaded by active, committed, and trusted leadership. Such leaders can establish and maintain links with external agencies, securing funding and other support for mangrove management, protection, and rehabilitation. In both Indonesia and Tanzania, women's involvement in mangrove management and rehabilitation are severely constrained by local norms. In Indonesia, women are trapped in low-skilled activities and are left out of the decision-making processes at the village level. This is similar to Tanzania where women are left out of local resource group leadership.

Overall, this study demonstrates that there is a mismatch between the attributes of the mangrove resource (i.e. being both on land and sea) and the legal and institutional frameworks designed and adopted for their governance. Most mangroves are managed by single, mandated authorities

such as forestry agencies which for the most part are under resourced. Where institutional design takes into account the biophysical complexity of mangrove resource, there often lacks a coherent coordination framework, which negatively affects resource management. Furthermore, unlike terrestrial forest systems, which are increasingly characterized by devolving management authority to lower levels of governance (including communities), mangroves appear mostly trapped in outdated modes of management such as strict protection alone. Paradoxically, mangrove governance does not demonstrate the diverse management regimes that are characteristic of terrestrial forests even though the systems and rules underpinning their management are drawn heavily from terrestrial settings. However, where community rights to mangroves are expanded and formally recognized (such as in parts of Asia and Latin America) positive outcomes for resource condition and rehabilitation efforts are increasingly evident. Both the global review and country cases show that gender equity is not considered in in any meaningful way in contrast with terrestrial forest management where there is increasing focus on broadening and deepening women's participation in decision making and benefits.