IUCN COMMISSION ON ENVIRONMENTAL, ECONOMIC AND SOCIAL POLICY

# Policy Matters

Issue No. 23
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## Journeys to more equitable and effective conservation: the central role of Indigenous peoples and local communities

IUCN
CEESP Commission on Environmental, Economic and Social Policy
FRB Fondation pour la Recherche sur la Biodiversité
CESAB Centre for the Synthesis and Analysis of Biodiversity

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CESAB is FRB's flagship programme, aiming to implement innovative work to synthesise and analyse existing data sets in biodiversity research. The collaboration between IUCN CEESP and FRB CESAB on this issue was formed through the Just Conservation project funded by FRB CESAB from 2019 to 2023 and consisting of an international working group, including several members of the editorial team: Brendan Coolsaet, as Principal Investigator, Neil Dawson, Aditi Bhardwaj, Malena Oliva and Thomas Worsdell.

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**Cover photo**: A young Siona woman from the Aboquëhuira community, Ecuador, hides from the rain as she continues her work registering the growth of Yoco (*Paullinia yoco*) an important medicinal plant. For several years the Siona Nation on the Aguarico River have researched the best conditions to grow *yoco* in their forest gardens (*chagras*). (**Photo credit**: Daris Piaguaje, a Siona Indigenous photographer, Alianza Ceibo; taken in 2022)

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# List of abbreviations and acronyms

| | |
|---|---|
| **ACC** | African Conservation Centre |
| **AMAN** | Aliansi Masyarakat Adat Nusantara (Indigenous Peoples' Alliance of the Archipelago) |
| **CDF** | Community Development Fund |
| **CONAFOR** | Comisión Nacional Forestal (National Council on Forestry, Mexico) |
| **CSO** | Civil society organisation |
| **DMCR** | Department of Marine and Coastal Resources (Thailand) |
| **DPRD** | Dewan Perwakilan Rakyat Daerah (Indonesian Community Mapping Network) |
| **EDCs** | Eco-development Committees |
| **FPIC** | Free, Prior and Informed Consent |
| **FSM** | Federated States of Micronesia |
| **GHSNP** | Gunung Halimun Salak National Park |
| **ha** | hectare |
| **IEP** | India Eco-development Project |
| **IUCN** | International Union for Conservation of Nature |
| **JKPP** | Jaringan Kerja Pemetaan Partisipatif Paksaan (Indonesian Community Mapping Network) |
| **KES** | Kenyan Schilling |
| **MGA** | Malagasy Ariary |
| **MoEF** | Ministry of Environment and Forestry, Indonesia |
| **MPA** | Marine Protected Area |
| **NGO** | Non-governmental organisation |
| **OPOR** | One People One Reef |
| **PA** | Protected area |
| **Perda** | Peraturan Daerah (local regulation) |
| **PES** | Payment of ecosystem services |
| **PPF** | Plan Piloto Forestal (Forest Pilot Plan) |
| **PTCF** | Periyar Tiger Conservation Foundation |
| **PTR** | Periyar Tiger Reserve |
| **RMI** | Rimbawan Muda Indonesia (Indonesian Institute for Forest and Environment) |
| **SEMARNAT** | Secretaría del Medio Ambiente y Recursos Naturales (Secretariat of Environment and Natural Resources, Mexico) |
| **SHG** | Self-help group |
| **UNDP** | United Nations Develpment Programme |
| **VOI** | Vondron'Olona Ifotony |
| **WWF** | World Wide Fund for Nature |

# Acknowledgements

Each of the articles in this issue describe conservation initiatives that involve a central or relatively influential role for Indigenous Peoples and local communities, whether through a progressive governance shift or relative to mainstream conservation initiatives within an ecosystem or region. In this sense they represent innovative cases to learn from, and this is made possible by in-depth, multidisciplinary research and synthesis, documenting not only the ecological changes, but also the social and institutional dynamics that have unfolded at each site, sometimes over many years. The seven cases detail conservation efforts in diverse ecosystems and contexts, in Thailand, India, Yap in the Federated States of Micronesia, Madagascar, Kenya, Mexico and Indonesia. This combination makes for a valuable set of articles, which was challenging to identify, document and bring to fruition.

We are grateful to IUCN CEESP for funding to support the idea, since its inception in 2018, and to the Centre for the Synthesis and Analysis of Biodiversity of the Foundation for Research on Biodiversity (FRB CESAB) for funding to bring this collection together in an issue of *Policy Matters*. We wish to thank Diwata Hunziker, who again so capably and calmly managed the copyediting, proofreading, design and layout. We are also grateful to Joel Redman and If Not Us Then Who? for permission to use their images for the editorial article.

To all the authors who contributed to this issue of *Policy Matters*, and several who were part of the earlier process but whose articles did not make it this far, we express enormous gratitude. The authors of the seven articles include scholars, activists, practitioners, Indigenous and local community leaders, and in most cases two or more of these roles. They bring intimate knowledge and experience of the cases and their evolution, over many years for some. We are grateful to all for dedicating their time to this in addition to their important work, and especially for their perseverance through the uncertain times and pressures of the covid pandemic.

We are very grateful to the members of the CEESP Theme on Human Well-being and Sustainable Livelihoods, who volunteered to share or find case studies that fit the challenging remit, and those who volunteered their time and expertise to make the review process a relatively quick, constructive and enjoyable process. Our thanks go to Saima Baig, Bruce Downie, Ambika Gautam, Paromita Ghosh, Emmanuel Kileli Ole, Warren G. Lavey, Stephanie Mansourian, Pablo Manzano, Rodd Myers, Jocelyne Sze, Ron Vave and Nicole Yamase.

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**The Editors:**

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Indigenous Embera woman returns from the forest, in Embera Wounaan territory, Panama. Photo: Joel Redman/If Not Us Then Who?

EDITORIAL

# Towards more equitable and effective nature conservation led by Indigenous peoples and local communities

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## Abstract

Principles for equitable governance and respect for rights are integral to the ambitious global biodiversity targets for 2030. Adhering to these principles requires a widespread shift in mainstream conservation practice – one that is both morally imperative and holds the greatest potential to address biodiversity loss. But there is limited understanding about how to reorient site-level practices, and address the barriers, which impede a transformation in the role of Indigenous peoples and local communities. This edition of *Policy Matters* addresses that knowledge gap by providing detailed case study examples in which journeys are underway towards more equitable and effective conservation. This introduction brings together key messages about the changes enacted, challenges faced, lessons learned and outcomes evidenced from the diverse cases – in Thailand, India, the Federated States of Micronesia, Madagascar, Kenya, Mexico and Indonesia – and acts as a call to situate Indigenous peoples and local communities, their knowledge and practices, at the centre of a global shift towards more just and effective conservation.

**Key words**: Global biodiversity framework; environmental justice; customary governance; human rights; 30x30 target; well-being; traditional knowledge

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## Changing the narratives and practices of biodiversity conservation

As attention turns to the question of how to pursue the ambitious new global biodiversity targets for 2030, there is an inconvenient wisdom that simply expanding current practices will not work, for either people or nature (Reyes-García et al., 2022). The rights, knowledge and practices of Indigenous peoples and local communities are recognised in the Kunming-Montreal Global Biodiversity Framework, alongside their irreplaceable contribution to delivering effective conservation, for example through standards for equitable governance and respect for rights enshrined in targets 1, 3, 9, 21 and 22 (UNEP, 2022). However, beyond places where Indigenous Peoples and local communities govern their territories with relative autonomy, only a small minority

of conservation initiatives across the globe currently adhere to these standards, representing a conspicuous gulf between conservation in principle and practice (Zafra-Calvo et al., 2019). This places global conservation efforts at a critical juncture, with many possible trajectories between the global expansion of inequitable, externally-led forms of conservation at one end, and at the other, a shift towards the recognition of Indigenous peoples' and local communities' knowledge systems and empowerment of their custodianship of nature.

The key challenge for the future of conservation is to reorient towards and implement at scale the social and governance principles already articulated in policy, not only in places newly targeted for protection or restoration but also across existing conservation areas. A transformation of conservation practice to centre on rights and equity, extending attention to the diverse values, cultures, worldviews and past injustices endured by Indigenous peoples and local communities, holds arguably the greatest potential to address biodiversity loss (Brondizio & Le Tourneau, 2016; Fidler et al., 2022). Here we define such a transformation as radical systemic and structural change, not simply superficial technical and practical amendments to conservation policies and allocations but a social, psychological and relational process, including multiple complementary advances contributing to a deep, long-lasting shift in the way people think about, approach and interact with others for conservation (O'Brien & Sygna, 2013). Particularly for existing initiatives under external state, non-governmental or private control, there is a lack of understanding about how conservation practice can be transformed at the site or regional level, especially since systems of rights are inadequate in many countries to support and protect the diversity of human relationships with the natural world (Asian Indigenous Peoples Pact et al., 2022).

This edition of *Policy Matters* addresses the knowledge gap about how to enact such changes by providing detailed site level examples in which journeys towards more socially equitable forms of conservation are being undertaken. Although socially just conservation is not yet a global norm, instances are being increasingly recorded and lessons collated (see Forest Peoples Programme et al., 2020; Charles, 2021; Zanjani et al., 2023). To support a shift in wider practice, there is a need to share knowledge from those examples about how steps towards equitable or rights-based conservation are taken at the site level, why and by whom, and what experiences, problems, solutions and outcomes result (Artelle et al., 2019). The articles in this issue describe experiences, interactions, challenges and social and ecological impacts that have emerged at each site. Crucially, they all place Indigenous peoples and local communities, and their connections with and governance of ecosystems at the heart of transformative change. And they all prove that beyond the moral imperative for doing so, adopting such approaches on a broader scale could significantly increase the effectiveness, sustainability and resilience of biodiversity conservation. Regarding how to enact such a transformation, the cases demonstrate that the practical integration of social objectives at a site must extend far beyond support for income generation and livelihoods, to also address trust and relationships, recognise diverse worldviews, place-based connections, cultural values and practices, and to centre governance structures around local and customary institutions.

This introduction article brings together some key messages from the case studies, and acts as a call for just and effective forms of conservation that situate Indigenous peoples and local communities as the source of transformation. We first set out the

case for why transformative change in this direction is urgently required. We then introduce the collection of case study articles, drawing out some of the key themes and lessons to synthesise how such change can be realised in various contexts.

## The imperative for an equitable approach

Transforming to just and equitable forms of biodiversity conservation is imperative for two key reasons – as previous editions of *Policy Matters* have articulated – it is both ethically necessary and critical for achieving conservation objectives (Campese et al., 2007). First, there is a moral imperative to close the conspicuous gap between the social standards readily expressed by conservation policy makers and practitioners, and the outcomes of conservation initiatives experienced on the ground (Zafra-Calvo et al., 2019). Principles for rights-based conservation, recognition of customary institutions, plural knowledge systems (and the different values and worldviews that underpin them), and full and effective participation by Indigenous peoples and local communities are often preached and feature strongly in the United Nations Convention on Biological Diversity (CBD) and Kunming-Montreal Global Biodiversity Framework (GBF), but are seldom practised (Kashwan, 2013, Cariño & Ferrari, 2021).

Equitable, intercultural collaboration is increasingly expressed through the Indigenous concept of 'two-eyed seeing' or "learning to see from one eye with the strengths of Indigenous knowledges, and from the other eye with the strengths of Western [scientific] knowledges, and to use both together, for the benefit of all" (Bartlett et al., 2012, p. 335). In contrast, the global conservation sector might instead be described as two-faced, because the standards written into policies, safeguards and mission statements can seem deeply disconnected from the actions through which conservation is being implemented. Within modern conservation practice, there is a constant push for new ideas and science- or market-led approaches to 'solve' the global biodiversity crisis, which can involve oversight of, or attempts to integrate or cherry-pick from, Indigenous and local knowledge, and produce epistemic injustices (Adams, 2017). Long-standing calls to 'dismantle the divide' and thus enable recognition, decolonisation and respectful collaborations (Agrawal, 1995) have not been fully heard.

Examples of rights violations are common in global conservation, as states, non-governmental organisations (NGOs) or private actors, acting under the guise of conservation, displace Indigenous peoples and local communities with ancestral rights, customary institutions and cultural practices, and treat these groups as a threat to nature rather than as rightsholders and as integral to successful outcomes (Boyd & Keene, 2021). The forced evictions of Indigenous Maasai communities from Loliondo and Ngorongoro, Tanzania for claimed conservation purposes, only to give way to a hunting concession awarded to foreign state leaders, are a case in point, exemplifying the role of some conservation interventions in the long-term, structural discrimination of Indigenous Peoples (Weldemichel, 2022). These evictions coincided with the first IUCN African Protected Area Congress in July 2022, at which the Nairobi Declaration was presented by African Indigenous peoples and local communities to demand respect of their knowledge and rights. Such forms of 'conservation' through appropriation certainly have no place in the modern era and must be widely condemned and excluded from any form of conservation reporting to measure progress towards area or species coverage targets.

Erik Marky of the Terena People (Brazil), and co-founder of Media Indigena, conducts a short interview on the streets of Glasgow during COP-26.

Photo: Joel Redman/If Not Us Then Who?

If the moral imperative for change is somehow insufficient, a second motivation for change is that evidence demonstrates how conservation tends to be much more effective, sustainable and resilient where Indigenous peoples and local communities play a central role and where their institutions are respected and form the basis of governance. Studies of spatial dynamics and reviews of evidence for regions, ecosystems and types of intervention have consistently and increasingly shown this relationship, with negligible evidence to contradict it, or to suggest a tradeoff between equity and conservation effectiveness (Garnett et al., 2018; Corrigan et al., 2018; Dawson et al., 2021). The assumption that social equity is somehow a counterproductive distraction from conserving biodiversity, or that allowing more local control is likely to lead to increased environmental exploitation downplays the agency, cohesion, institutional strengths and knowledge of many Indigenous peoples and local communities, and represents a form of discrimination, and epistemic injustice (Mabele et al., 2022).

Enhancing the effectiveness of management within inequitable governance systems can only achieve small, incremental gains for nature whereas the current global state and trajectory demand more transformative change (IPBES 2019). Often with exclusive conservation, the expected means of implementation are unachievable – the resources do not exist to create imagined wildernesses free from people or to satisfactorily compensate those they displace, who often have knowledge and an ethic of care (Rights and Resources Initiative, 2020). Where local communities are alienated by conservation, they may be pushed towards unsustainable extractive and illegal resource uses as alternatives that can exacerbate conflicts and vulnerability (Tauli-Corpuz et al., 2020). Instead, there is now widespread acknowledgement, across all levels of conservation practice, of the importance of integrating social objectives to deliver both just and effective conservation (see Burlando et al., 2016). Yet efforts to pursue them very often fall crucially short of recognising the values, institutions and diverse knowledge systems of Indigenous peoples and local communities, and ensuring they are embedded in conservation governance and supported (Woodhouse et al., 2022). There are also tendencies to incorporate Indigenous peoples and local communities' knowledge and institutions into an external and foreign way of conserving biodiversity rather than recognising their autonomy and historical contributions as independent actors (Asia Indigenous Peoples Pact, 2022).

Globally, one of the most significant changes in types of conservation interventions aiming to reconcile social and ecological objectives, particularly in the Global South, has involved market-oriented initiatives, alternative livelihood projects, ecotourism programs or commodity certification schemes, which support protection of areas while generating benefits to various stakeholders. Nature-based Solutions and market-based mechanisms focused on leveraging private sector resources are increasingly popular tools that fit well with global neoliberal structures, discourse and resource ownership. Yet external actors, increasingly private companies, tend to have primary control over

Indigenous leaders, youth, and activists, gather along the Klamath River (California, USA), as guests and within the territory of the Yurok Tribe, prior to the Global Climate Action Summit in San Francisco, 2018.

Photo: Joel Redman/If Not Us Then Who?

such interventions, even when labelled as a form of 'community-based conservation', such that they bring high risks of reproducing old practices with new labels and offer limited challenge to the common power dynamics (Holmes & Cavanagh, 2016). If equity and rights are not at the core of their governance, they can reproduce social injustice, push communities towards extractivism rather than sustainability, and lead to ecological failure rather than their aspired goals (Franks, 2021; Asiyanbi & Massarella, 2020).

Conservation can be done differently and, along with supportive political actions, can progress beyond these dominant practices (see Araos et al., 2020). But how can such change be achieved in practice? What institutional and governance qualities and pathways can support more equitable and effective conservation? The case studies in this volume show changes taking place in multiple contexts that expose some of the difficult realities and struggles of the numerous actors involved, from which, later in this article, we pull out important lessons to inspire change on a grander global scale. This necessitates underscoring the depth, vitality and holistic nature of Indigenous and traditional knowledge systems, as well as their historic treatment and disruption through exclusive conservation (Reid et al., 2021).

## Case studies of transformative conservation – Journeys to enhance equity and effectiveness

This collection comprises seven case studies, primarily selected to demonstrate how changes to more socially equitable governance can be implemented. The papers present a range of examples, which depart from the mainstream – some showing the beginnings of a shift away from archetypal conservation structures and political norms, others demonstrating sudden and more substantive shifts in power dynamics, and some presenting alternatives relative to the dominant models employed in those regions and contexts, through Indigenous and local knowledge systems. All cases have in common their focus on or refocus towards a central role for Indigenous peoples and local communities in the design and implementation of conservation activities.

The case studies detail varying pathways towards more equitable and effective forms of conservation, and efforts to maintain and strengthen these initiatives. Each case documents historical trajectories to explain the current circumstances. In fact, the cases also reflect an assertion or regaining of control by communities to secure their well-being, to more closely connect with and take action as defenders of the environment they depend on, in reaction to injustices, degradation and disconnection driven by external actors and values. The lessons presented are the result of collaborative working and adaptation to simultaneously pursue well-being, equity and more effective conservation, and stem from experience on the ground, many learned first-hand by the authors whether through long-term research, advocacy, activism, community leadership or positions of responsibility as state officials.

The seven cases are located in Madagascar, Indonesia, Thailand, Mexico, Kenya, Yap in the Federated States of Micronesia (FSM) and India (see Figure 1.1 and Table 1.1). They cover forest, rangeland, marine and coastal ecosystems containing habitats and species of conservation priority, and represent cases at the frontline of struggles for the future of critical biodiversity and ecosystems, and for the well-being and cultural resilience of Indigenous peoples and local communities.

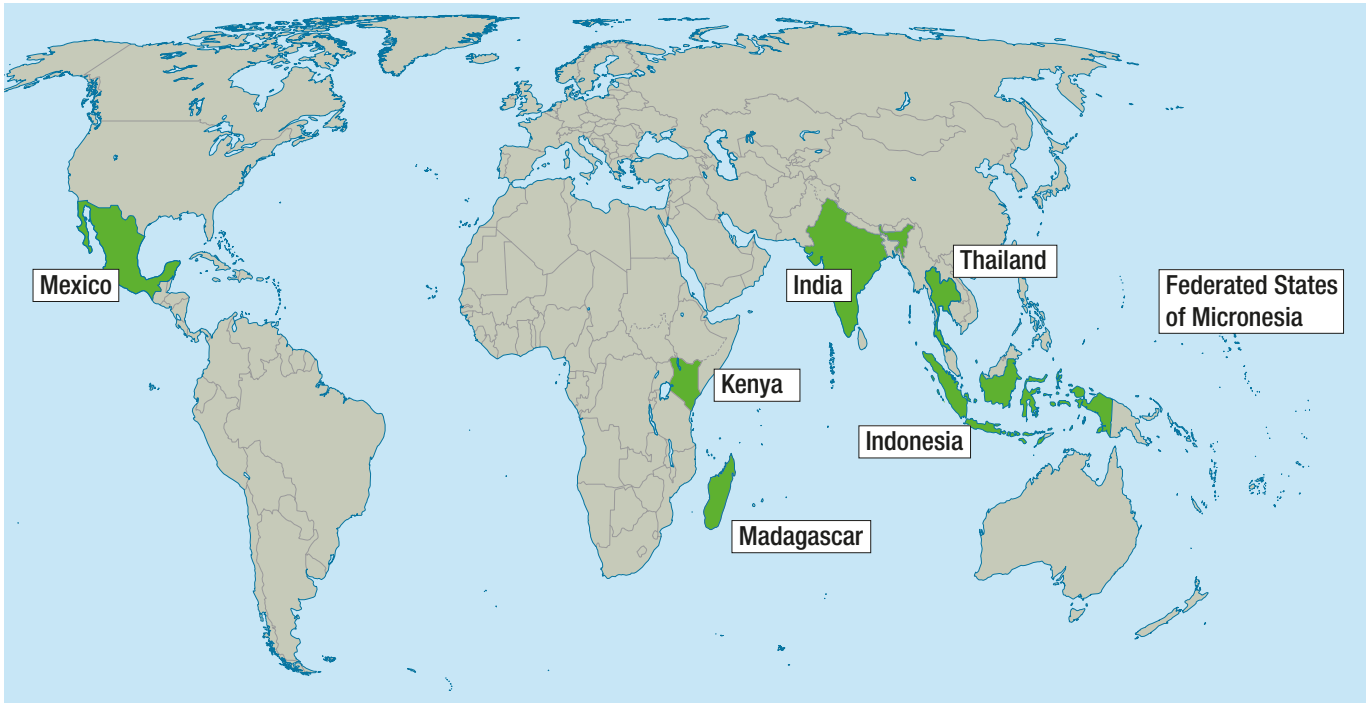


**Figure 1.1**
Map of case studies

Source: Base map, United Nations, Map No. 4170 Rev. 13, April 2012

The seven cases can be broadly grouped into three categories. The first category highlights cases where existing externally driven conservation initiatives were forced to respond to local resistance. The second category also highlights cases that were existing and externally driven, but where commercial exploitation of resources in that ecosystem had created ecological degradation to such an extent that communities mobilised to realise a better, alternative form of governance and social and ecological outcomes. The final category includes two cases of communities that had maintained comparative autonomy and, in the face of external pressures on their Indigenous governance and intertwined ecosystem health, chose to reassert Indigenous knowledge systems through revitalising and adapting customary institutions.

**Table 1.1** Overview of the seven case studies, their ecosystems and changes in governance, social and ecological outcomes

| COUNTRY, CASE STUDY SITE AND ECOSYSTEM TYPE | DESCRIPTION OF GOVERNANCE AND CHANGES OVER TIME | SOCIAL AND EQUITY ISSUES AND OUTCOMES | CONSERVATION EFFECTIVENESS ISSUES AND OUTCOMES |
|---|---|---|---|
| **Thailand**<br>Phang-nga Bay community-managed marine and coastal areas | A network of community managed coastal and marine areas was established in the late 1990s, led through various community-based organisations, to manage and restore the ecosystem and re-build resilient social-ecological connections in response to long-term industry-caused mangrove and seabed degradation. | Local organisations required good leadership, networking and NGO support which were all strengthened.<br><br>Leadership roles inclusive of women.<br><br>Innovative and sustainable local enterprises developed for livelihood benefits.<br><br>Tenure remained precarious due to state control and threats of marina development. | More than 25,000 ha of mangroves restored.<br><br>Communities won international awards for restoration of mangroves and marine biodiversity, e.g. Green Globe and Equator Prizes between 2017 and 2023. |
| **India**<br>Periyar Tiger Reserve, Kerala. State-managed protected area comprising forest, wetlands and savannah in the Western Ghats | Strict colonial and post-colonial protected area in severe conflict with communities living inside. In mid-1990s conflict resolution processes began, and establishment of eco-development committees based on adaptive partnership between park management and local communities. | Attempts to adapt objectives and approach to each community's values and preferences.<br><br>Specific efforts for social inclusion, e.g. women, those most in conflict with park, or most vulnerable to impacts. | Ranked first of 53 Tiger Reserves for management effectiveness in 2014, 2018 and 2022 national assessments.<br><br>Forest cover trends and biodiversity indicators (such as trends in tiger and elephant populations) show dramatic change to become one of the best performing Tiger Reserves in India. |
| **Ulithi Atoll, Yap, Federated States of Micronesia**<br>Indigenous marine governance | Indigenous Ulithian community asserted the importance of their own knowledge systems and sought to revitalise in the face of pressures through globalisation, international education and new fishing methods that had reduced relevance of Indigenous institutions. This had induced trends towards unsustainable management and decreases in key fish populations.<br><br>Collaboration established with western scientists to understand trends in marine species abundance. | Process of reflection, adaptation and reinforcement by the community of customary institutions. Includes huge array of traditional methods and institutions varying by area, habitat and species.<br><br>Inter-island clan decision-making institutions re-established. Process to restore knowledge transfer to youth.<br><br>Indigenous knowledge guided the collection and use of scientific data. | Indigenous management plans produced by communities for areas and resources.<br><br>Fish biomass has increased at all managed sites.<br><br>Reefs have begun to recover, with increase in corals reflecting change in trajectory of degradation. |

**Table 1.1** continued

| | | | |
|---|---|---|---|
| **Madagascar**<br>Fandriana Marolambo forest landscape restoration programme | Initiated in 2004 by WWF as a four-year programme to establish forest restoration in degraded wet forests. Time and funding greatly extended to better integrate social and political dimensions. The shift in initial focus to trust-building processes with communities was a key foundation for program. Further efforts to ensure inclusion and nest local institutions within the project as the means to promote legitimacy and enable collaborative restoration activities. | Regional informal agreements established to provide tenure security and allow key role for customary institutions.<br><br>Large increases in rice harvests attained through livelihoods component.<br><br>Appears less beneficial for those most dependent on forest resources. | Over 50 tree nurseries established. Almost a million native trees of 100 species planted on over 50,000 ha, with a survival rate as high as 75%.<br><br>Project officially handed over to community institutions from 2017. |
| **Kenya**<br>Southern Rift communal rangeland governance | Communities resisted pressure to allow tourist lodges to dictate their seasonal grazing patterns (as is the case in most conservancies across the region). They elected to prioritise pastoralist livelihoods over emerging income sources and maintain customary tenure to areas that provided safety nets in the form of grazing during times of drought. | Access to grazing areas has been invaluable for community resilience during droughts.<br><br>Some division and need for deliberation, as some see potential for maximising benefits, to be balanced with cultural resilience. | Customary resource management systems have supported species densities comparable to state-controlled protected areas, e.g. the area supports 22 species of carnivores, with densities of 13.1 adult lions per 100 $km^2$.<br><br>Positive trends in large mammal populations contrasts with many other areas across Kenya. |
| **Mexico**<br>Noh Bec Ejido, community forest governance within the Selva Maya Forest Ecosystem | Long-term forest degradation occurred through foreign commercial contractors. From 1999, with policy opportunity, the community reasserted and revitalised ejido communal land tenure system to restore control, connections to nature and the forest. | Mix of Indigenous Yucatec Maya and migrants from other states, mobilised collectively to establish shared aspirations for sustainable forest management.<br><br>Local control was consolidated by joining with other ejidos to form a network, the Selva Maya Alliance.<br><br>Mismanagement and elite capture have created challenges at times. | Forest quality has been significantly enhanced.<br><br>Diverse forest structure proved beneficial in recovery from Hurricane Dean which decimated many forests in the region in 2007.<br><br>The community earned the National Forestry Award 2015, and the Forest Stewardship Council's International Leadership award in 2022 |
| **Indonesia**<br>Kasepuhan Karang Indigenous forest governance, Lebak Regency | Mount Halimun Salak National Park extended by the state in 2003 without consultation. Community won legal tenure rights in 2016 through a Customary Forest (*Hutan Adat*) title deed, enabling revitalisation of their traditional practices and forest livelihoods. A significant pioneering case for the other Kasepuhan Indigenous peoples of the region and for other Indigenous peoples in Indonesia. | Restored access to customary forest (>30% of territory) has enhanced resilience of community, enabled revitalisation of Indigenous governance and enhanced livelihoods, including e.g. education levels.<br><br>Adapted customary institutions after the 2016 decree for enhanced inclusion of women, youth. | More complex, holistic forest zoning, restoration and management from 2016, e.g. forest restored on sloped areas.<br><br>Reinstatement of Indigenous forest management has resulted in lower incidence of fire, enhanced condition of water supplies and lower levels of illegal logging. 27,000 fruit trees planted within two years of restored forest ownership. |

Source: Synthesis by the editors, based on the case studies.

The first category of cases – the Periyar Tiger Reserve in India, the forest landscape restoration programme in Fandriana Marolambo, Madagascar and Mount Halimun Salak National Park extension in Indonesia – represent large, externally-driven interventions in biodiversity hotspots, where it became very clear that the initial designs could not work without much greater involvement of, and collaboration with, Indigenous peoples and local communities, due in part to local resistance to their imposition. The cases illustrate how existing and externally-led interventions triggering local resistance can be adapted to place communities at their centre, and how that can transform social and ecological outcomes.

The continued exclusion of local communities in the colonial and then post-colonial **Periyar Tiger Reserve in the Western Ghats of India** led to serious and debilitating conflict between state managers and local communities – discussed by Bhardwaj et al. An innovative step in the mid-1990s was taken to initiate a process of conflict resolution and subsequently to negotiate and establish partnerships and community-based organisations for collaborative conservation and development. Through deliberation, attempts were made to adapt to the social and cultural values, concerns and aspirations in each community. Over time, relationships between the Forest Service and tribal and local communities have been enhanced, and more equal partnerships and forums for co-governance have been established. The reduced conflicts, greater participation in decision making and monitoring, and generation of benefits through the local eco-development committees, mean the reserve is now lauded as one of the most successful in India for the population densities of iconic forest species, such as tigers, and was ranked first out of 53 Tiger Reserves evaluated for management effectiveness in 2014, 2018 and 2022 (Yadav et al. 2023). The case study does not exemplify a radical decolonial shift or a transformation that fully recognises Indigenous knowledge, bridges cultures, or secures land rights. However, it illustrates a clear change in trajectory with implications for how other protected areas can enact preliminary changes away from strict exclusion, embark towards forms of more equitable governance, and jointly realise improved conservation outcomes.

A large forest restoration programme was initiated by the World Wildlife Fund (WWF) in 2004 to address deforestation in the wet forests of the **Fandriana Marolambo landscape in Madagascar** – discussed by Ranjatson and Razafimahatratra. The initial four-year project was designed to establish restoration activities and promote alternative livelihoods for local communities, using external expertise and control. It quickly became apparent that social and political issues around tenure conflict and distrust of external interventions had been greatly underestimated, and would need to be addressed for a successful restoration to occur – and the project gradually transformed. While customary institutions for forest tenure, including the governance of access to land for shifting cultivation, were important for local communities, the forests were state-owned and shifting cultivation was illegal. For the project to gain legitimacy among local communities, and engage them in restoration activities, recognition of and representation by the local institutions was central to the project. To reorient around local communities' practices and decision-making processes required a major shift in approach. It was necessary to build relationships and negotiate with regional authorities so that sufficient guarantees could be obtained from the relevant authorities that shifting cultivation and related customary forest tenure could be practised without punishment. The project was extended to 13 years and more than double the initial funding was required to achieve the nesting of

institutions from local to national, which was paramount in the attainment of restoration goals. WWF eventually handed the ongoing management of restoration activities to the community-based organisations that were instrumental in its success. This case provides key lessons for the many forest landscape restoration and Nature-based Solutions projects worldwide.

In **Indonesia, Gunung Halimun Salak National Park** was extended by the state in 2003, without any consultation, to include the neighbouring forest territory of the Indigenous Kasepuhan Karang community – as discussed by Tillah et al. Suddenly, access to a large proportion of their territory, including customary forest and forest gardens was prohibited, with severe consequences for their livelihoods and cultural practices. After a long struggle, the community won legal tenure rights in 2016, which enabled the community to reflect on how they wished to utilise their regained autonomy. They chose to revitalise their traditional practices and recentre their livelihoods around the forests, and in doing so strengthened and adapted customary institutions to be more inclusive of women and youth who had begun to veer from tradition. These intra-community processes generated a cohesive sense of community identity and helped establish a lasting relationship to the forest. Management of the forest became more holistic and sustainable with areas designated for ancestors, cultural practices, watershed protection, rice, vegetable and fruit production and more. The active forest restoration and management had notable positive impacts on local livelihoods, on ecosystem services through reduced incidence of fire and enhanced condition of water supplies, and reduced illegal logging. This example forms a positive test case for other Indigenous Kasepuhan communities in Indonesia, and Indigenous communities elsewhere to learn from the struggle and strive towards secure tenure of their own forest territories.

In the second category of cases of communities in Thailand and Mexico, the prior extractive-driven forms of governance led to such degradation of ecosystems and knock-on impacts on the well-being of the Indigenous peoples and local communities that social movements had built up to challenge those systems and assert community control over their natural resources. For example, in **Phang-nga Bay, Thailand**, the combination of coastal shrimp farming, industrial fishing, plus unregulated local fishing, severely damaged mangrove and seabed habitats and abundance of numerous species plummeted. As discussed by Kongkaew et al., a network of coastal communities mobilised against the unsustainable trajectories and their social impacts, and with the benefit of a favourable policy to enable decentralisation of natural resource governance, the protests culminated in an important shift away from industrial developments to empower a network of locally managed coastal and marine areas. Industrial fisheries, commercial aquaculture and tourism developments have induced degradation that has motivated establishment of locally managed coastal and marine areas in many other regions (Jupiter et al., 2014). In Phang-nga Bay, the communities dramatically reversed the trends by restoring large areas of mangroves and community-based organisations were established to derive sustainable benefits from the enhanced resources and livelihood options and re-build resilient connections between the ecosystem and their quality of life. These communities have won numerous international awards for their achievements, although their tenure remains precarious in the face of state control and threats of marina development in the area.

In the community of **Noh Bec in Quintana Roo, Mexico**, agreements for timber harvesting with foreign contractors led to the degradation and destruction of forest cover and habitat, devastating areas of the wider Selva Maya forest ecosystem. Over time, the local community, comprising a mix of Indigenous Yucatec Maya and migrants from other states, mobilised collectively to establish shared aspirations for sustainable forest management. As the forest was under their control, they also sought to revitalise their customary *ejido* (a communal land tenure system) institutions for improved sustainability – as discussed by Rosado-May et al. It was a departure from the historical agreements with logging companies that shared revenues from exploiting the forest resources, managing the forest to maximise timber value. Forest quality was significantly enhanced, proving beneficial in the country's recovery from Hurricane Dean which decimated many forests in the region in 2007. This has earned the community international acclaim, which provides inspiration for other *ejidos* to follow the example with their community forests.

In the third category, comprising two cases from Ulithi Atoll in Yap and the rangelands of Kenya's South Rift area, the Indigenous Ulithian and primarily Maasai communities, respectively, had maintained relative autonomy over their territories for many generations. However, each still faced pressures and changes through globalisation processes and economic policies which affected aspirations, livelihoods and served to influence and disrupt Indigenous knowledge systems. Thus, local customary institutions became less authoritative and effective in promoting sustainable resource use, putting the communities in each location at a crossroads: whether to follow the wider conservation models being adopted across those ecosystems, ceding control to external actors, or to confront the external forms of knowledge and drivers of change and make a concerted effort to revitalise and reassert customary institutions and knowledge for contemporary conditions.

In both locations, communities took the more difficult pathway – at least in the short to medium term – and sought to reassert Indigenous knowledge systems. The cases describe the processes of re-establishing a cohesive vision, engaging youth and ensuring the legitimacy, authority and application of customary (but adaptive) institutions. They are important alternatives to conservation trends proliferating in those ecosystems, which for the pace of establishment of rangeland conservancies and marine protected areas might be considered as contemporary frontiers of conservation intervention.

In the **Kenyan community areas of Olkiramatian and Shompole**, communities resisted pressure to allow tourist lodges to dictate their seasonal grazing patterns (as is the case in most conservancies across the region). They elected to prioritise pastoralist livelihoods over emerging income sources and maintain customary tenure to areas that provided safety nets in the form of grazing during times of drought – as discussed by Brehony and Leader-Williams. Placing restrictions on their multi-generational knowledge of grazing patterns and systems governing access to grazing areas in response to subtle seasonal variation would have greatly compromised their primary livelihoods. These customary resource management systems have not adversely affected biodiversity on their lands, which is comparable to that found in state-controlled protected areas, with positive trends in large mammal populations that contrast with many areas across Kenya. Crucially, during recent drought episodes, the retained access to these grazing areas was invaluable for

the resilience of the community, demonstrating that livelihood diversification and conservation need not be at the expense of cultural resilience.

In **Ulithi Atoll, Yap**, social changes brought about by globalisation, including international education and the emergence of new fishing methods, had led to the reduced relevance of Indigenous institutions governing marine areas and resources, leading to unsustainable management and decreases in key fish populations. A collaboration was established with a group of Western scientists to help understand trends in marine species abundance. Rather than prioritising Western scientific approaches, this proved a pivotal moment for the Indigenous Ulithian community to assert the importance of their own knowledge systems to guide the collection and use of scientific data, and at the same time to reflect on and revitalise their own knowledge systems, including the transfer of knowledge to the youth. The study by Rulmal et al. details the huge array of traditional management regulations, methods and decision-making structures which vary by area, habitat and resource or species type. It also describes the ways they have been adapted and complemented – rather than supplanted – with scientific data to suit contemporary circumstances, thus maintaining their relevance and place in an enduring Indigenous culture. These final two cases highlight some of the challenges faced even in Indigenous territories seeming to have a high degree of self-determination, and showcase the contemporary relevance of Indigenous knowledge systems and their key role and contribution to long term conservation goals and sustainability.  xx ctions amongst, the state, NGOs, private sector and communities.

## Shared lessons from cases pursuing equitable and effective conservation

More socially and ecologically successful conservation requires radical changes in mainstream approaches, particularly towards the revitalisation and application of Indigenous peoples' and local communities' values, knowledge and practices. This cannot be realised simply through enhanced sharing of benefits or participation as stakeholders in systems externally designed based on western worldviews and technocratic approaches to protecting nature. The case studies combine to highlight a number of important lessons on how this shift can be made, as well as identifying some of the barriers to transforming towards a more equitable and effective form of conservation led by Indigenous peoples and local communities. We highlight some of the key lessons here, while acknowledging that much more needs to be done to understand these processes of transformation.

First, the recognition of Indigenous and local knowledge and institutions is explicitly mentioned in each case as an important factor in generating positive conservation and well-being outcomes. This is already happening in many places, yet this contribution to nature conservation is only slowly beginning to influence what is implemented under the banner of conservation globally. The role of Indigenous peoples and local communities can be elevated, and equity enhanced, through respecting cultures, place-based connections and supporting local institutions. This may involve building trust and partnerships, with shared governance responsibilities, as developed in the Madagascar and India cases. More transformative change involves working towards

Indigenous peoples and local communities taking leadership roles in a way that would enable them to apply Indigenous and local knowledge, exercise control over conservation decisions, and experience relative security and autonomy over territories and governance, as exemplified in Ulithi, Kenya and other cases. The examples highlight the importance of viewing conservation governance not as a managerial selection between types or seeing equity as easily achieved through a simple process of decentralising authority. In contrast, conservation governance involves a complex, collaborative journey of learning, negotiating between numerous rightsholders and stakeholders based on current and historical context, and continuously adapting, in order to maintain good governance and work towards positive social and ecological outcomes (Franks, 2021).

The case studies demonstrate that synergies can be achieved between conservation and equity, and that the health of ecosystems and the well-being of Indigenous peoples and local communities can be concurrently pursued through placing Indigenous peoples and local communities at the centre of conservation. In each case study, the multiple connections and perceived inseparability of ecosystem health and well-being provided the fundamental values and motivation for communities to mobilise for conservation. In each, details are provided to substantiate the positive effects of the more community-centred initiatives on conservation effectiveness, relative to the past or to their mainstream alternatives (Table 1.1). For example, in Phang-nga Bay, Thailand, more than 25,000 ha of degraded mangroves were restored through the network of locally-managed marine and coastal areas, with clear benefits for multiple marine species. In Kerala, India, the Periyar Tiger Reserve became the country's leading reserve for increasing populations of key species, notably tigers, after steps were taken to resolve conflicts and to work in partnership with local communities. In Quintana Roo, Mexico the Selva Maya Alliance of *ejidos* enhanced forest quality and sustainable management, and received international awards in recognition of their efforts. In the Fandriana Marolambo landscape, Madagascar, the community-based organisations leading restoration efforts comprised over 50 tree nurseries and planted almost a million native trees of 100 species on over 50,000 ha, with a survival rate as high as 75%.

These cases are not in fringe areas or small pockets of lesser biodiversity concern, but describe landscape-scale conservation in biodiversity hotspots holding internationally-important species and habitats. They strongly refute the notion that providing greater control to local communities will necessarily compromise biodiversity goals, or that equity is the enemy of effective conservation. Instead, they provide evidence that, with the right governance qualities in place, Indigenous peoples and local communities' knowledge and practices represent the fundamental way to deliver conservation, whether through restoration, sustainable use or protection and regardless of region or ecosystem.

A transformation to more routinely seeing Indigenous peoples and local communities as leaders of conservation initiatives requires changes on many levels, from addressing systemic drivers to reinforcing the quality of local governance. Of course, none of the successes described in the cases were easily achieved or guaranteed to continue, as there are numerous barriers to change and challenges that communities face in leading conservation action (Pandya, 2022). Several are highlighted, ranging from national policies that discriminate against customary practices, such as in Madagascar,

to micropolitics, elite capture and inequalities within communities, as experienced at times in the long-term case of community forest governance in Quitana Roo, Mexico, and difficulties for communities in securing funding for their mobilisations and governance, such as in the Indonesian example.

In each case the communities' struggled to maintain cultural identities and diverse knowledge systems in the face of pervasive social, economic, environmental and political pressures, including top-down conservation interventions. In fact, the cases all involve forms of resistance and mobilisation against multiple political and economic pressures, and were necessary to induce change among states and conservation organisations, and to progressively shape conservation governance. Many Indigenous and local knowledge systems and conservation-oriented institutions have endured remarkably in the face of long-term pressures of globalisation and commercialisation. Yet those systemic drivers of environmental degradation also cause cultural disconnection, and in all of the seven cases, the well-being, livelihoods and resilience of the Indigenous and local communities had suffered and were severely threatened. The changes to enhance Indigenous and local control and to legitimise customary institutions also supported a reconnection to nature, and a strengthening of local governance that brought greater social cohesion, inclusion such as of women and youth, knowledge transfer, and notable livelihood improvements as a result. The resilience of cultural values and institutions can be supported through intercultural understanding, trust and collaboration, across knowledge systems and between cultures and worldviews to ensure nested, plural forms of governance can be established and are respected (Verschuuren et al., 2021).

The continuity of customary institutions and effective custodianship of nature also involves internal negotiation of community values and priorities to maintain inclusion, cohesion, legitimacy and effective leadership (Wilder et al., 2016). The cases consistently highlight the importance to local governance quality of women and youth being engaged in revitalisation processes and decisions, and holding key roles that see them shape community organisations and livelihood strategies within and across communities. Communities are often socially and culturally diverse and processes of deliberation can be essential to develop shared values and visions for connecting and governing the environment and local livelihoods.

Among the challenges described, security of tenure and access rights, particularly customary systems, are highlighted across the studies as pivotal to support cultural resilience and promote equitable and effective conservation. This key issue has been frequently implored in decades of research and advocacy, but remains less commonly implemented (Alden Wily, 2021). Customary and communal tenure to the lands, sea or resources which communities have collective claims over, and to which their values and way of life and institutions apply, are very different from the individualised property rights supported in most political systems. Secure customary tenure within wider political structures requires good relationships with authorities and a strong network of support, alongside political or legal recognition, giving the Indigenous peoples and local communities demonstrable and defensible rights and control, as was formally, legally recognised for the Kasepuhan Karang in Indonesia but only informally negotiated for communities in the Fandriana Marolambo landscape, Madagascar. Meaningful tenure security for communal and customary systems can

demand lengthy political, legal and institutional processes, because the single act of providing recognition of tenure on paper or in word and the decentralisation of authority does not in itself guarantee good governance if not also realised through the actions of, and interactions amongst, the state, NGOs, private sector and communities.

## Conclusion: towards more equitable and effective governance

The set of case studies in this issue of *Policy Matters* contributes to an expanding body of evidence showing that governance led by Indigenous peoples and local communities generates effective conservation. The description of long-term site-level experiences provides important lessons for how transformations in conservation practice towards more local leadership can be set in motion, and supported by governments, conservation NGOs and funders – taking the idea that Indigenous peoples and local communities have a major role and contribution to conservation. The studies showcase innovative governance changes in diverse contexts, including moving away from post-colonial protected area management in India's tropical forests, reversing degradation caused by highly industrialised coastal and marine resource exploitation in Thailand, and alternatives to privatised rangeland management through revitalised customary institutions in Kenya.

It takes a number of complementary efforts and catalysts for such transformations to succeed, not only grassroots mobilisation but also leadership and cohesion, the support of key allied conservation organisations, and political windows of opportunity. A shift to recognise the agency and knowledge of Indigenous peoples and local communities also necessitates the space and ability to reflect upon historic injustices and impacts of long-term marginalisation, and the humility and commitment of different actors to be part of efforts to decolonise practices and interactions, and support more effective, trustful, intercultural relationships and collaborative journeys towards new ways of conserving (Carmenta et al., 2023). Respecting rights goes hand in hand with supporting customary tenure systems, recognising diverse Indigenous and local knowledge systems, as well as including women and youth in gendered and transgenerational strategies that support diverse interests. These progressive goals should not be abandoned or conservation standards constrained if rights are not well respected within a particular country – conservation can itself be a pioneering, assertive and empowering venture even under the political constraints most Indigenous peoples and local communities face.

This is an important period in the history of conservation and in whether, and how, the biodiversity crisis will be addressed. It is highly unlikely that the implementation of the GBF targets, including Target 3 for 30% area coverage by 2030, will be effective or equitable unless the types of transformations we describe here are used as strategies to achieve them and scaled up, quickly. The policy principles, governance standards and evidence support an imminent shift, but for that to spark a transformation also necessitates changes in minds, underlying assumptions, the way interactions with and about communities take place, processes for establishing and adapting goals, and the funding of initiatives. It is the responsibility of conservation funders and

implementing organisations to support these kinds of efforts as good practices and to make these types of progressive shifts in governance, towards equity as the means to achieve effectiveness for all existing and new interventions. All too often in the name of conservation, local institutions are disrupted or supplanted, even though they are the vehicles through which custodianship occurs. That disruptive cycle must be broken, and progress made to a new trajectory in the way conservation is conceived and implemented.

Many thousands of journeys in this direction across the world's protected and conserved areas, restoration programmes, other effective conservation measures and territories of life can make a large collective difference within this decade to safeguard critical ecosystems and the well-being of communities and societies connected to them.

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# Community-based marine and coastal resource management by small-scale fishing communities in Phang-nga Bay, Thailand: dynamics, successes, threats and challenges

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## Abstract

This article explores factors driving effective community-based marine and coastal resource management strategies among coastal communities in Phang-nga Bay in southern Thailand. By the mid-1990s, the bay had become severely degraded through shrimp farming, mining and other commercial activities. Consequently, villagers mobilised against powerful business groups for the restoration of mangrove forests and abolition of exploitative fisheries, and eventually gained the opportunity to establish community-based marine and coastal management in the region. The outstanding achievements of this network over the last 20-plus years, such as restoring mangrove forests on a large scale, have earned international awards. The article describes some of the key factors driving success, including: the establishment of well-led, networked and supported local organisations; leadership roles inclusive of women; and strategies to enhance livelihood benefits from mangrove and fishery resources through innovative and sustainable local enterprises. However, we cautiously describe how communities must work continually to challenge commercial and policy pressures, such as marina projects and industrial pollution.

**Key words**: community-based management; small-scale fishing communities; mangrove forest; coastal governance; citizen mobilisation

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## Introduction

This article examines the historical processes and the successes of community-based marine and coastal resource management by fishing communities in Phang-nga Bay, with a focus on the dynamics, outcomes and current challenges of ecosystem-based governance. Phang-nga Bay covers an area of 1.04 million ha across 41 sub-districts of four provinces, including Phuket, Phang-nga, Krabi and some parts of Trang, including 352,185 ha of sea and 685,250 ha of land. As an important fishery on the Andaman coast, its vital coastal and marine resources include mangrove forests, coral reefs, seagrass beds, and marine endangered species, such as dugongs, sea turtles, whales and whale sharks (CHARM Project, 2007).

In 1961, there were 115,600 ha of mangrove forests in Phang-nga Bay equivalent to 31.4% of the mangrove forests in Thailand. By 1996, the area of mangrove forests had decreased to 60,227 ha due to concessions for charcoal and mining, infrastructure development, aquaculture and agricultural development, urbanisation and salt fields (DMCR, 2021). The promotion of shrimp farming, particularly from 1989 to 1994, triggered a vast mangrove depletion (Plathong & Plathong, 2007).

The situation for marine life paralleled that of the mangrove forests. Before 1961, the sea was highly fertile, supported by low efficiency fishing gear which limited the catch size. However, with the promotion of the fisheries industry after the implementation of the first national economic development plan since 1961, and with the introduction of trawlers, the number of fishing boats and marine harvests in Thailand drastically increased (Wechchakarun, 1981). This resulted in overfishing. Trawling and push-net boats illegally invaded near-shore areas while small-scale fishers attempted to employ highly efficient but illegal fishing gear, such as dynamite and shallow-water bamboo stake traps, to offset their decreasing catches. These had devastating impacts on coastal resources (Bundhuwong. et al., 2000).

The results of overfishing during the first to the third development plans were clearly evident since 1977. The subsistence of Phang-nga Bay communities was supported by abundant marine resources (Sukansin, 2000) since these had yet to be depleted by the use of new technologies. Thereafter, drastic decreases in coastal resources and illegal incursions of commercial fishing boats caused acute conflicts between the villagers and charcoal and mining concessionaries who came to exploit the mangrove forests (Kongkaew, et al., 2019; 2015). Consequently, a large number of Phang-nga Bay fishing villagers organised themselves to protest against powerful business groups and to lobby for the protection, reclamation and restoration of mangrove forests, and for the penalisation and abolition of exploitative fisheries (Bundhuwong, et al., 2000). This was the beginning of the long-term and challenging process of community-based marine and coastal resources management in the region.

In addition to documentary research, the data presented are derived from the fieldwork of the first author in six target villages (or *Ban* in Thai): Ban Nai Nang (Khao Khram Subdistrict, Meuang District, Krabi Province); Ban Pa Khlok, Ban Bang La, and Ban Aow Kung (Pa Khlok Subdistrict, Thalang District, Phuket Province); and Ban Klang, Ban Bangphat (Bang Toei Subdistrict, Meuang District, Phang-nga Province) (see Figure 2.1). Each village was visited at least three times using participant observation of village activities and projects. Between June and October 2020, semi-structured interviews were conducted in each village with 12 people who held leadership roles for community groups. From March to August 2021, another 10 community group leaders from the villages were interviewed. The data analysis is based on analytic induction. It should be noted that, although a village is the smallest administrative unit in Thailand, followed by sub-district and province, this paper also uses 'community' to demonstrate how villages located in the same ecological region collaborate with one another.

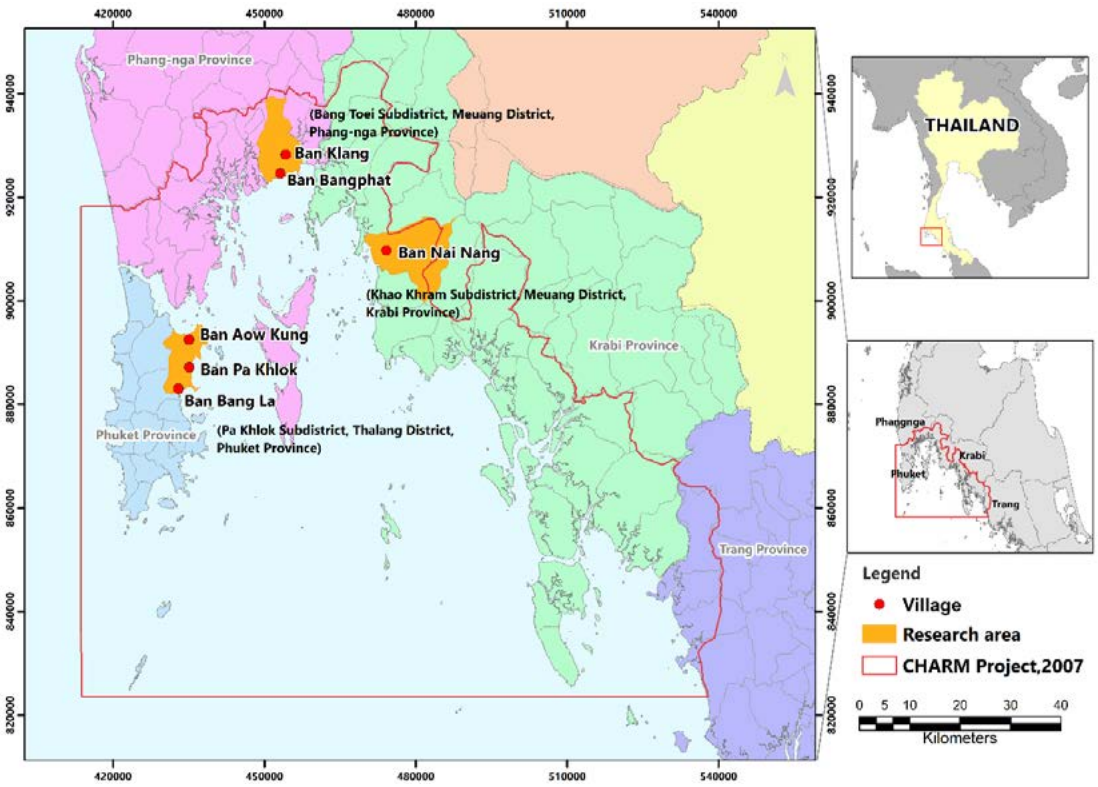



**Figure 2.1**
Map showing the location of study villages in Phang-nga Bay

## Dynamics of village mobilisations

Small-scale fishers in the Bay began facing resource crises when the Fisheries Department promoted trawling in the 1970s. As the trawlers began overharvesting, the local fishers failed to find actionable solutions. Frustrated, the fishers in some villages responded with actions that, in some cases, led to confrontations and violence. In 1983, some non-governmental organisations (NGOs) that had concerns about the resource depletion and proliferating community responses began working to bring more formal community-based mobilisations through the founding of community organisations in some villages, including small-scale fisher clubs and groups. The original network of four provincial, small-scale fisher clubs in Ranong, Phuket, Phang Nga and Krabi subsequently developed into a Federation of Andaman Fishers before becoming the Federation of Southern Small-Scale Fishers in the 2000s.

In the 1980s, all fishing villages in the bay were heavily affected by incursions into their mangrove forests for shrimp farming and charcoal concessions. Ban Klang and Ban Bang Phat also faced severe crises due to damages to their mangrove forests and drastic decreases in marine and coastal resources caused by tin mining concessions. Consequently, the villagers were displaced from their homeland and had to seek other forms of livelihoods. In the words of a villager at Ban Bang Phat regarding their crisis:

> *When the mining dredger was working, the sea turned a brown colour like tea. You could see it from a long distance, even from Koh Yao (about 20 km away). It destroyed about 320 ha of the mangrove forest, which was turned into a desert-like plain. But finally, after a few years, we were able to restore it to its former fertility.*

Although the communities had been rehabilitating the mangrove forest in their area for about 10 years before that, it was only officially recognised by the government in the late 1990s after the concessions for charcoal and tin mining in the mangroves were terminated. With the support of the Department of Forestry, and under the community-based efforts, regulations and surveillance, the villagers rehabilitated the mangrove forests. Since 2002, the Phang-nga Bay fishing communities have been successful in solving a number of their marine and coastal resource issues. In the meantime, a variety of governmental organisations and NGOs were involved in promoting capacity building among the community-based organisations to support further mobilisations. This multi-scale support led to the emergence of a network of coastal communities that persists until the present. Due to the outstanding outcomes of their coastal and marine resources management, a number of the villages have been nominated for, and in many cases won, national and international awards, as described in more detail in the next section.

## Results of community-based management of marine and coastal resources

The key results of community-based management of marine and coastal resources are described as follows.

### Ecological and social successes

A summary of the ecological and social successes achieved by the target villages as the result of their long-standing mobilisations is provided in Table 2.1.

### Increased participation of communities in resource management decision-making

Successful resource governance of Ban Nai Nang and other villages are strongly related to the rule of law, including: effective enforcement and compliance with rules and regulations; strong leadership; and equitable and inclusive participation and collaboration among governmental officials, community members and other stakeholders. The enhanced role and increased participation in decision making by the local communities and other stakeholder groups in Phang-nga Bay made it possible to sensitise and improve the understanding of government officials of the needs of local groups to prioritise issues, identify solutions and plan together. The community participation helped build a sense of shared ownership and voluntary responsibility to safeguard both the natural resources and well-being of villagers.

Communities' networks with government agencies and NGOs are important, particularly: i) the Department of Marine and Coastal Resources (DMCR) which provides support for the management and conservation of coastal resources; ii) the three provincial Offices of Natural Resources and Environment which support knowledge acquisition and training; and iii) NGOs, which support the development of further networks, including the Networks of Thailand/Andaman Coastal Communities, the Tourism Network of Andaman Communities, the Federation of Thailand Small-scale Fishers, and others.

**Table 2.1** Summary of ecological and social successes of the target villages

| AREA | ECOLOGICAL SUCCESS | SOCIAL SUCCESS* |
|---|---|---|
| **Pa Khlok Subdistrict** | | |
| Ban Pa Khlok | – Reclamation and rehabilitation of 112 ha of damaged mangrove forest caused by shrimp farming<br>– Registration of 124 ha of the reclaimed mangrove forest as community forest | – Awarded the Queen Sirikit for Forest Ranger Award in 1999 |
| Ban Bang La | – Reclamation and rehabilitation of 192 ha with land titles of damaged mangrove forest caused by shrimp farming<br>– Registration of 138 ha of the reclaimed mangrove forest as community forest<br>– Return of about 100 sea otters which had disappeared for about 20 years | – A training and study site for university students<br>– Awarded the Green Globe Prize in 2016<br>– Awarded the Equator Prize in 2017 |
| Ban Aow Kung | – Reclamation and rehabilitation of damaged mangrove forest caused by shrimp farming<br>– Registration of 32 ha of the reclaimed mangrove forest as community forest<br>– Campaigning against a marina development project in 2022 | – A training and study site for university students<br>– Awarded the Green Globe Prize in 2023 |
| **Bang Toei Subdistrict** | | |
| Ban Klang and Ban Bangphat** | – Reclamation and rehabilitation of about 162 ha of severely damaged mangrove forest caused by tin mining concession to be fertile fishing area<br>– Registration of about 506 ha of the reclaimed mangrove forest as community forest | – Awarded Queen Sirikit for Forest Ranger Award in 1999<br>– A training and study site for university students |
| Ban Nai Nang | – Reclamation and rehabilitation of about 945 ha of damaged mangrove forest caused by charcoal concession<br>– Registration of about 623 ha of the reclaimed mangrove forest as community forest<br>– Return of four aquatic species as important fishery resources after the protest for abolition of shallow-water bamboo stake traps and trawlers | – Generation of an estimated US$ 30,600 per year, from honeybee group and community tourism activities, which started in 2020<br>– A training and study site for university students<br>– Awarded the Green Globe Prize in 2019<br>– On the finalist list for the Equator Prize in 2020 |

Source: Based on Kongkaew (2016) and data from fieldwork.

* Social success is indicated by public acceptance of the village work.

** In the first decade of mangrove conservation activities, they were still in the same village. However, due to the increasing population, the government divided them into two villages.

## Community-based enterprises enhancing village livelihoods and ecological health

In 1990, the government terminated the concessions for charcoal and tin mining in the mangrove forests. During the same period, shrimp farming declined due to an epidemic among shrimp. Additionally, the government began prosecuting shrimp farms that encroached on mangrove forests. These actions allowed communities to regain control over their traditional lands and the mangrove forests, thus allowing new forms of community-based organisations to proliferate, such as mangrove forest and marine and coastal resource conservation groups, fish processing and honeybee raising organisations, women's groups, and community-based tourism organisations.

After the success of mangrove restoration, every community had continuously worked on enhancing the coastal resource management in various aspects. Ban Nai Nang is one of the villages that has set up a honeybee-raising group to enhance the sustainability of their mangrove. Setting up beehives at Ban Nai Nang reduced damages to tree trunks from traditional bee raising practices, while enhancing pollination in the mangrove forests and increasing the quantities and varieties of plant species in the area. Moreover, the villagers learned to reduce chemical usage in agriculture out of concerns that it would damage their honey yield. The reduction of agriculture-related chemical inputs has also helped improve water quality and the local ecosystems important for fisheries. One community group leader asserted:

> *Bee raising is a strategy for promoting community participation in mangrove forest management. As a means, it brings us together to work and conserve the forest. Because if the forest exists with blooming flowers, bees can survive and so can we.*

Villagers have also learned from village networks along the Andaman coast and in other regions that community-based tourism can be an alternative source of income that reduces the number of local fishers – as they turn from fishing to working in tourism-related activities. The community-based tourism activities include canoeing, mangrove sightseeing, sea grass or mangrove planting and the releasing of juvenile aquatic species (see photos below).

Community-based tourism activities: fishing gear-making and sea canoeing

Photo: Chaturong Kongkaew

Particularly during holidays, income distribution in Ban Nai Nang, Ban Klang and Ban Bangphat were impressive due to the flow of tourists in the villages. In this regard, tourism revenue includes both direct income paid by tourists for purchasing tours from community tourism groups, and income from tourists buying various products from the people in the community, such as processed seafood, honey, processed honey, natural tie-dye cloths and batik cloths. Additionally, tourism may also cause the price of fishery products to increase as tourists demand fresh seafood from community restaurants.

In addition to the income generated in the communities, tourism has provided opportunities for communities to communicate key messages to visitors about their environmental outcomes and the significance of conservation approaches through their community-based tourism activities. They were also able to work with visitors to form alliances when the communities were faced with ecological threats.

## Legislation to safeguard small-scale fishers and promote community rights

Safeguarding small-scale fishers through the promotion and enforcement of community rights has been essential to ensuring the success of community-driven initiatives. Particularly, the abolition of push nets and shallow-water bamboo stake traps (illegal and destructive fishing gears) in Phang-nga Bay and the expansion of a shoreline fishing zone for small-scale fishers from 3 to 5.4 km off-shore. This was proclaimed in the 2015 Fisheries Decree and enforced all over the country, and has had positive knock-on effects that benefited the communities.

From the 1980s to the 2000s, with the support of NGOs, the villagers gradually organised themselves into groups. They campaigned, protested and negotiated for the abolition of illegal fishing, restoration of mangrove forests, and strengthened their dealings with government agencies to gain support.

All of these contributed to the collective development of approaches for effectively promoting public participation in community forest management and other coastal resource conservation projects, including seagrass, coral reef, mangrove forest and endangered species. Additionally, networks of village groups took part in national-level grassroots campaigns and protests for community rights and environmental management, focusing on the issues of new or amended legislation promoting community rights and social equality. The long-standing citizen movements have resulted in substantial local- and national-level changes in terms of both public participation and governmental policies related to natural resource conservation and community rights.

At the individual level, the fishers have found themselves empowered by participating in these conservation and development struggles. A community group leader concluded from his experiences that:

> *In the past, when I met officials, I was always afraid of them. But after doing a lot of community work and learning about citizen rights and laws, I became aware of my own rights. Now, I no longer fear meeting even the Governor. I am prepared to discuss and argue against any unfair or incorrect issues. But our*

*learning was a huge challenge with so many losses and pains. At the beginning of our protest, my friends were shot dead while patrolling in the sea to chase illegal fishing boats. Very often, we had to sleep overnight on the roadsides in front of the Government House for weeks. It seemed very hopeless. But we kept fighting until many problems were eventually solved.*

## Enhanced roles for women

It was evident over the last few decades that women took on increasing and recognisably important roles in managing income-generating projects and organisations in the community mobilisation processes.

The community has been dealing with various natural resource problems, including the degradation of mangrove forests, sea grasses, coral reefs, and destructive fishing, for 30 years. They have engaged in various activities to call upon the government to address these issues, such as creating proposals and demands for the government sector, including at the Province and Bangkok, and driving out commercial fishing boats that come to fish near the coast. While men often take on more visible roles, such as leading protests, women have played a crucial role behind the scenes, including fundraising, accounting and negotiating with other communities. The role of women gained prominence with the introduction of community-based tourism and community enterprises involving various processed products.

Women's roles in the processed-product group and community enterprises: production of candles from beeswax and exhibition of honeybee products in other areas.

Photo: Chaturong Kongkaew and Ban Nai Nang Bee-keeping Group

Women are applying their experiences and skills in new community businesses, such as processing and selling different honey products (see photos above). As such, their roles have been recognised in communities, businesses and government agencies. As one community leader said:

*At this point, we realise that women could do far better than us in some tasks. For example, honey processing, online or on-site sales, accounting, and contacting people from both government and private sectors. All of these need meticulous attention and negotiation skills, which we men could hardly do. If we tried, the work would collapse.*

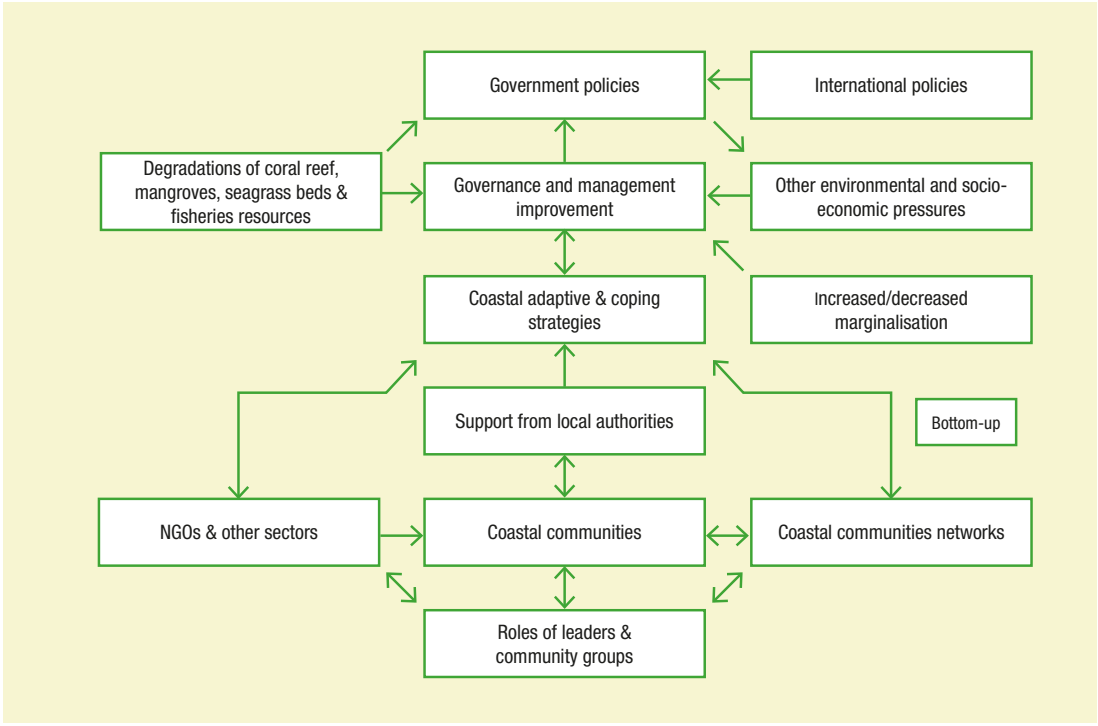
These findings make clear the necessity of integrating the analytical framework of gender in relation to fisheries and promoting women's roles in these small-scale fishing communities.

## Factors contributing to the success of community-based management of marine and coastal resources

The top-down implementation of development plans by central, regional and local government mechanisms severely affected the natural resource base and livelihoods of coastal communities. Consequently, villagers were forced to organise to solve their problems. Support from external agencies promoted different aspects of the self-development of the community group leaders and concerned villagers, enabling them to mobilise their campaigns and set up networks for negotiations at the decision-making levels. Meanwhile, international policies and pressures for public participation also encouraged the government to adjust its policies regarding the development and management of marine and coastal resources. Figure 2.2 presents the interrelated factors which are significant in the successes and alterations of approaches and policies in marine and coastal resource management in Phang-nga Bay.

**Figure 2.2**
Schematic diagramme of factors contributing to the successes

Source : Chaturong Kongkaew




Informal and formal leaders were critically important to the success of community organisation, including representatives of community organisations, local authorities, and other agencies, as well as religious leaders. Their knowledge and social skills in enhancing collaboration and negotiation were and are vital, as are their relentless persistence and devotion. Throughout the process of mobilising to generate changes in policy, it is necessary that community members are able to seek collaboration,

funding, material provisions, and both internal and external support. The leadership roles are needed to create cooperation and coordination with external agencies, other communities and community networks at multiple levels.

Over recent decades, the implementation of global-level policies promoting public participation and sustainable development were moved forward at the international level. Consequently, pressures exerted by external agencies, and by both central and local governments in Thailand, generated more opportunities for local movements. Additionally, an increasing number of businesses has been pressured to become involved in community-based marine and coastal resource management as part of their public relations or corporate social responsibilities.

As the villagers were constrained by a lack of knowledge, experience, funding and tools/equipment, support from external agencies (including government, the private sector and NGOs) was crucial to develop activities and projects. In particular, NGOs provided support in the form of funding, materials, personnel and tools for community-level mobilisation processes, empowering fisher networks.

External funding enhanced the villagers' social acceptance of local leaders, leading to higher levels of participation in village decision-making. Villages' receipt of various awards was the result of nominations and information from NGOs.

The external factors mentioned and promotion of women's roles in community organisations resulted in the formation of coastal community networks at sub-district, provincial, bay, regional and national levels. The strengthening of bottom-up networks afforded coastal community organisations different levels of negotiation power in proposing particular policy adjustments, as well as in mobilising to generate greater resources for their campaigns.

## Current environmental and natural resource governance in Thailand

Thailand did not have a legislative tradition of granting community rights related to the governance of natural resources and the environment. The first law acknowledging community rights was included in the 1997 Constitution (Kumsap, 2015). This law has been incorporated into the 2007 and 2017 Constitutions. Before the Thai nation-state was established, traditional communities used norms, morality, ethics and common rules in managing their local resources (Santasombat, 2004). However, the traditional resource management systems began to collapse when the modern Thai state began in the 1890s, and monopolised the authority to manage local natural resources, often creating mining and forestry concessions. The acute competition and conflicts between local communities and the concessionaries intensified after 1961, when the government began to implement the first national economic development plan, emphasising industrialisation based on exploiting natural resources in rural areas, often degrading them in the process (Kanjanaphan, 2000; Taweewong, 2009). Therefore, it can be said that prior to the 1997 Constitution, the quality of community participation in managing and improving policies related to natural resource and environmental governance was sub-standard.

There is no exact evidence about when community-based marine and coastal resources management re-emerged in Phang-nga Bay in the late 20th century. Presumably, it existed as a traditional practice in small villages prior to the period from 1977 to 1987, when villagers adopted a community forest approach from the northern and northeastern regions in managing their community mangrove forests (Kongkaew, 2016). External support promoting community rights in resources management began to be provided from 1996 to 1998 by the Community-based Fisheries Management Project – a collaborative effort of the Food and Agriculture Organization of the United Nations (FAO) and the national Fisheries Department (Nickerson, 1998).

The governance of marine and coastal resources in Thailand has primarily been carried out by various agencies under different legislations and enforcement policies. The concerned organisations include: the Fishery Department, with the 2015 Emergency Decree on Fishery and its 2017 amendment; the DMCR, with the 2015 Act on Promotion of Marine and Coastal Management; the Forestry Department, with the 1964 and 2016 National Reserve Forest Acts and the 2019 Community Forest Act; the Department of National Park, Wildlife and Plant Species, with the 2019 Wildlife Conservation and Protection Act for the areas under the control of national parks. Moreover, there are laws imposed and enforced by other organisations, including the proclamation of conservation and environmentally protected areas under the 1992 Enhancement and Conservation of the National Environment Quality Act.

As marine and coastal resources are seamless and dynamically connected to other ecological systems, effective resource management systems in any one area needs to take account of linked ecological systems. The case of Phang-nga Bay reinforces the suggestion of Ferrol-Schulte et al. (2013) that the management of marine and coastal resource-based areas should not be set up based on a single social or administrative unit since the resources are integrated into a large ecological system with a high degree of complexity in terms of both resources and stakeholders. Ideally therefore, marine and coastal resources would be managed holistically, with local communities.

Much legislation over the last decade seems to be progressive, with emphasis on promoting the participation of community-based management of marine and coastal resources, but without community ownership of their resources. Community representatives are now also included in provincial committees for managing fisheries, marine and coastal resources and community forests, as well as in protected area committees. The laws also allow coastal community groups to register their organisations to gain support and participate in the administration of marine and coastal resources. However, the numbers of community representatives in these committees are minimal compared to those from the government agencies. Therefore, whenever there are decisions to be voted on, community representatives are generally not able to win, and when they do, government officials have often retained or delayed the agendas or deferred further actions to the next meeting. In short, the bureaucratic process has worked against mobilising action based on community assessments of needs and issues.

In addition, most government support for registered communities is based on policies or approaches already initiated by the same government agencies. When projects proposed by the communities are not aligned with government policy – even though they respond directly to the community's situation and needs – they are not likely

to be funded. The extent to which the implementation of laws related to marine and coastal management has gradually enhanced community participation remain constrained and is not yet up to the definitions of 'co-management' between the state and the communities (Rungsee & Nooprakob, 2022), primarily because the state has not yet authorised the rights of local communities to make decisions about their natural resources (Niyomthai, 2015).

In effect, natural resources remain under the control of the state and communities are permitted to take part only to a limited extent. The community representatives who take part in national and provincial committees for marine resources management have minimal power in decision making on issues vital to their situations, since the authority and functions of marine and coastal resources management in Thailand belong to different departments, regional and provincial offices, which work to serve the commands of their centralised heads.

Conflicts between small-scale and commercial fishers were resolved in Phang-nga Bay through the expansion of the 3 km near-shore sea (1.62 nautical miles) to 3 nautical miles (5.56 km) by the Royal Ordinance on Fisheries B.E. 2558 (2015). Given the topography of the island's shorelines, this means there is no commercial fishing area available in the inner of the Bay (Figure 2.3). Moreover, the implementation of the Act requires all types of commercial fishing vessels to set up vessel monitoring systems and imposes high fines in case of non-compliance. This has effectively addressed the issue of commercial fishing boats illegally operating in coastal areas. However, the conflicts remain acute in other provinces (Rungsee & Yongvanit, 2020).

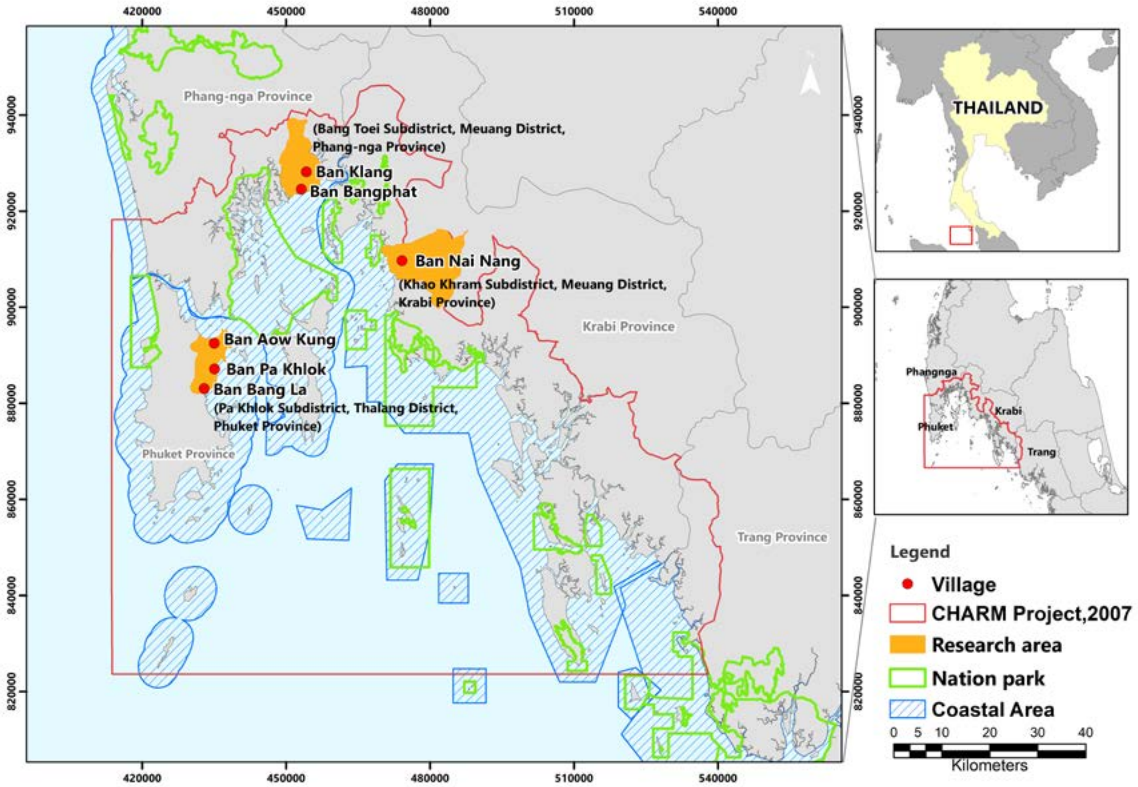



**Figure 2.3**
Map of coastal fishing areas and national park areas

Source: Chaturong Kongkaew

Conflicts between the small-scale fishers and national park officials have also declined as an amendment of the 1961 National Park Act led to a policy change, from prohibiting fishing in the national park area to permitting small-scale fishing, under the guidelines of renewable resources in Article 65 of the 2019 National Park Act.

Phuket province seems to be the most vulnerable to persisting threats arising from national development policies. In particular, the promotion of marinas for yachts and the development of cruise ship ports have led to intensive uses of coastal lands, both for port building and water course dredging. These trends and threats have been known for some time (Pandam,2013). Because most parts of the Bay in other provinces are located within national park boundaries, business has focused on the eastern part of Phuket. In 2022, the threats continued, for example in Ban Aow Kung, Pa Klog Subdistrict, where a business attempted to dredge a water course for a yacht marina with support from some government agencies, disregarding strong and persistent protests from local villagers and academics concerned about the potential damages to coral reefs located only about 800 meters from the water course area. Another example is the Aow Por Grand yacht marina (see photos below) based on a beach only 5 km from the project development area. One village leader mentioned that:

> *The construction of a large-scale yacht marina in Phang-nga Bay seriously affected the villagers who have been using the natural resources in the area. For example, they lost their fishing ground. The project development area is a fertile one of precious coral reefs and natural rock beds and is the source of abundant aquatic animals. Forty-seven coastal communities in the Bay have relied on its resources for a long time. If the sea is used for the marina, the villagers will not be able to use it any longer. The outside area will also be at risk because of boat traffic.*

Aow Por Grand Yacht Marina at Paklok sub-district in Ban Aow Kung.

Photo: Chaturong Kongkaew

When the villagers were confronted with the marina project, they were highly concerned about losing their fertile fishing grounds. At the same time, the government employed all bureaucratic mechanisms to promote the project implementation, while minimising public participation measures. However, due to the power of social media, the villagers were able to communicate their concerns and request the collaboration and support of outsiders, including academics, mass media and lawyers. Since the villagers learned from the experiences of other nearby villages that had been affected by another marina project, they ignored the project propaganda which claimed only minimal negative

effects on the sea and large-scale employment opportunities for local villagers. The small-scale fishers have been aware of the significance of sea fertility for the livelihood security of the community, particularly since the impacts of the COVID-19 pandemic required the increasing use of those natural resources. One of the villagers who turned from a taxi driver to a fisher mentioned that:

> *The pandemic forced us to realise that the sea is our last resort. When the government enforced a community lock-down measure, tourism in Phuket, Krabi, Khao Lak and Phi Phi Island collapsed. We have no land for farming. Even if we had some, it would need time and investment. But going fishing is low cost and fast. We only came back home and went fishing. At least we had food and a job to secure our livelihoods.*

Notwithstanding the above-mentioned stories of success, like other communities in Thailand, the small-scale fishing villages in Phang-nga Bay have remained caught in a complicated political trap caused by mega-project development policies for decades. Moreover, structural barriers to good ecosystem-based governance in Thailand have been a key obstacle for the sustainability of community-based coastal resource management.

For an individual small-scale fisher, acquiring fishing permits consumes a lot of resources. A fisher must register his boat with the Port Department, register for a fishing occupation and then apply for a fishing license from the Fisheries Department. Whenever he goes fishing in the permitted national park area, he must register with that national park office. With regard to community-based activities and projects, in addition to registering with different organisations as needed for a community group to legally gain their support, the group has to ask for permissions from and/or inform and coordinate with a number of concerned organisations, even when the activity/project is related to a single organisation. In the event that the group could not get the required permits, they will not be able to get the project done.

## Threats and challenges

To continue to improve ecological and social outcomes, the government must enhance its capacities for enacting integrated solutions. In the case of Phang-nga Bay, there are problems of sediment flux and wastewater flowing from the watershed into mangrove forests, as well as wastewater discharges from urban and village communities into the sea. Additionally, there are combined impacts of climate change, marine debris, deteriorating coastal water quality and decreases in fisheries resources. These are severe, and are creating threats that exceed the coping capacities of coastal communities and concerned organisations. Therefore, multiple levels of integrated and efficient policy planning and implementation are needed to cope with the complexity and urgency of locally-experienced threats. This is true not only in Phang-nga Bay, but also all over the country.

In fact, a number of large-scale development projects in coastal areas in the eastern and southern regions were promoted and implemented by the government over the last few decades. For example, the policy of Eastern Economic Corridors in Chachoengsao, Chonburi and Rayong. According to local environmental groups, they

are concerned that the project will exacerbate prevailing problems regarding both quality of life and livelihoods for local people who have suffered from environmental problems caused by the 30-year-old Eastern Seaboard project. In addition, the most fertile mangrove forests in Chachoengsao and the most abundant agricultural and aqua-cultural areas in these provinces – the main sources of food supplies for the country – will be transformed into industrial land. This land use will severely affect a great number of fishing villages (Photisarn, 2019).

Protests have also been organised along the southern seaboard by multiple groups of local people who are seriously concerned about the environmental and socio-economic impacts of such a project in Satun Province. Networks of local people actively organised against that project proposal for years while it was pending. The distrust in projects promoted by the government is similar to that of communities protesting coal-fired power plant projects in Songkhla and Krabi Provinces (Thai PBS, 2017; Srireuang, 2019).

Effects of pollution on coastal and marine resources are increasingly evident all over the coastal areas. According to Ocean Conservancy, Thailand ranks ninth in the world in terms of the quantity of plastic waste discharged into the sea (22,806 tonnes per year) (World Population Review, 2023). In 2017, it was estimated that 23 coastal provinces produced 12.31 million tonnes of solid waste. Only 50% of the waste was properly disposed, while 10–15% was discharged into the sea (DMCR, 2021). In addition to being harmful to aquatic and land animals, micro-plastics, that is plastic fragments caused by the degradation of plastic waste, have toxic impacts on ecological life cycles in the ocean, as well as potentially affecting human health.

During the last decade, small-scale fishers in the Andaman Sea, the lower Gulf of Thailand and the eastern region have faced weather extremes, including unseasonal and stronger storms and waves, along with warmer sea water. These cause changes in the types and quantities of aquatic species. Small-scale fishers can no longer use their traditional fishing wisdom due to unprecedented and unpredictable changes in both weather and sea ecologies, including coral bleaching in some areas. In addition to higher fishing costs caused by time and energy uses and losses of fishing gear, they need to equip themselves with more modern technology, such as GPS (Global Positioning System) and fish finders, as well as following up-to-the-minute weather forecast information in their fishing. Moreover, they are under greater pressures to fish in limited amounts of time due to uncertain and extreme weather (Kongkaew et al., 2017). Although they are in need of supplements to fishing revenues to compensate for losses caused by weather variations, they have less accessibility to financial support from the government compared to other agriculture groups.

## Conclusion

The motivation of mobilisations initiated by many coastal communities for the protection, conservation, rehabilitation and management of their marine and coastal resources has primarily been to cope with threats to their livelihoods, largely against development policies promoted by the government. These include charcoal and tin mining concessions, promotion of fishery exports, shrimp farming, urbanisation and other infrastructure developments. Policies based on exploiting local natural resources

resulted in damage to mangrove forests, coral reefs, seagrass beds and many fishing areas. These threats to coastal villages negatively affected communities' major sources of livelihood, so they had to organise themselves to protest effectively for recognition of their governance and ownership rights, so as to conserve and manage the resources sustainably (Sinthipong, 2015). The mobilisations of Phang-nga Bay communities to protect, restore, conserve and manage their marine and coastal resources are well-respected nationally and internationally. In fact, their lessons learned and experiences are in line with other small-scale fishers in Global South countries (Ferreira & Lacerda, 2016; Kongkaew et al., 2019).

The Phang-nga Bay communities have developed innovative alternative approaches to ensure the sustainability of their livelihoods and the community-based management of marine and coastal resources. Their adaptive resilience is significant in terms of risk distribution and the reduction of community vulnerability caused by the negative impacts of fishing and agriculture declines (Akaba & Akuamoah-Boateng, 2018). Although the tough and long-standing process of citizen mobilisation eventually resulted in new legislation and policy implementations promoting community participation in resource management, communities are not yet the owners of their marine and coastal resources.

While Thailand has begun shifting toward the co-management of natural resources, based on sharing decision-making authority and responsibilities among communities and government agencies, the complete realisation of this challenging transformation is not likely to occur in the near future. To promote and accelerate the development of community capacities for co-management of natural resources, we highlight the following issues, aligning with those of Satumanatpan et al. (2017) and Leone (2019): enhancement of leaders' and women's capacities; promotion of conflict resolution processes; full, effective and efficient public participation; streamlining of governance structures to enable support from outside organisations and social networks; as well as, crucially, respect for community rights and control to govern natural resources.

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# Redefining conservation: eco-development initiatives in Periyar Tiger Reserve, India

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## Abstract

Periyar Tiger Reserve (PTR), a prominent protected area in India, has evolved from a strict protectionist regime, exclusive of the rights of local communities, to become a celebrated model for participatory management of biodiverse areas in the country. Through a long-drawn process, the 'eco-development' initiatives established in PTR have been able to reshape the conflictual and discordant relationship between local communities and PTR managers into an effective collaboration that has generated better conservation and enhanced community well-being. Crucially, achievements were realised not simply through sharing benefits or livelihood support, but through multiple efforts to overcome conflicts, build relationships and empower communities through decentralised eco-development committees tailored to each community's values and priorities. This paper traverses the beginnings of a transformation in PTR – a journey of achievements, challenges and lessons learned in making PTR management more inclusive – and highlights how these processes are ever evolving, dynamic and continuously negotiated.

**Keywords**: community well-being, eco-development, decentralised governance, participatory management processes

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## Introduction

Recognising the critical role local communities play in conservation, the world has seen a gradual shift towards more inclusive models of protected area (PA) management. Literature on conservation management is replete with examples of how inclusive models have proved to be more effective in achieving ecological and social outcomes than exclusionary models. However, the question that still needs attention is 'how do we transition from an exclusive approach to a more participatory and inclusive management of PAs?'.

Periyar Tiger Reserve (PTR) is one of the celebrated cases of participatory management in India and, for the last decade, has been consistently rated as the best among 53 Tiger Reserves of the country as per the national management

*"As a part of an awareness generation programme for media, a nature education camp was organised for green journalists of Kerala at Periyar Tiger Reserve (PTR) in April 1992, under the leadership of the then Forest Minister of Kerala. One day prior to this important event, entire grassland of Mangaladevi area was devastated with a fire in a matter of few hours, despite months of vigilant protection. While the group discussions of the nature camp were progressing, another fire was witnessed from across the other end of the Periyar Lake. The fire could not be controlled even with help of a few participants who volunteered to fight the fire alongside the forest staff. On enquiring the reasons for the fire, the group was apprised that it was intentionally put by a few local people who were stopped from entering the forests for collecting firewood.*

*Next morning, while the nature camp was reported in all major newspapers, contrary to the apprehensions of the forest department, the fire in PTR did not make any headlines. Experiencing the challenges of conservation in PTR, the group of journalists had probably carried away a very important lesson. The fire of 1992 was also a clear message from the local communities about their resentment against the approach of PTR management. The incident made it clear that PTR will require the local people to be taken into confidence for moving forward. Consequently, the next year marked a major turning point in the history of management of PTR, when the focus shifted from policing alone to balancing the needs of the local communities with protection agenda."*

**Interview of former forest official of PTR, 10 August 2020**

effectiveness evaluation exercise. This study attempts to decode the complex processes that characterise the transition of PTR into a more participatory model. Based on secondary literature, government records, archival data of PTR and informal interviews with major stakeholders, it documents the various strategies, enabling factors, bottlenecks and loopholes in the process of transformation. Through this study, the authors, who comprise independent researchers, former and current managers of PTR, as well as members of the Periyar Tiger Conservation Foundation (PTCF), reflect on the evolution of participatory approaches in PTR. They conclude that at the heart of the process lies the development of new governance structures, which have attempted to weave different facets of community well-being with conservation.

Periyar Lake with its signature deadwood logs

Photo: Bhardwaj (2010)

### Box 3.1 Status of and ecosystem services associated with Periyar Tiger Reserve

#### Area and location

> Area: 925 km$^2$ (881 km$^2$ core and 44 km$^2$ buffer area)
> Location: Idukki district of Kerala (lat. 9°17'56'' to 9°37'10'' N & long. 76°56'12'' to 77°25'5'' E)

#### Ecological significance

> Watershed: tropical & subtropical rain forests
> 1,980 plant species: 26% endemic, 7.5% threatened
> Animal species: 63 mammals (7 endemic), 323 birds (14 endemic), 44 reptiles (18 endemic), 167 butterflies, 29 amphibians
> Megafauna: Tiger (*Panthera tigris*), Asian elephant (*Elephas maximus*), Gaur (*Bos gaurus*), sloth bear (*Melurus ursinus*), lion-ailed macaque (*Macaca silenus)*, nilgiri langur (*Trachypithecus johnii*)
> Regional connectivity with adjoining protected areas and territorial forests of Kerala and Tamil Nadu

#### Economic significance

> Subsistence and supplemental income for local communities
> Irrigation and power for Tamil Nadu
> Tourism: 0.75 million visitors contributing to local economy
> Stored carbon: 15.43 metric tons providing ecosystem services of INR 315 billion (US$ 3.8 billion) stock and INR 17.6 billion (US$ 212 million) per year in flow

US$ 1 = INR (Indian Rupee) 83 (exchange rate on 15 August 2023)

#### Cultural significance

> Religious sites: Important shrine of Sabarimala attracting large number of pilgrims
> Historical monuments: Mangala Devi Shrine
> Indigenous peoples: Mannans, Paliyans, Malayaryas, Uralis, Ulladan and Malampandarams

Sources: Sasidharan, 1998; Kutty and Nair, 2005; Kerala Forest & Wildlife Department, 2012; Parr, 2015; Verma et al., 2017; Chacko et al., 2018.

## Periyar: its biodiversity, people and challenges

PTR is one of the world-renowned biodiversity hotspots in the southern Western Ghats of Kerala, India. Known for its scenic beauty, this reserve is home to a rich assemblage of biodiversity, much of which is endemic and highly threatened (Gubbi et al., 2008). The reserve owes its name to Periyar, the largest river of Kerala, whose catchment forms the major portion of the reserve.

PTR holds importance to a wide array of people for a range of ecological, economic and socio-cultural reasons (Box 3.1). PTR forms the traditional abode of six major tribal (the equivalent term for Indigenous communities in India) communities, such

as the Mannan, Paliyans, Malayaryas, Uralis, Ulladan and Malampandarams, each having diverse historic, socio-economic and cultural associations with Periyar forests (Sunil, 2016). Prior to their resettlement in the fringe areas between 1930 to 1980, the communities largely depended on shifting cultivation, non-timber forest product collection and minor hunting inside the forests as means of subsistence (Iyer, 1939; Kerala Forest & Wildlife Department, 2001). The fringe areas of PTR also host several non-tribal communities, who having migrated from the mainstream society, depended on the forests mainly for supplementary incomes (Gurukkal, 2003).

Several protection issues and intensive people–park conflict have also been identified in the PTR, particularly during the 1970s and 1980s. Man-made forest fires were a recurrent issue, often as a manifestation of other underlying conflicts between the park's management and the communities. One of the most serious issues was the illegal hunting of endangered and threatened species (Gubbi & Linkie, 2012; Kerala Forest Research Institute, 1979), as well as:

- illegal cultivation of *ganja* (*Cannabis sativa*) in the core area, which led to clearing of the forests, debarking of cinnamon (*Cinnamomum verum*, or locally called *vayana*) trees and smuggling of the produce;
- illegal collection and trade of non-timber forest products;
- degradation of habitats due to excessive removal of firewood to meet growing demands of hotels in Kumily town as well as Sabarimala[1] pilgrimage;
- unregulated tourism and pilgrimage accentuating the issues of illegal hunting and pollution in the area;
- unsustainable fishing in Periyar Lake;
- excessive grazing;
- illicit felling of sandalwood and other valuable tree species in some pockets; and
- exotic plantations of eucalyptus in the grasslands areas and encroachment of fringe areas.[2]

The forests and landscape of PTR have changed hands between several regimes and forms of governance in the last thousand years or more (Table 3.1). With the centralisation of control over forests under colonial and independent India, the local Indigenous communities had seen a gradual decline of their ownership rights and socio-cultural linkages with the forests. Restrictions in access to resource use, subsequent relocation to fringe areas and stringent protection strategies had alienated the local tribal communities (Amruth, 2008; Jose, 2015; Kerala Forest & Wildlife Department, 2001a; School of Social Sciences, 2002), which ultimately led to conflict between them and the reserve managers. It was soon realised that with an already overwhelmed protection system,[3] conservation could no longer be sustained without reversing the trend of exclusion to support greater participation and rights for communities (Kerala Forest & Wildlife Department, 1986). While the trigger for this transition in PTR came from the Mangladevi fires, at the national level participatory management programmes in protected areas were already making their way in the conservation arena.

1 Sabarimala is a religious shrine of Lord Ayyappa, situated in the core area of the Reserve and visited by about 20 million people annually.

2 Damayanti & Masuda, 2008; Kerala Forest Research Institute, 1979; Kerala Forest & Wildlife Department, 2001a & 2012; Kutty & Nair, 2005.

3 The shortage of staff, vast extent of remote areas and inadequate resources made it difficult to continue with fencing and policing of PTR (Kerala Forest Research Institute, 1979; Kerala Forest & Wildlife Department, 1986)

**Table 3.1** Changes in the governance structure of Periyar Tiger Reserve

| AUTONOMOUS REGIME | AUTHORITARIAN/CENTRALISED REGIME | PARTICIPATORY/DECENTRALISED REGIME |
|---|---|---|
| PRE-1895 | 1895-1980'S | 1990 ONWARD |
| Indigenous communities under local kings | Colonial administration under Maharaja of Travancore, bureaucratic state of independent India | Inclusive and decentralised system of co-management; integration of community well-being and conservation |
| | Construction of Mullaperiyar Dam on Periyar River in 1895; Gradual exclusion of local communities; restrictions on access, resource use, resettlement to forest fringes[a] | Dialogue with community, trust building, conflict management and institution building initiated in 1991 |
| | Centralisation of controls evident in journey of Periyar; declaration as Lake Reserve (1899) to Game Reserve (1934), Wildlife Sanctuary (1950), Tiger Reserve (1978) and National Park (1982) | PTR was shortlisted as one of the sites for the IEP which initiated in 1996[b]<br>Funds from Tribal Sub-Plan, World Food Programme, voluntary contributions and the Government of India utilised[c] |

[a] Amruth, 2008; Jose, 2015; Kerala Forest & Wildlife Department, 2001a; School of Social Sciences, 2002
[b] Chaudhuri, 2013; Damayanti & Masuda, 2008; Parr, 2015; Pillai and Suchinta, 2006
[c] Kerala Forest & Wildlife Department, 1995

**Table 3.2** Mapping improvement in the conservation status of Periyar Tiger Reserve post-implementation of India Eco-development Project

| CHANGE IN KEY STRESSORS | ECOLOGICAL TRENDS |
|---|---|
| > Trends from 1997 to 2012 highlight dramatic reduction in removal of forest products[a] | > Stable forest cover post 1995; indicates positive impact of participatory initiatives and community involvement in conservation |
| > Firewood consumption for own use declined by ~68.9%; extraction for sale reduced by 75.8% | > Normalised Difference Vegetation Index maps for January 1993 (Landsat 5) and January 2020 (Landsat 8) indicate increase in vegetation density; attributed to management effectiveness and eco-development activities (see Figure 3.1) |
| > Black dammar, fodder grass, poles, bamboo, honey collection and cinnamon bark reduced by 95%, 85%, 96%, 99%, 96% and 100%, respectively[b] | > Vegetation studies in six pockets of high disturbance areas of PTR for 1999 and 2007 support above trends[g] |
| > Incidences of forest offences decreased from 100 in 1995 to merely five in 2010[c], Significant reduction in plastic and other waste by pilgrims[d] | > Stable population for last 15 years for tiger and elephant; tiger population: between 23–26 for 2006–2018, elephant population: 800 in 1985[h] between 984–1136 for 2005–2017[i] |
| > Comprehensive fire management plan with identification of risk zones and provision of early controlled burning of grassland area for managing fire incidences[e, f] | > Positive trends for population density, population structure of tiger and elephant population[j]; Tiger density increased from 3.88 to 5.41 per 100 $km^2$ [k]; Male-female ratio for elephant improved from 1:5.7 in 1972 to 1:3.93 in 2005 and 1:1.28 in 2017[l] |
| **Ecological baselines** | |
| > Ecological baselines of different taxa show improvement.[m] As focus on research improved, more in-depth investigations were undertaken in the reserve to identify new species. | |
| > Intensive management of some prime habitats like vayals*; 140 vayals in 2016 (281.5 ha) in PTR compared to 56 vayals (161.3 ha) in 2011[n] | |

*Vayal: local name for marshy grasslands

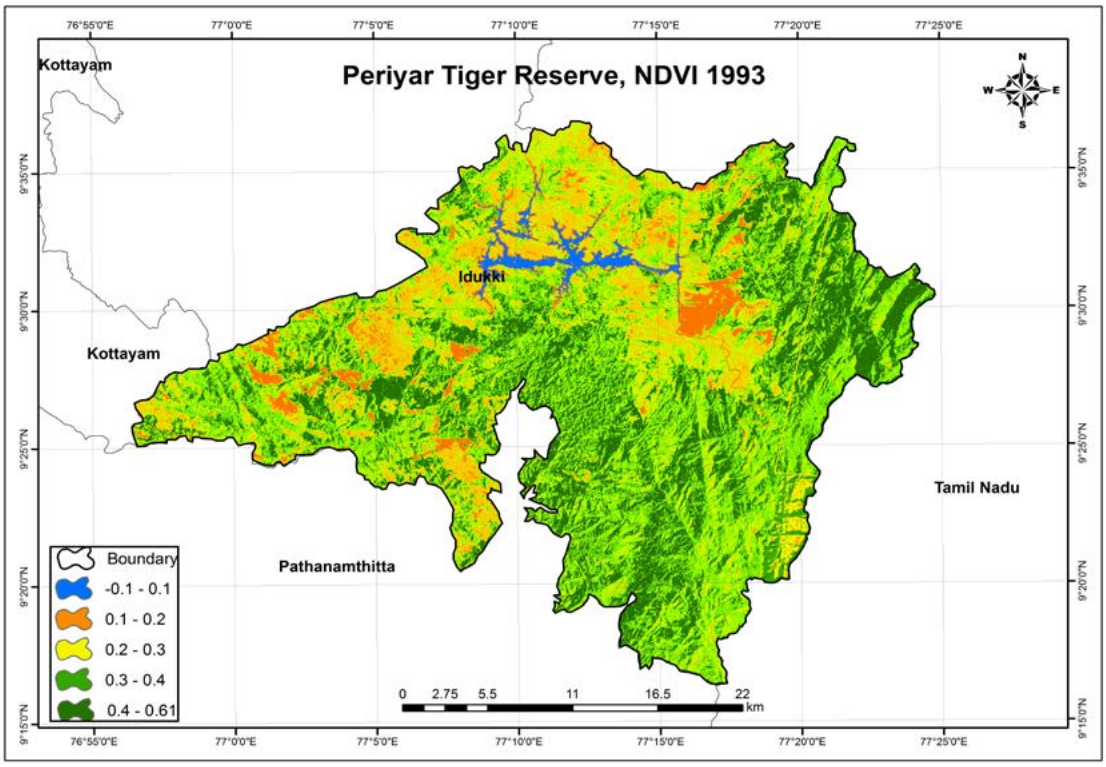
a) School of Social Sciences, 2002; Gurukkal, 2003; Bhardwaj, 2007; Kerala Forest & Wildlife Department, 2012; Zimsky et al., 2012; b) PTCF, 2004; Kerala Forest & Wildlife Department, 2012; c) Bhardwaj, 2007; Kerala Forest & Wildlife Department, 2012; d) PTCF, 2003; e) Kerala Forest & Wildlife Department, 2012; f) PTCF, 2020; g) Kerala Forest & Wildlife Department, 1999; Bhardwaj, 2007; h) Nair et al., 1985; i)Balasubramanian & Esa, 2017; j) PTCF, 2020; Zimsky et al., 2012; k) Balasubramanian & Veeramani, 2009; Zimsky et al., 2012; l) Nair et al., 1985; Balasubramanian & Easa, 2017; m) Kerala Forest & Wildlife Department, 1986; 2001; & 2012: n) Kerala Forest Research Institute, 2018.

With the advent of participatory conservation management in PTR, there have been significant positive outcomes both for the Reserve and the local communities. The conservation status of PTR has improved in three broad areas: reduction in key stressors (Table 3.2); improved ecological trends (Table 3.2 and Figure 3.1); and strengthening of baseline information (Kerala Forest & Wildlife Department, 1986; 2001; & 2012).

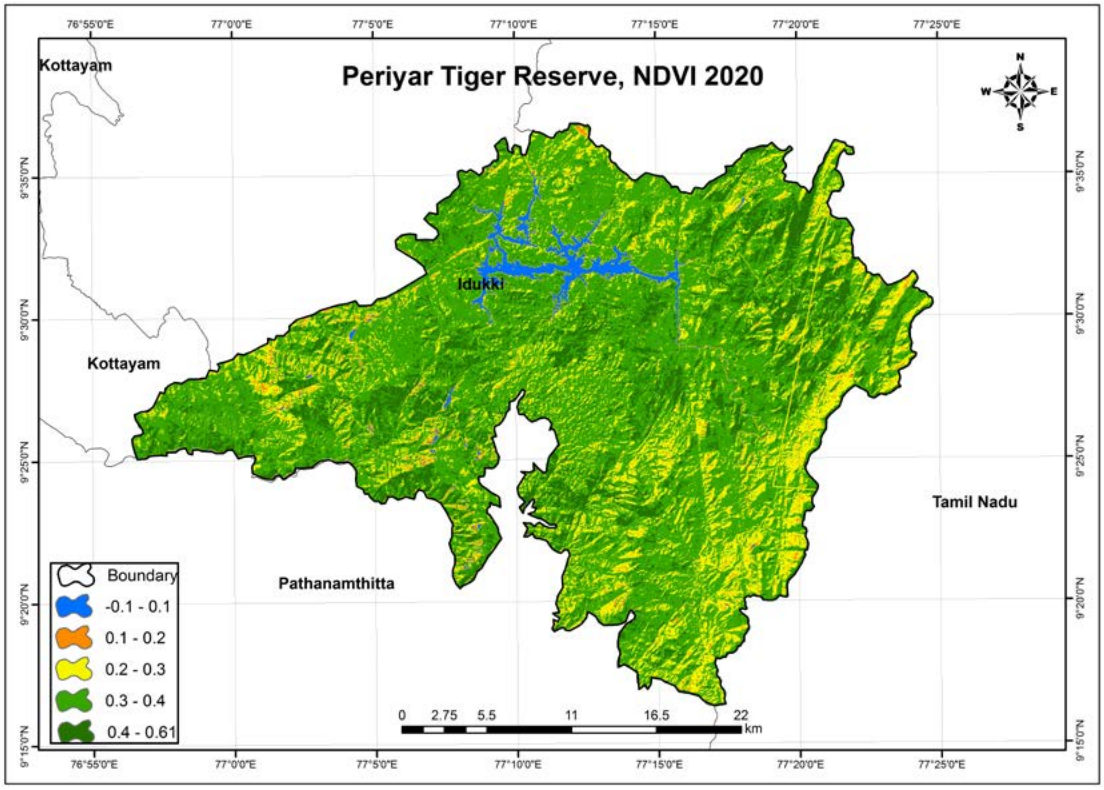
**Figure 3.1**
Normalised difference in vegetation index in Periyar Tiger Reserve, a) 1993 and b) 2020

Source: Vinod (2020)

a)




b)



During 2014, 2018 and 2022 assessments, Periyar was graded as first in the overall ranking of all 53 Tiger Reserves of India (Mathur et al., 2019; Yadav et al., 2023). Major factors for this score were sound support of local communities and low levels of human-wildlife conflict (Zimsky et al., 2012).

## Eco-development initiatives: programme and outcomes

Many of the problems faced in PTR can be ascribed to clashes between the objectives of strict nature protection and local livelihood needs. Since 1991, an alternate paradigm of co-management was envisioned in PTR. Popularly known in India as eco-development, this initiative, which began with building trust among the communities and sowing seeds for new decentralised institutions, was carried forward under the India Eco-development Project (IEP) from 1996 to 2004. IEP, funded by the World Bank, Global Environment Facility and the Government of India, was implemented in seven sites of the country (World Bank, 1996). It was aimed at reducing negative interactions between local communities and PAs, while enhancing their support for conservation (World Bank, 1996). Strengthening livelihoods and securing incomes were the fundamental priority of the IEP in PTR, and some success is evident. Crucially, the economic empowerment of communities has been pursued, and to varying extents realised, in tandem with social, political and ecological empowerment, through inclusive governance and collaborative initiatives.

A three-tier structure was cemented for ensuring the adequate participation of different sections of local communities and other stakeholders. This structure comprised of: i) Eco-development Committees (EDCs) at the village level; ii) Eco-development Implementation Committee at the PA level; and iii) State Eco-development Coordination Committee at the state level (Bhardwaj, 2007; Parr, 2015). The structure was further strengthened by micro-institutions of women self-help groups (SHGs) under different EDCs and nature clubs for youth in different educational institutions. Simultaneously, a body of non-governmental individuals, known as Microplanning Implementation Support Team, as well as new positions of an Eco-development Officer along with a competent team, was instituted for microplanning through continuous engagement.

As grassroots level institutions, EDCs[4] were not based on the policy of 'one size fits all'. Building on the wide array of needs of different settlements, major issues of PTR management and the existing skills of the communities, at least four distinct types of EDCs were constituted: i) neighbourhood EDC; ii) professional group EDC; iv) user group EDC; and iv) pilgrimage EDC (Kerala Forest & Wildlife Department, 2001b; Kutty & Nair, 2005; World Bank, 2004). While neighbourhood EDCs focused on specific village level issues, professional group EDCs were involved in a variety of community ecotourism programmes. Similarly, user group EDCs were allowed a regulated resource use from the PA, including grazing and firewood collection, while pilgrimage EDCs, popularly known as Swami Ayyappan Poongavanam Punarudharana EDCs, were established for effective management of pilgrimage in PTR. Fostering

4 There were a total of 58 Neighborhood EDCs (10 Tribal, 44 Non-tribal and 4 Mixed), 4 User Group EDCs (All Non-tribal), 4 Professional Group EDCs (1 Tribal and 3 Non-tribal) and 6 Pilgrimage EDCs (All Non-tribal).

principles of inclusiveness, transparency and local authority, each EDC has a general body comprising of all members[5] and an executive committee headed by an elected chairperson from within the members. The structure of the EDC also ensured adequate representation of women. Under the IEP, EDCs looked after a myriad of responsibilities, including community development and reciprocal commitments of the community towards better management of PTR (Government of Kerala, 1996; Kerala Forest & Wildlife Department, 1996; 2016).

The IEP focused on 5,585 families of local communities within the 2-km radius[6] of the PTR and undertook a range of activities, which involved strengthening agriculture, promoting entrepreneurship (including but not limited to ecotourism), education, skills development, community infrastructure, alternate energy and basic amenities (Bhardwaj, 2007; World Bank, 2004). Of the PTCF's total income, 30% is expended for community welfare activities. In addition, all local EDCs have their own community development fund, which is a revolving fund being generated, maintained and utilised by the community. Beginning with a meagre amount, this fund stands at an average of about INR 300,000 (approximately US$ 3,614) per EDC (PTCF, 2020).

Members of EDCs are provided social security in the form of accidental insurances (Kerala Forest & Wildlife Department, 2001; PTCF, 2019). Moreover, community members have also inculcated the habit of personal savings (School of Social Sciences, 2002). In the recent pandemic, when all tourism activities came to a halt, professional group EDC members continued to get their monthly incomes through the income generated from the PTCF capital as it had accumulated over time (Bhardwaj et al., 2020).

While the ecological and economic parameters have shown considerable improvement, it is important to assess how the participatory programmes have fared for those who had been marginalised by earlier strict protection policies. With regard to social and cultural empowerment, the increased sense of self-pride and belonging that people perceive have been aided by trust-building processes, extrication of earlier offences, co-management of less stringent access restrictions and enhanced livelihood security. Members of EDCs often highlight the new social status and social space acquired through their association with fellow EDCs as being a significant improvement (Chaudhuri, 2017; Gurukkal, 2003). Local communities also feel that the programme has positively affected inter- and intra-community ties with better cohesiveness, unity and reciprocity in all aspects of community well-being (Bhardwaj, 2019). It has also made dramatic improvements in relations of trust and cooperation between the communities and the Forest Department (Bhardwaj, 2007; Chaudhuri, 2013). The devolution of decision-making powers to local communities through their EDCs has also enabled many to inculcate leadership skills, build networks and gain political mobility into local self-governments, thereby exerting visible influence of eco-politics in local region[7] (Chaudhuri, 2017; School of Social Sciences, 2002). Recently, there has been increasing effort by the communities to revive their old traditions and cultures. For example, the Mannan community has taken the first step towards the restoration

5 Membership was by household for neighborhood EDC and by individuals for other EDCs.

6 Although, the impact zone of 2-km radius comprised of 105 settlements, only 58 settlements were prioritised for the project implementation (Gurukkal, 2003).

7 Discussions with community members have revealed that as many as 17 people from EDCs, including six women, have been elected to the local self governments.

of their age-old social order of hierarchical status and ranking among the heads of the clans (Gurukkal, 2003). In fact, the youth have also come forward to revitalise the custom of periodic visits to their traditional king and annual worships to forest deities (Bhardwaj, 2019).

While the IEP in PTR has changed the conditions of the communities and facilitated their overall empowerment along with better conservation outcomes, it is important to understand that the programme, like any other initiative, is not without loopholes, grey areas and a need for iterative, collaborative learning. The overall gain from the participatory programmes in PTR does not show uniform and universal trends for all communities and groups alike. Interactions with PTR managers and community representatives indicate several cases where the programme faced shortcomings and challenges, such as weak engagement with local communities, elite bias, passive participation, inadequate transparency and remoteness of some areas. In this context, it becomes important to critically engage with the processes and practices employed in the participatory initiatives of PTR to better understand where the approach worked and where it did not. For example, the concept of EDCs and their roles and responsibilities have also evolved collaboratively over time such as in response to challenges during the pre-IEP period (Box 3.2).

## Conflict resolution and trust building as essential foundations for change

It is imperative to understand that if processes of change developed during the IEP needed supportive institutions to sustain them post-completion, it was equally essential to show that the seeds of change were sown much before the IEP began. In 1991, processes of dialogue with community, trust building, conflict management and institution building were initiated. It is in light of the encouraging outcomes of these reflective interactions on the past, and a clear willingness to collaboratively work through conflicts, that PTR was shortlisted as one of the sites for the IEP. The pre-IEP period was instrumental in defining the trajectory that PTR would take in the years to come.

The process of integrating the well-being of the communities with the conservation agenda hence began with concessions to local communities in terms of improved regulated access to resources and provision of basic needs, infrastructure and services, before new governance structures were established. This was made possible by innovatively using then available schemes of the Tribal Sub-Plan, World Food Programme, voluntary contributions[8] and some funds from the Government of India (Kerala Forest & Wildlife Department, 1995). These small steps helped build relationships, ease perceived injustices and paved the way to adopting a more inclusive approach from within the Forest Department.

8 Interactions with erstwhile PTR Deputy Director reveal that the major voluntary contributions came from a group of doctors who organised free medical camps in different settlements and managers of the surrounding tea estates for the supply of spice seedlings (cardamom, pepper and coffee) and upgradation of roads leading to the village settlements.

### Box 3.2 Institution-building process in Sathram

Sathram was one of the initial settlements where institution building started in 1993. At that time, there were neither specific funds nor required structures for participatory governance. In the initial stages of trust building, the management had to take support from the nearby Tea Estate to cater to Sathram villagers' demands to upgrade road access to their area, and to provide seedlings for augmenting the cash crops of individual families. As this was the first such initiative, concerned forest staff took interest in these activities. Similarly, these initiatives were fully reciprocated by the communities and the discussions for formation of an EDC for this settlement started. However, the concept of EDC was still in its infancy. In the meantime, small funds were released by the department for construction of wells in the area. In absence of any community level institution, the fund had to be directly given to individual beneficiaries depending on their demand for the work. This led to an extremely disproportionate distribution of the funds among the community members and resulted in intensive conflicts between them. Conflicts intensified to an extent that the management had to withdraw all on-going initiatives from this settlement.

Another attempt for reviving the programme was made but this again failed. It was understood that the major reasons for conflict were the absence, after years of imposed top-down rule-making, of any customary or local institutional mechanism which would ensure representation, transparency and equitable distribution of benefits and opportunities to all community members. In the light of these learnings, a third attempt was made to engage with the community. This time new frameworks designed for the programme were utilised. A village based microplan was prepared using participatory tools of planning. Also, the idea of a community level institution in form of an EDC was established in 1995 after discussions with community members. The EDC now was legally backed by government orders and provided a platform to bring the individual members in a village together as a community for eco-development programme.

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One of the most celebrated cases in building trust and constructive relationships has been with the ex-vayana bark collectors EDC (Box 3.3). The story of this EDC brings to fore the extent of interactions involved in gradually fostering a long-term relationship and the multiple levels at which trust has to be built. However, in the PTR, not all cases demonstrated similar results. In the case of Mannakudy and Paliyakudy EDCs, a defining component of trust-building activity was allowing the use of timber by the community for their own use. However, the process suffered a setback when an incidence of commercial timber extraction came to light wherein some members marketed the timber themselves. As a consequence, an offence case was registered against some of the EDC members. Despite the setback, the Forest Department and EDC did not sever ties and gradually, in the process of rebuilding trust, a new leadership emerged and helped to overcome issues of elite capture that had tainted the previous leadership.

### Box 3.3 Transforming ex-vayana bark collectors to second string of protection

Debarking of cinnamon trees was one of the very serious protection problems in the PTR. A group of people from fringe villages of Periyar would continuously enter the reserve illegally, debark the cinnamon trees and sell the produce discretely to agents in Tamil Nadu. During their stay inside the forest, they also used to resort to illegal hunting of wild animals. This activity on one hand caused huge damage to the forest and wildlife, and on the other created a situation of constant fear for the life of both collectors and forest staff, owing to the illegality of the activity. Realising the gravity of the problem, the Forest Department initiated a negotiation with this group during the early days of implementation of the eco-development programme. The negotiation process required more than one meeting and was met with resistance because of complete lack of trust between the collectors and the forest staff. Ultimately, a roadmap was adopted to carry the dialogue forward. The group became confident after receiving the support of a local leader who ensured no harm would be done to them.

After prolonged discussions, a group of 23 cinnamon bark collectors came forward and were organised into the first professional group EDC, known as the 'ex-vayana bark collectors' EDC. As a means of alternate livelihood to them, a protection-oriented adventurous trekking and camping programme (Periyar Tiger Trail) was formed and implemented. The programme was designed meticulously, blending objectives of protection, livelihood security and visitor experience. Capitalising on the wealth of knowledge about forest and wildlife by the members of the group due their previous line of work, this programme involved the EDC members guiding the tourists through the forests of Periyar, especially covering the strategic locations previously used by offenders for illegal activities. The reciprocal commitment was that the department will withdraw the old cases against the members and the EDC members would actively contribute in the protection of the area. Over the years, this programme grew in its length and breadth to become a signature of PTR.

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## Finding innovative and adaptive alternatives

Through the process of centralisation of control over Periyar forests, the local communities, particularly the tribal communities, faced a number of restrictions in access to resources, leading to disruption of their livelihoods. As a result, communities could neither make use of their traditional livelihood skills nor effectively utilise the alternatives provided by the government in the form of land for cultivation. In the absence of a stable source of income, many community members became trapped in a vicious cycle of debt and exploitation by moneylenders and intermediaries (Gurukkal, 2003; Kerala Forest & Wildlife Department, 1995; School of Social Sciences, 2002). Severing of cultural ties with the forest and growing market demands led the communities to enhance resource extraction, even though it was illegal. In this process, while the forests suffered degradation, the conflict between the local communities and the park management grew (Kerala Forest & Wildlife Department, 1995).

### Box 3.4 On-farm activities as tools for empowering tribal communities

From 1940s onward, the tribal communities inside Periyar were relocated on the fringes of the PTR for sedentary farming. However, owing to the pressures for more intensive commodity production, the community fell into the trap of moneylenders who gained most, while both the tribal communities and the forests suffered. In two tribal settlements, Mannakudy and Paliyakudy, communities were convinced through deliberations with the Forest Department that their produce, including black pepper, will no longer be sold to the moneylenders and the department would facilitate direct marketing of their harvest. Middlemen obviously objected to this decision as the communities had already taken loans from them before the agriculture season.

A deal was struck that the entire loan amount will be returned by the communities to moneylenders with 24% interest after the harvest. Additionally, money required for the harvesting was advanced as loans to EDCs by the department, which they were required to return to the CDF (Community Development Fund) of their EDCs after the sale of the produce. This plan was implemented meticulously in 1997. Due to bumper crop, the tribal communities could fetch good incomes during that season, which allowed them to not only return the loan taken from moneylenders but also pay back the credit given by the department to their respective CDFs as well as save some of the profits as personal savings. This was a revelation for the tribal communities, who could now understand the value of their lands and the extent of exploitation they had undergone for so many years.

Over time, new strategies of intensification and diversification of agriculture, led by EDCs, were also used to address the challenges of sharp fluctuation in pepper yields and market rates. EDCs entered into an agreement with each family and took over the responsibility of raising new plantations in the available fallow lands for a period of five years. After five years, EDC handed over the land to the families.

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To reverse the trend, the participatory initiatives led by the EDCs brought dramatic changes in local communities' livelihoods (Bhardwaj, 2007; Damayanti & Masuda, 2008). Based on the site-specific and need-oriented microplans of each EDC, a combination of existing livelihoods and diversification opportunities were envisioned. Prominent areas of intervention included agriculture (Boxes 3.4 and 3.5), ecotourism and enterprise development.

Given the availability of some land and attuned farming skills, strengthening of agriculture became an obvious on-farm activity. Through initial financial and technical help from the Forest Department, the communities could not only overcome the debt trap of moneylenders but regained control over their lands and crops (Chaudhuri, 2013; Jose, 2015; Pillai, 2010). Gradually, the process of intensification and diversification[9] of agriculture and efficient marketing helped to increase and

9 The predominant variety of crops included pepper, coffee, cardamom, rubber, cocoa and plaintain (Gubbi, 2006).

### Box 3.5 Vanchivayal Eco-development Committee and its organic farming

Tribal families of Vanchivayal traditionally did not use chemical manure and other pesticides in agriculture. Building on the traditional practices and knowledge of the community, organic farming was experimented in their settlement from 1998. Vanchivayal took a lead and became a model of production and marketing of organic pepper. The village obtained a certification for its organic pepper and started exporting its produce outside the country, thereby maximising gains from agriculture to the community. Today, Vanchivayal has been recognised as a model in Kerala for organic agriculture. The socio-economic development of the Vanchivayal community has led to suo moto controls on heavy biotic pressures in PTR by the community. Moreover, after the formation of the EDC, zero incidences of forest offences were reported. Consequently, Vanchivayal has emerged as an example of how a mainstream activity of agriculture can be tuned to suit the economic and ecological requirements of the area.

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stabilise incomes (Gubbi et al., 2008). With better returns and increasing profit from agriculture and alternative livelihood options, part of the gain was turned over to EDCs as a Community Development Fund, which was further used for village and livelihood development (Box 3.4). In fact, a more innovative approach was adopted by Vanchivayal EDC through the initiation of organic farming (Box 3.5).

As the eco-development programme took roots, enterprise development, supported by adequate capacity building, opened up new areas of livelihoods for women SHGs and individual beneficiaries in the form of vermicomposting, small businesses, handicraft making, spice and honey packaging, organic products, paper bag units, souvenir shops, soap making, poultry farming, and others. (Bhardwaj, 2007; World Bank, 2004). These new sectors further diversified in the next generation, with the youth taking up newer avenues of government jobs, teaching, hospitality management, tourist guides, automobile drivers, computer and technical personnel (Bhardwaj, 2019). Interestingly, pilgrimage within the core areas of the reserve has also transformed from being a recurrent challenge for protection to an avenue for economic growth of local communities. Understanding that the process of change is slow, some resource use within the sustainable limits has also been permitted. For instance, the Mannan tribe was given verbal permits to fish in some pockets of the Periyar Lake (Chaudhuri, 2013). The user group EDCs were especially established for ensuring legal access to resources by members. In these initiatives, while the Forest Department supervised the extraction of resources, communities through their EDCs have developed self-regulatory mechanisms for resource use.[10]

10 Interactions with staff of PTCF and members of Mannakudy/Paliyakudy EDCs reveal that a group of 72 fishers has been provided permission to catch and sell fishes from Periyar Lake. As per their microplan, the self-regulating mechanisms of this group includes fishing in selected pockets of the lake and closure of fishing for the breeding season spread over two months. Moreover, with rising demand for lake fish in the market, this group also rations the sale through a system of token to customers through a specific community stall.

Vasanthsena all-women, voluntary patrolling group of Periyar Tiger Reserve.

Photo: Sunil C.G. (2006)

## Recognising the role of women

One of the primary targets of the eco-development initiatives in PTR have been the women, owing to their marginalisation and a high number of women-headed families (Bhardwaj, 2007; Pillai & Suchintha, 2006). The design of EDCs itself ensured adequate representation of women in its governance structure. Studies reveal that about 46% of the total budget of the village development component of IEP was utilised for the benefit of women (Gurukkal, 2003). Micro-institutions for activities, such as provision stores, community horticulture and pig farming, also acted as a source of credit for women's enterprise development (Bhardwaj, 2007; Pillai & Suchintha, 2006). This has empowered many women and created new leadership roles. One of the prime examples is the all-women Vasanthsena EDC which is a unique women's group involved in voluntary patrolling of fringe areas of the PTR (see photo above). Supported with a small token of motivation from the department in the form of coats, shoes and caps to mark their distinct identity as 'Vasanthsena' (or spring army), these women have invested about 5,600 days of voluntary patrolling over 18 years, and successfully reduced the sandalwood smuggling in PTR. The Vasanthsena has been accredited with several awards, including the P.V. Thampi Memorial Endowment Award in 2003 and the prestigious Amrita Devi Environmental Award by the Ministry of Environment and Forest, Government of India, in 2006.

## Progressive financing and financial autonomy

The PTCF was also authorised to raise its own resources through a myriad of sources at state, regional, national and international levels. The eco-development surcharge – payment of ecosystem services, or PES – at the PA level, formed the immediate and most important source of income. At the state, regional and national levels, PTCF could raise resources through research and training programmes. It could also explore resources from other national and international donors (Chaudhuri, 2013). During the coronavirus pandemic, the fund generated by PTCF proved to be a boon

to ensure minimum financial support to EDC members when tourism came to a complete halt. Another mechanism of the Park Welfare Fund, originally created as a small emergency fund for EDC members, now serves a much larger purpose of pooling the revenue from all ecotourism programmes for ensuring equal remuneration to all member of these EDCs.[11] As there was large variation in terms of incomes from ecotourism programmes run by different EDCs, pooling all revenue in one place became necessary to address the concerns of benefits equity among members. Through these and other individual, group and PTCF level efforts, PTR has gradually built financial autonomy for itself and its members.

## Ensuring continuity

One of the key challenges in transitioning from exclusionary to participatory models of conservation has been the inability to sustain the transition after the project period. While the creation of EDCs was central to the participatory management during the IEP, the post project sustenance of the eco-development regime was made possible through a new institution, the Periyar Tiger Conservation Foundation, a state-funded yet operationally independent organisation, aimed at facilitating ecological, economic, social and cultural development in PTR and its adjoining landscape (Government of Kerala, 2004).

Legal legitimacy was provided for the newly-founded institutions to support continuity of the participatory management approaches. The 1972 National Wildlife (Protection) Act was amended in 2006 to provide for the constitution of similar foundations in all tiger reserves in the country (National Tiger Conservation Authority, 2006). EDCs, supported by women SHGs and youth nature clubs, also have two-way linkages with the PA management and forms a strong grassroot body in influencing the overall working of the different sections. Over the years, EDCs have been able to develop several independent horizontal linkages with other government agencies and non-governmental organisations (NGOs). The experience of PTR in terms of the evolution of its governance structures and institutions for inclusive, nested governance stands as an eminent example for the entire country (Figure 3.2) .

## Creating a conservation constituency and expanding boundaries

Apart from contributing towards meaningful changes in the national policy for the establishment of foundations in all the tiger reserves, as well as national ecotourism guidelines, PTR has been designated as a learning centre for the participatory management of PAs. This centre has been able to conduct outreach programmes[12] in the PTR for different facets of participatory management between 2014 and 2018 for a range of stakeholders. Interestingly, the government of Kerala has used the expertise of PTCF for training executive officers of the local self-governments. At the regional level, the experience of PTR has also informed the management practices of other PAs in

11 Order No. PF (3) 75/2010 Dated 19.11.2010 of Field Director, Periyar Tiger Reserve, Forest and Wildlife Department, Government of Kerala (unpublished internal document).

12 This includes 18,442 participants, 286 trainings, 38 workshops, six study tours, six skill development programmes, 16 specialised trainings and 129 special awareness programmes for national and international participants.

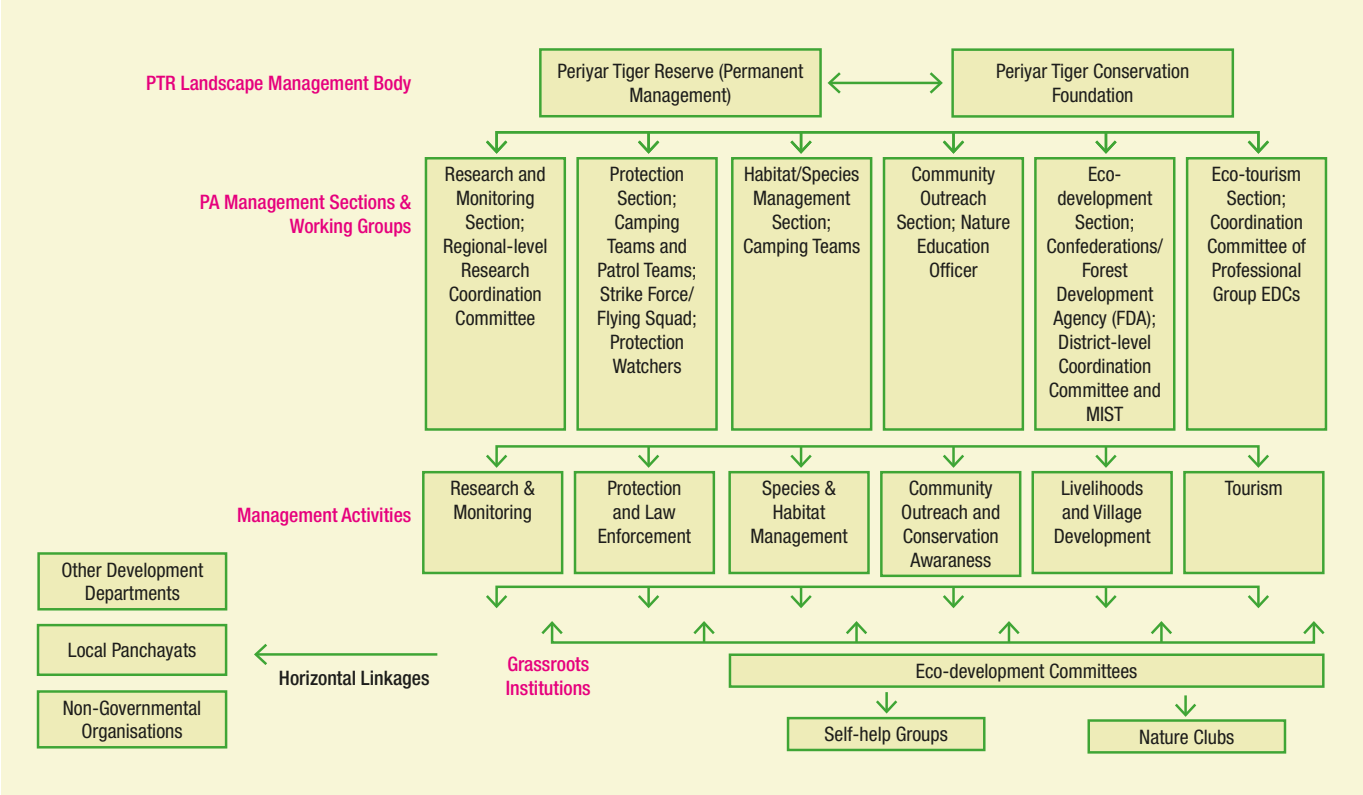


**Figure 3.2**
Governance structure of Periyar Tiger Reserve

Source: Authors, based on Parr (2015)

Kerala. Parambikulam Tiger Reserve has come up as one of such reserves of the region with immense potential for integration of conservation and community well-being.

The management of PTR has been adaptive and evolving. While the initial eco-development programme had been limited to the local communities in the immediate surroundings of the reserve, over time, PTR has expanded its constituency. Moving from the 2-km impact zone of the IEP to the larger landscape and now to the mindscape, PTR has successfully reached out to a spectrum of new stakeholders through its extension programmes like Know Your Periyar, Periyar Talks and Periyar Orudinam (A Day in Periyar). The participants include school children, differently-abled citizens, Anganwadi workers, resort owners, naturalists, veterinary doctors, cleaning workers, housewives, women SHGs, old-age homes, retail shops, auto and taxi drivers, and others.

## Conclusion

The Periyar Tiger Reserve has emerged as a model for transition towards more participatory management of biodiversity-rich areas in India. While the overall positive outcomes for Indigenous peoples, local communities and nature have been a testament to this achievement, this article has attempted to highlight the more important underlying processes and manifold practices and interactions that have contributed to the adaptive transformation in the PTR. This is particularly important in times when there is a global push for recognising the role in and contribution of local communities to better conservation outcomes, and for expanding conservation coverage. Approaches labelled as participatory or community-based are diverse and many versions across the world have been shown to do little more than promote commodity-based livelihoods

while further marginalising Indigenous/tribal and local communities (Apostolopoulou et al., 2021). The case of Periyar adds to the increasing evidence suggesting that conservation interventions must address multiple dimensions of equity, or features of the well-being of Indigenous people and local communities, to generate transformative processes and outcomes – such as empowerment, reconciliation of longstanding conflicts, inclusive governance, and the social and cultural values and traditional practices of local communities (Armitage et al., 2020).

The PTR case study reveals that EDCs have been the agents of positive change, providing for a more decentralised, inclusive and collaborative governance of the reserve, which has ultimately led to better conservation outcomes and community well-being. New institutions that support the vision for decentralised governance have been key, although it has functioned as part of multiple efforts to meaningfully enhance the agency and role of communities and to build and sustain the collaborations. The article also emphasises how these processes of change in PTR have been gradually built, adaptive to needs of the community, as well as dynamic with changing socio-political circumstances in the region. However, engaging with the processes rather than outcomes also highlights the variation within the broad picture of success. Strategies that worked well with some communities did not work in others, cautioning against any pre-designed models for participatory governance in conservation areas, and urging collaborative design processes to adapt to the subjective values, needs, knowledge, practices and context of any community and particular groups within it. At the same time, this transformation is far from complete. The journey towards more equitable and effective conservation will continue, and even as local institutions are able to function more independently of state and NGO support, efforts will continue to further recognise rights, identities and contributions to conservation.

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# Collaborative conservation on Ulithi Atoll, Federated States of Micronesia: Indigenous* leadership supported by Western* science promotes effective, adaptive stewardship

John Rulmal Jr.,[a] Nicole L. Crane[b] and Supin Wongbusarakum[c]

## Abstract

Ulithi Atoll is a remote set of outer islands of Yap State, Federated States of Micronesia. Ulithian people have a unique set of traditional management practices which, while fundamentally intact, are experiencing change. Recent declines in fish and reef health have prompted Ulithians to seek support, in particular to better understand drivers of change to their reefs. Some traditional management has been weakened, and modernisation and imports are bringing in new ways of life that are resulting in changes in fishing as well as the youth becoming less engaged in traditional practices. This case study highlights a collaboration (the 'we' herein) where Indigenous communities lead efforts to revitalise traditional management, while incorporating new approaches based on data and observations from a Western science team working with them. There is also a significant effort to engage youth and develop their leadership. This approach results in locally designed solutions that support cultural, social and biological integrity, and has resulted in remarkable resource and community resilience – highlighting the need to put conservation and management under local leadership.

**Key words**: Marine conservation; social-ecological systems; conservation equity; traditional knowledge systems; customary resource governance

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## Introduction

This case study focuses on a unique collaboration between Western scientists and Pacific Island practitioners in the Yap Outer Islands (Federated States of Micronesia). It highlights a tightly linked social-ecological system, and the importance of local leadership in identifying and solving environmental challenges. The critical contribution of Indigenous peoples to conservation through their legacy of stewardship has gained recognition in the past two decades, but there is much work to

* '**Indigenous**', when used to describe outer islanders, refers to first peoples on these islands, who still maintain control over governance. '**Western science**' refers to knowledge brought by a primarily US- and European-based science team.

do to fully engage them and centre their knowledge in management planning efforts, including driving the planning itself (Apgar et al., 2011; Garnett et al., 2018). What may be overlooked in the efforts to involve Indigenous people in Western-driven conservation planning, however, is what that concept means to them. Conservation as described in literature is primarily a Western construct. For many Indigenous people, including Yap Outer Island people, their environment is not something separate that warrants protection. Rather, it is interwoven into their social relationships, stories and their sense of well-being (Cinner et al., 2009; Crane et al., 2018a; Lessa, 1966).

## A changing social-ecological dynamic

Ecological and human social systems are undergoing rapid change globally, which has unique consequences for subsistence resource users who depend on wild resources for a variety of needs, including food, shelter, tools and customary trade. As the linkages that bind the social and ecological systems come under stress and weaken, both start to suffer (Mistry & Birardi, 2016; Sterling et al., 2017a).

Nowhere is the situation more apparent than places where coral reefs are found. Most are located in tropical and subtropical regions, where more than 75% of all people living within 100 km of coral reefs are in the 'poorest' developing countries (note that labels of poverty are not necessarily shared by the people labelled as such), and most live outside of urban areas with a high dependency on reef resources (Cinner et al., 2016). In many Pacific islands, people have a long history of successful traditional stewardship (von der Porten et al., 2019; One People One Reef, 2020). Patterns in coral reef characteristics can be linked to human use, even when the populations are small and the use is predominantly subsistence (Crane et al., 2017a; Houk et al., 2011). Despite signatures of use, there are examples of coral reefs that are healthier than 'expected', given widespread global decline, and those reefs are associated with specific social and governance conditions, including the presence of taboos/tenure (traditional management), community engagement and dependence on the resources derived from the reefs (Cinner et al., 2016; Kittinger et al., 2012). Yet there is a persistence of Western-driven conservation agendas in these regions, some leading to social-ecological disruption and unintended consequences highlighting conservation inequities.

In light of rapid change, there is a need to strengthen the effective Indigenous systems of environmental governance, while also recognising more contemporary external influences in the form of, for example, new fishing methods, motorboats instead of sailing vessels, freezers to store fish, and others. In some instances, a solution is for the collective conservation community to move forward in new collaborative ways, weaving knowledge of these contemporary factors and their impacts into traditional systems, and adapting with modified management frameworks. However, a key to the success of this capacity building is to be intentional about 'who' is leading and 'who' has agency in planning and implementation. In fact, much of the dialogue about Indigenous knowledge centres around incorporating such knowledge into Western management practices. One example is the global focus on marine protected areas, incorporating selected pieces of local knowledge and practice through community engagement (Andradi-Brown et al., 2023). The converse to this approach, and far more likely to be successful in traditional settings, is to find ways to weave Western

science and management into traditional frameworks. An example would be to identify successful local governance and management practices, and provide local practitioners with information about fishing pressure, including non-traditional methods, so they may incorporate that into their existing management (Crane et al., 2017b; Crane & Rulmal, 2014).

The Federated States of Micronesia (FSM) are recognised as part of the globally important Polynesia–Micronesia biodiversity hotspot (Federated States of Micronesia, 2019; Yap BSAP, 2018). Coral reefs are a defining feature of Micronesia, with Yap state containing over 259,000 km² of ocean and only about 129 km² of land mass (FSM Legislature, 2021). According to the International Union for Conservation of Nature (IUCN), 427 species of coral are listed in the FSM's waters, 100 of which are considered to be vulnerable and three endangered (Allen, 2007; FSM Legislature, 2021; Yap BSAP Committee, 2018). Yap state has been determined to have 32 areas of special biodiversity significance, with some of those specific to Ulithi Atoll (Allen, 2007). Data from surveys have shown that a high percentage of FSMs reefs – close to 50% – are considered 'effectively conserved', but that fishing pressure is a primary determinant of reef condition (Crane et al., 2018b). Securing and enhancing traditional knowledge has also been identified as a priority for the region (Yap BSAP Committee, 2018). Combining the ecological and traditional knowledge treasures of this region speaks to the importance of conserving both. Elucidating the strong social-ecological connections and underscoring the importance of those connections to effective stewardship in the region is an important story to elevate globally.

## Ulithi Atoll: people and environment

Due to its remoteness, Ulithi Atoll has been an isolated social-ecological system in the West Pacific Ocean, and remains very traditional today, although not without its own colonial legacy and resultant pressures (Lessa, 1966; Lessa & Myers, 1962; Mitchell, 1983). Ulithi consists of a ring of about 40 small, low-lying islands, scattered along a coral reef that encloses a large lagoon (Figure 4.1). Although the total combined area of Ulithi's islands is only 4.5 km², the central lagoon they surround has an area of about 548 km² making Ulithi one of the largest atolls in the world. Inside the lagoon, water depth averages about 30 m but outside the reef drops steeply to depths of hundreds of metres.

There are four inhabited islands: Falalop (population 700); Mogmog (population 80); Asor (population 35); and Federai (population 120). The Indigenous Ulithians are linguistically and culturally related to the Caroline Islands (Crane et al., 2018a). They have a strong sense of cultural identity and differ significantly from the communities on the main island of Yap. Marine resources from the reefs provide the most reliable food security and reefs are the main source for protein, thus managing these resources is critical (Rulmal et al., 2019; One People One Reef, 2020). Contemporary reef surveys of the area indicate that the Ulithi Atoll reef resources were sufficiently abundant and well managed to support subsistence use for likely over 2,000 years, although recent declines in fish and coral health have raised concerns within the communities (Crane et al., 2017a).

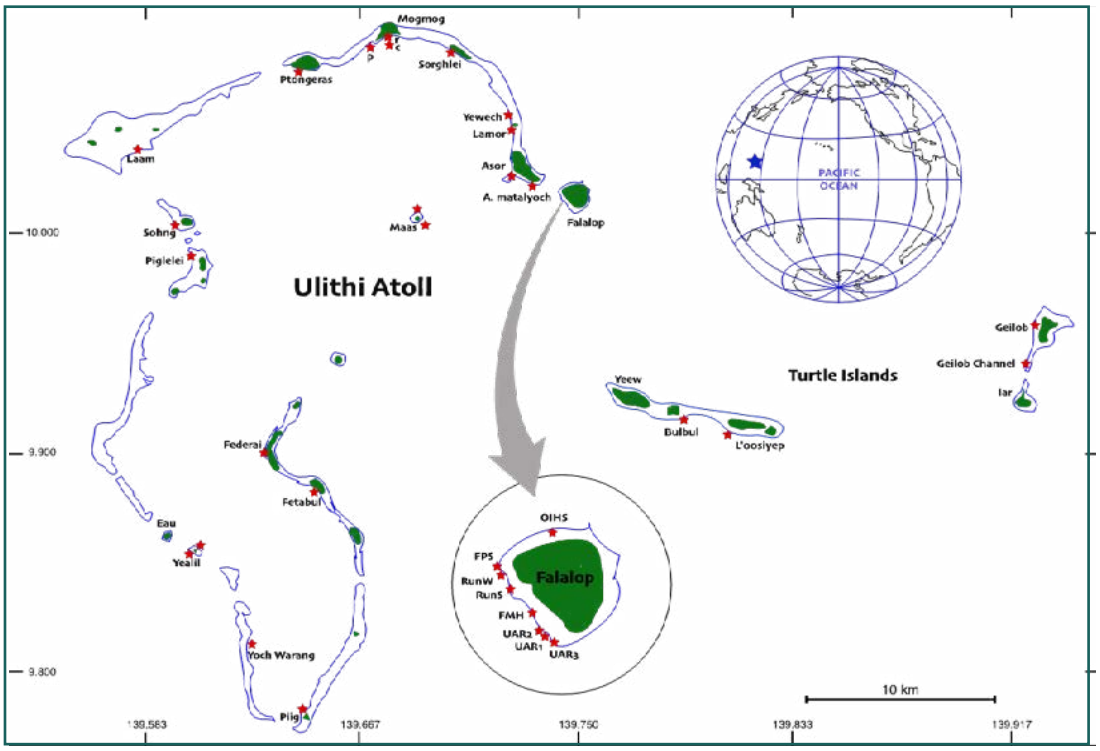


**Figure 4.1**
One People One Reef OPOR study site locations (coloured stars) at Ulithi Atoll and neighbouring Turtle Islands

Source: Crane et al. (2017a)

Today, each of the four inhabited islands has a medical dispensary, a nurse practitioner and a school from kindergarten to 8th grade, and the island of Falalop has a high school (one of two in the Yap Outer Islands). One doctor is available for the four islands. Transportation is limited, and so is access to imports, due to the limited frequency of a government supply ship which arrives every two to six months and, to a lesser extent, via more reliable twice-weekly flights between Falalop and Yap (also serving as medevac when needed). Small skiffs are used to travel between the four inhabited islands, and provide a means of resource distribution within the atoll (Crane et al., 2017a; One People One Reef, 2020).

There are several threats to the social-ecological well-being of the people of Ulithi. The changing ways of life, with more influence of money and Western goods and systems (including religious beliefs), are causing social change that is in turn changing resource use and management. Reef declines and dwindling fish populations raise concerns over food security, as well as reef health and integrity. Invasive species, such as rats and monitor lizards, contribute to gardens being abandoned on certain islands, such as Loosiap, and lower productivity on others. Sea-level rise associated with global climate change has also had a major impact on the very low-lying atoll islands. Rising sea water has displaced and contaminated much of the thin freshwater lens normally found just beneath the surface of the sandy soil, making it more difficult to obtain fresh drinking water and to grow staple crops such as taro. Sea-level rise has also resulted in alarming rates of shoreline erosion of these already spatially limited islands, in some cases leading to downed trees that subsequently abrade and damage reefs as they move with the waves. Because people rely on rainwater as the main freshwater source, droughts that happen periodically in March and April can be a serious threat, highlighting the need for secure water catchment. Finally, isolation caused by pandemics and storm severity can leave communities vulnerable, as they have become more dependent on imported fuel for their boats, and eating rice as an alternative to local food (Yap BSAP Committee, 2018).

# A case for equitable collaboration: One People One Reef

The challenges and opportunities that communities of Ulithi face underline the importance of combining knowledge systems to solve complex problems, while ensuring local leadership in planning. Here, we present a unique collaboration between the people of the Yap Outer Islands (with a regional focus on Ulithi Atoll, FSM) and Western scientists in coral reef stewardship: One People One Reef (OPOR), or *Hofagie Laamle* (which translates roughly as 'unite this Atoll'). This collaboration intertwines traditional management with Western science to identify issues and set a foundation for locally driven solutions for sustainable coral reefs (Crane et al., 2017a; 2018b).

OPOR scientists were invited to Ulithi by the community in 2010 to help address the decline in marine resources. This came about as a result of a successful collaboration between Western scientists and the communities of Ulithi around sea turtle management. The OPOR programme grew from a mutual desire to learn from each other: scientists and community members came together to solve resource decline issues and learn more about the drivers of those declines. The Western science team learned about traditional management, changes in management, fishing techniques, and ecological trends. This greatly informed the interpretation of the ecological data and helped frame the appropriate ecological questions to ask to best assist communities. The communities sought knowledge related to reef ecology, management, impacts of fishing and effects of climate change. They were interested in their traditional management, how to enhance it, and how it could be assessed for efficacy. The science team was also able to support community outreach, science communications and learning among the youth. The people of Ulithi developed all subsequent management plans, which were founded on their traditional systems.

On Ulithi Atoll, reefs and fish assemblages cluster into general categories that are broadly related to proximity to villages, as well as physical factors (lagoonal vs. oceanic). Reefs that are exposed to open ocean and farthest from villages have the highest diversity and biomass of fish, and the most diverse coral cover (Crane et al., 2017a). By approaching the analysis of the reefs from a food security and resource perspective, as well as a social and cultural change perspective, OPOR has been able to identify some key drivers of change to the reefs. Aside from environmental drivers, such as those associated with climate change, these include a breakdown and weakening of traditional management, the introduction of non-traditional fishing methods including spearfishing, and the impacts of changed transportation (motorised vessels).

In the Outer Islands, high dependency on reefs, along with adherence to traditional management, leads to healthier reef systems capable of providing more resources for the people (Crane et al., 2018b). Conversely, a breakdown of traditional management, along with changes in fishing technology, even while keeping within a non-commercial and subsistence only context, has lead to more degraded reefs (Cinner et al., 2016). A mutual recognition of these social drivers and their impacts on the marine ecosystem allowed our team to begin addressing them together.

While the people of the Outer Islands of Yap still rely primarily on traditional management, there are new forms of fishing, such as spear guns, that have created challenges that do not necessarily fit within traditional frameworks. It is also important to note that while a Western lens looks at environmental problems through management solutions, for the people of the Outer Islands, stewardship is deeply culturally embedded and is not often called out in specific regulatory frameworks. Many of the taboos and practices are social in nature, with a strong stewardship application. For example, reserving some fish, such as large groupers in some islands, for chiefs only is a social construct that protects large breeding fish that are easily overexploited (One People One Reef, 2020).

Thus, Western-directed management will not only have limited success in these islands, but could undermine successful traditional systems and interfere with the existing fabric of the social-ecological system. The goal therefore is to combine knowledge systems into a novel biocultural approach that is culturally contextualised, takes into consideration the impact of introduced methods of resource extraction and is locally conceived and led.


Fisheries biologist Dr Peter Nelson from One People One Reef discussing catch with the community and local science team

Photo: Courtesy of Scott Davis Images

## Traditional practices and natural resource governance

In Yap, the traditional customary management systems are recognised in the State Constitution, integral to the State government management systems. The Constitution allows for autonomous governance by each community to plan and execute management decisions per their own needs, and traditional leaders and estate owners have legal authority to manage specific areas and resources.[1] The elders of the village

1 Yap Constitution, Article XIII, Section 5: "The State recognizes traditional rights and ownership of natural resources and areas within the marine space of the State, within and beyond 12 miles from island baselines. No action may be taken to impair these traditional rights and ownership, except the State Government may provide for the conservation and protection of natural resources within the marine space of the State within 12 miles from island baselines". Yap State constitutional provisions on Traditional Leaders and Traditions are found in Yap Constitution, Art. III. Statutory provisions on Traditional Leaders and Traditions are found in Title 5 of the Yap State Code.

and the various traditional estates have their distinct roles and responsibilities dictated by the estates they represent. Private property is assigned for someone by birth to use and steward over their lifetime (FSM Legislature, 2011; Lessa, 1966). Each village has an estate or designated person(s) who calls the village together for meetings; men, women, or jointly. During these meetings, community issues/grievances/ideas/work are presented and discussed. Decision is usually by consensus and the chiefs make final decisions and proclaim them. The proclamations are treated as edicts or mandates of the community's will and respected as such under the traditional structure of the society. Violators stand to face the community and whatever punishment or restitution the community imposes as part of mitigating a violation of the community's will or disrespect towards the community (Crane et al., 2018a; Lessa, 1966).


Coral reefs of the Outer Yap islands

Photo: Courtesy of Scott Davis Images

Marine resource management in these Outer Islands is culturally embedded and includes practices that are sometimes incompatible with what Western managers might consider 'effective' (such as allowing unlimited fishing at times). Most management can be classified as 'partial protection', although this may also include temporary total fishing bans (Andradi-Brown et al., 2023). Each inhabited island within Ulithi Atoll has a management jurisdiction per their customary system and action plans for their islands. The governance ensures that the reefs, on which the livelihood of the Outer Islanders depend, are owned and taken care of by their responsible owners and those resources provide for the people. Mogmog, considered the highest island in terms of ranking chiefs, has a paramount chief who oversees all the islands. They are responsible for looking after the people of Ulithi and the Outer Islands and are central to inter-island decision-making.

Reef governance and 'management' is complex in Ulithi. Often, an uninhabited island and its reefs are 'owned' and managed by different inhabited island clans. For example, an island might be owned by Mogmog, but Federai has jurisdiction over the reefs, while Mogmog maintains managerial oversight. Certain reefs may be owned and managed by specific families, and in some cases, the back reef, reef crest and

fore-reef are owned and managed by different families. The realms of nature, such as the sea, the land and the sky, have spirits and there are customary practices to please the spirits for bountifulness. These practices have been integral to sustainable management, but the intervention of foreigners occupying or influencing the islands have led to an erosion of many of these beliefs and related cultural practices that supported sustainable reefs.

A critical element to effective contemporary management of reef resources in these islands has been the resurrection and re-implementation of some traditional practices. Many of the practices being re-implemented have been 'co-validated' by Western science teams as being effective from a data-driven perspective (Crane et al., 2017b and 2018b; One People One Reef, 2020), and enhancing traditional livelihood sustainability (Crane & Rulmal, 2014). These practices, historically, were an important part of management and as they break down, the resources that people depend on begin to decline.

The following are examples of management, and changes, from interviews and discussions with people from the Yap Outer Islands.

> **Ownership and use rights**. All islands, including uninhabited ones, are owned by someone. Traditionally, fishers needed to ask the owner to access part of the reef. This limits use, but is changing.

**Example: Taboos of Turtle Islands**
Giil'ab and Yaaor are among the Turtle Islands which belong to two clans on Falalop and are off-limits to most people. To fish there (which is generally uncommon), there needs to be permission granted, and a way to get there. These challenges limit the take of fish from these reefs.

To address these changes and strengthen traditional governance, we are working together to 're-draw' jurisdictions, which involves inter and intra clan discussions. The youth are heavily involved, ensuring they understand the system.

> **Spatial restriction.** Reef closures allow fish populations to recover from fishing pressure. They are put in place due to a death, dwindling resources, traditional rotations or any reason the owner decides. A closure generally means closed for some, but not all, occasions (e.g. subsistence fishing by community members (community fishing) is almost always allowed on closed reefs). Based on some of the data our Western teams have collected and shared, communities are deciding to reinstate closures and restrictions based on the traditional system.

> **Selective types of fish and seafood**. Some are restricted to certain groups of people. Many of these practices are not in place anymore:

- Certain fish, including large groupers and large male parrotfish, and fish with scales wider than three fingers are (used to be) reserved for chiefs. This limit helped conserve large females that produce the most eggs, or the largest male (parrotfish) with the most reproductive capacity. This practice had clear conservation implications.

  - On many islands it was taboo for women and children to eat certain kinds of fish, while other fish were reserved for them. Some fishes were reserved for only men. This is still practiced on some islands, but the degree varies.

OPOR is working with the communities to better understand these practices and which ones have diminished. Through our storytelling work, we have tied conservation outcomes to these cultural practices, and shared those stories with the youth. This emphasizes the importance of practices and traditional stories as conservation actions/messages.

> **Restriction of types and season of fishing** declared by the Chiefs, although the degree varies by island. Some of these have changed.
  - Net fishing used to be only for the community, and still remains on some islands.
  - Only pole fishing was allowed during closed seasons.
  - Seasonal openings depended on people catching particular fish and bringing it to the chief.
  - Season for collecting turtle eggs used to be from April to early May. This is the beginning of the turtle egg laying period, and taking of eggs during this time has a smaller impact on turtle populations compared with other times, since many of the early eggs do not survive as they are dug up by other turtles coming to the beach. More recently, eggs are collected throughout the summer and at other times.

  Our collaborative data collection on fish diversity and biomass, reef health and connectivity has led to traditional spatial regulations being reinstated, as well as new regulations such as limiting spear fishing and gill/throw nets (neither are traditional forms of fishing).

> **Catches of fish are checked** when they are landed, allowing reef owners and chiefs to 'keep track' of the fish caught, and that helps inform management decisions. This practice has stopped on many islands, though it is being reinstated on some. Traditionally, the first fish went to Mogmog from any Ulithi island, except Falalop. It allowed oversight of resources by the paramount chief who could then bring up problems or declines observed.

  Data collected through our collaboration has led to the implementation of a fish catch landings database where fishers measure and record catch. While this is a Western protocol, it fits within this traditional practice of 'showing' the catch. All data are recorded, analysed, and shared back with the communities so they can make decisions based on the data.

A united community is central to the well-being and survival for the people of the Outer Islands. Their socio-cultural systems are based on interdependence. For example, after a typhoon, leaders exert their power to keep the community together and work together. People start to clean up, reconstruct houses and plant foods right away. People learn from the elders that everything grows after a typhoon. After the typhoon, per custom, all reefs, including restricted ones, are open to fishing to ensure

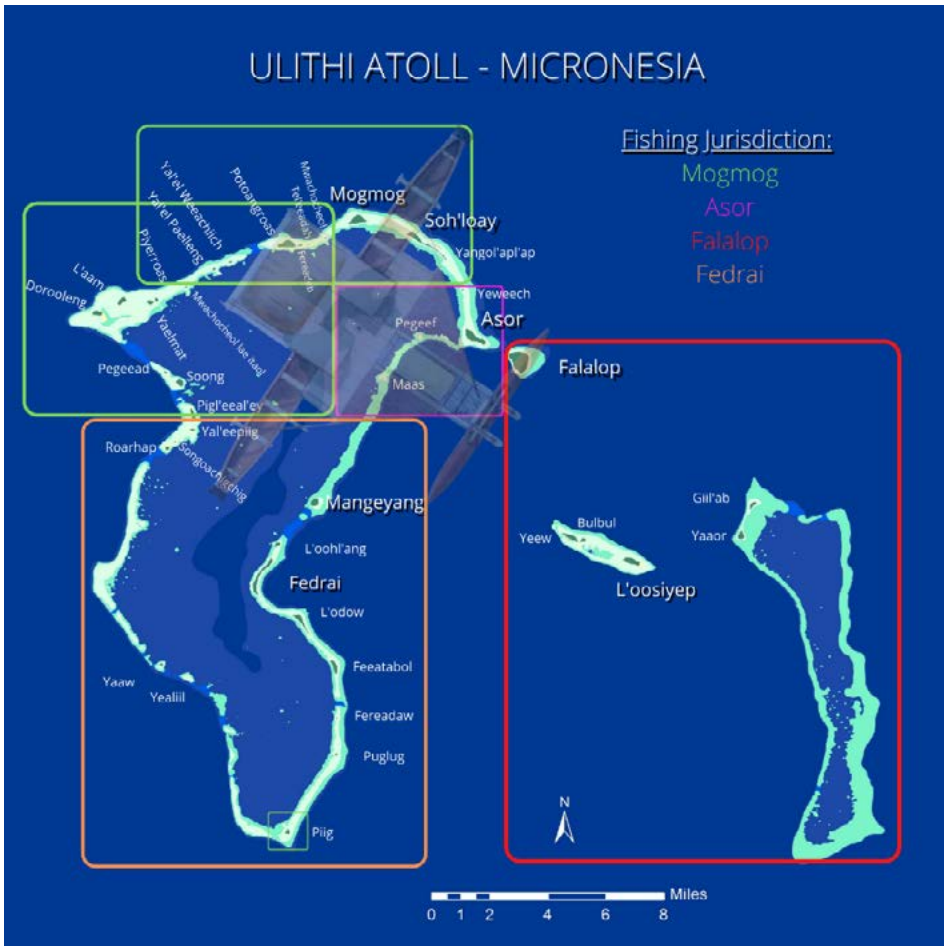


**Figure 4.2**
A map of Ulithi Atoll with fishing jurisdictions and an image of a voyaging canoe to symbolise the interconnection of clans and islands

Source: Courtesy of Nicole Crane and John Rulmal

that there are enough fish to feed all families immediately following the disaster.[2] Box 4.1 describes an analogy of this interdependence through the voyaging canoe and the essential role of all clans, while Figure 4.2 shows a map of Ulithi Atoll with fishing jurisdictions and an image of a voyaging canoe.

## Changes in practices

Access by outsiders to Ulithi, and by Ulithians to the outside world, along with globalisation and a cash economy, have brought changes and challenges to the communities of Ulithi. A significant driver dated back to World War II when Ulithi Atoll was converted into a United States naval base for the Third Fleet, and a staging area for major battles for which some islands were cleared and levelled for construction of runways and military facilities. Contacts with explorers, traders, missionaries and others all brought significant impacts. Introduced technologies have resulted in more intensified modern fishing methods (such as motorboats, spear guns and cast nets) focusing on a smaller number of target species, compared with more diverse fishing methods in the past where there used to be many different kinds of fishing. For example, on Woleai Atoll, more than 78 fishing types have been documented (Smith & Dalzell, 1991), whereas now that number is far lower with the loss of some. Only a

2 For further examples, see https://blogs.ubc.ca/yangdidi/.

## Box 4.1 The Micronesian voyaging canoe: an analogy for how collective benefits on Ulithi are achieved through social diversity and interdependence

In Ulithi, a canoe was the community lifeline. Each part of the canoe has different functions that are critical and indispensable to navigate successfully and safely to the destination. Figuratively, the canoe represents the community, the course represents the process, the destination represents the goal and the different parts of the canoe symbolise the clans within the Ulithi Atoll. Social diversity is evidenced by the different skill sets and expertise within clans, and those differences become the community backbone as they weave appreciations of interdependence into collective survival and achieving common goals.

Clans can be tied metaphorically to parts of the canoe – diverse components coming together to create a vessel capable of voyaging. Each Ulithian has a responsibility linked to the clan they are born or adopted into, and the person's name signifies the clan's expected responsibilities to the community. A person born in a leadership family is groomed to take specific leading roles. The family (clan) representing the canoe hull is in charge of bringing people (carrying the heavy load) to their destination, while the family representing the outrigger provides support to fulfill that task. Some social roles and responsibilities are gendered. Women are seen as the hull of the canoe and chiefdom is inherited through the maternal side. Men pass down to their children responsibilities associated with the upkeep of property and clan expectations, but the final decision regarding property is made by the women of the family who remain the property owners. Thus it is a role, rather than hierarchical rank that ensures success. If any part of the canoe fails it jeopardises all.

A model outrigger sailing canoe (E431500) made by Mau Piailug (Satawal Island, FSM) and donated to the Smithsonian in 2000.

Photo: Chris Urwin

The main hull of the canoe (*bbul*), which carries the people and bears the brunt of the waves, signifies leadership, and on Ulithi is representative of Mogmog Island (which is the island of the Paramount Chief). The outriggers (*da'm*) always stay parallel to the hull to provide stability and allow people to get on and off. Falalop Island and the resources they oversee represent the outriggers. The two ends of the canoe 'watch' (*matal wa*) the front where the canoe is heading and the back for security (stability). These ends are represented by Sogloi and Asor Islands (one end), and Mangyang and Federai Islands (the other end) which oversee and manage most of the inner lagoon fishing jurisdictions. The two ends have the flexibility to switch their front and back positions depending on the destination and wind directions. The two main beams that connect the outrigger to the main hull represent supporting clans (*Ra'ts*) located on Loosiap, Falalop, Mangyang, Sogloi and Mogmog islands. They are tasked with getting together periodically to discuss common atoll needs, advise the paramount chief on Mogmog, to serve as the messengers among the islands in the atoll, and are responsible for managing resources.

On an atoll like Ulithi, all resources – terrestrial, inner lagoon, reef and ocean – can be limited, depending on a myriad of factors, and each person – whether chief, resource owner, canoe builders or resource users – has a role in providing access to and caring for those resources, and ensuring their sustainability. Traditional rules of voyaging/travelling have to be strict, and it is important that everyone follows the protocols in order to reach the goal safely. The same applies to the resource management practices with which everyone must comply. The success is collective and this is recognised by the benefits being shared equitably. If particular groups or individuals exploit resources for their benefit without respecting the traditional values and practices, the entire community suffers as the resources are degraded. In much the same way, if a canoe has a strong hull, but the outrigger does not function properly, it will compromise the integrity of the canoe, which may not be able to reach its goal safely – or at all. The people of Ulithi base their traditions and social structure on the integrity of the community and shared goals, which can only be achieved by all individuals working together, just as every part of the canoe supports the whole vessel and its purpose.

few youth now know how to spearfish. The new methods are efficient but when used excessively have a big impact on the catch, which seem to have coincided with fish reduction and changes in reef health (Crane et al., 2018b; Houk et al., 2011). Storage technology, such as freezers, enables people to catch more than they can eat which can also deplete the resources (Cinner et al., 2016). A shift to motorboats has created a dependency on fuel that leads to overfishing on nearby reefs to limit high fuel cost. Motorboats are generally owned by individuals rather than clans or groups, which traditionally and collectively 'owned' canoes. This changes the balance of power over these essential assets and can also affect how the fish catch is distributed.
Despite the forces of technology, Westernisation and globalisation, the people of Ulithi have retained much of their traditional island culture, including their native Ulithian language, food-sharing practices and heavy reliance on their coral reef ecosystems for subsistence fishing. A household survey conducted in 2019 showed that all households on Ulithi are still involved in fishing and gardening activities and rely on local resources, but contemporary means of livelihoods have also become more common (although there are no commercial outlets on Ulithi except one small family run store for basic amenities). About 40% of the households have members who receive a salary from an employment with the government or private sector (a large number, for example, are employed as teachers) (Rulmal et al., 2019).

Today, many Ulithian youth move abroad and into contemporary lifestyles. As lifestyles change, some values and practices shift or are eroded. Facilitated focus group discussions and meetings conducted by OPOR with communities from 2013 to 2019 indicated that when youth who had left their communities (for school or other reasons) returned home, they were not always as aware of some of the local problems or how to address them with local knowledge or resources (Crane et al., 2018a). This disconnect can lead to a lack of engagement in their own island communities, where they are needed most during a time of such rapid and impactful change. Opportunities for the youth to interact with the elders and gain knowledge through experiential learning are becoming less. This is in part due to them leaving the islands and in part due to the educational system which has focused more on contemporary (and Western) content. In addition, the location of high schools on only two atolls (Ulithi and Woleai) means that many youth spend less time at home as they must travel to their schools for the school year. This has resulted in important knowledge not getting passed down to the younger generations, who then become less aware of, or disinterested in, traditional management practices and the reasons behind them (One People One Reef, 2020).

## Key outcomes

### Collaborating to strengthen and adjust traditional management of reefs and fisheries

The fact that some communities were able to open previously closed areas right after Typhoon Maysak in 2015, and gained access to needed resources as the COVID-19 pandemic hit, is a testament of the management benefits to community recovery and resilience in an unpredictable climate regime and disease landscape.

Among the communities, there has been a general consensus that traditional approaches and frameworks need to be better understood to adapt them to the current social and environmental context, enabling a 'modernisation' with a traditional

*The collaborative management on Ulithi has had several important positive outcomes: it brings more fish to eat, it keeps reefs healthy, healthy reefs protect islands, and management brings communities together and strengthens leadership. Management requires leaders to bring communities together around the management plan, and how to enforce it. It also helps younger people better understand the importance of management, and the traditions that have kept the reefs strong. Communities have articulated that this work to improve management has required them to address leadership issues as well, and has necessitated the opening of dialogue between islands, as well as with the COT (outer island Chief leadership council).*

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foundation: adaptive management. In 1991, in order to innovate its traditional governing system to be more participatory, the establishment of the leadership Council of Ten was created on Falalop Ulithi. The council consists of representatives of all 10 clans on the islands. Compared to the past where a decision-making table would be reserved to only two main clans, now everyone who belongs to one of the 10 clans on Falalop can be represented to manage more collaboratively. In 2014, representatives from the Outer Islands beyond Ulithi came together in an unprecedented gathering to discuss marine management together. They exchanged ideas, articulated challenges and learned from communities on Ulithi, as well as the OPOR science team, about new ways to approach management and resource tracking.

## Reviving reef and fisheries management

Central to our collaborative effort has been identifying and maintaining traditional systems, and better understanding what has changed. We have been highly successful in enhancing fish abundance as well as community dialog around stewardship. All four inhabited islands on Ulithi, and several other Outer Islands, are now trying 'new' management plans which are based on traditional frameworks. Each island controls a fishing jurisdiction and focuses on managing the take of fish and fishing methods. Thus, Ulithi is the first atoll in Yap State to have revitalised a 100% community-designed and -led comprehensive management plan that includes closures, gear restrictions and species restrictions. It is also the first atoll to have implemented data collection of landed fish at all four main islands, which has enabled them to track the status of their fisheries (Crane et al., 2018a). There have been successes on multiple levels, including resource enhancement, as a result of these efforts (Crane et al., 2018b).

Falalop was the first to re-implement a traditional (partial) marine protected area in 2012. It has closed one area of the island to all fishing, except community fishing and fishing from shore (primarily by women). The other section of the island is closed to night spearfishing, and no gillnets or throw nets are allowed.[3] Mogmog followed in

3 Spears and gill nets are more contemporary methods of fishing.

2013, and closed the section of its most degraded reef in front of the island (south side) to any fishing except community fishing and fishing from shore. Gill nets and take of parrotfish by spear at night has been banned. They have also implemented a traditional custom of notification of 'first catch' to signal the opening of lagoon fishing. Likewise, starting in 2013, Asor implemented rotating closures on the south-facing side of the island (two areas are rotated, and a third area has been closed to all but community fishing). In 2014, Federai implemented rotating closures on the west-facing side of the main island, and has banned the take of bumphead parrotfish (*Bolbometopon muricatum*), which is designated as Vulnerable species by the IUCN Red List of Threatened Species™, and the humphead wrasse (*Cheilinus undulatus*), which is designated as Endangered by the Red List.

Slightly over half of the lagoon-facing reefs of the inhabited islands of Asor, Falalop, Mogmog and Federai are now under revised and/or new management as partial, near total and/or rotational closures. Other uninhabited but fished reefs have also received additional protection. Biological survey and social science data show clear positive social-ecological outcomes of the managed areas. Fish biomass has increased at all managed sites since the beginning of the OPOR work (Crane et al., 2018a; 2018b). It has brought back some larger fish and in turn the local food and the livelihoods of the Ulithi people have improved. By managing fish, reefs are being protected. With the banning of some fishing methods and site protection, herbivorous fish populations increased (along with all trophic levels of fish) which appears to have led to partial reef recovery at some sites (Crane et al., 2018b; Crane personal observation, 2023).

In 2016, *Montipora* dominated; low coral cover (left); in 2023, the same section of the reef dominance of *Acropora* species; high coral cover (right).

Source: Courtesy of Nicole Crane/ OPOR

In addition to partial closures, there have been measures taken to address the impacts of more modern fishing such as spear guns and gill/throw nets. Reef owners of all four islands have restricted spear fishing in some way. Some have banned it at night while others have banned it on certain reefs. Biological monitoring shows that the numbers of targeted fishes (mostly herbivorous fishes such as parrotfish-Mau) have increased, possibly as a result of management. In addition, corals such as *Acropora* seem to be returning to managed reefs (in Mogmog, for example). Throw nets target the algae eating fish, such as surgeonfish, especially the young ones, which can be a problem as these fish play an important role in maintaining reef health. On Mogmog, it is observable that banning throw nets has increased the numbers of surgeonfish which are important to reef health. Mogmog has also seen the fastest and most dramatic return of *Acropora* corals (see photos above).

All four islands participate in a programme to collect size, species, reproductive state and gear use data from landed fish (a data set they wanted to collect). The Western science team receives these data and presents the communities with the results. This has been an important way for local science teams to run their own data collection, and learn more about the fish their gear is targeting. It has been a catalyst for conversation around the impacts (and frequency of use) of certain gear. Spear guns (often used by the youth) have been at the centre of much of this discussion. People have become more aware of the extent of the impact of non-traditional gear types, and the need to adapt their management in light of this generational shift.

### Community and youth involvement/leadership as an instrument for adaptive resource conservation

With the observable changes related to a decline in marine resources and the desire to implement better management, community members wanted to become more involved with resource management and conservation and to lead initiatives. They wanted to understand drivers behind the changes and what could be done to better manage resources for the future of their communities.

Furthermore, it became obvious that a sustainable future requires the youth to be engaged and learn about their local environment and resources, and how to best protect them. Although involving youth is a fairly new concept for many communities (traditionally, youth work their way up to involvement), the community has identified youth engagement in reef management as a major priority today to secure social-ecological integrity (One People One Reef, 2020). If the youth are not involved, they would not understand the issues or the management solutions. Many leave their communities, and the knowledge about traditional governance and management is not transferred to them. But these youth will be implementing management in the future, and it is important to educate them in more traditional ways. One meaningful way to achieve youth involvement is to work through the youth groups that are established on many islands. Federai, Mogmog and Falalop all have recognised youth groups and meet monthly. OPOR has worked to build a youth engagement programme around reef management, traditional storytelling and collaborative science.[4]

## How governance processes have affected local well-being and conservation outcomes

In Ulithi, traditional governance and social-ecological well-being are intertwined. Changes in one have profound impacts on the other. Natural resource governance was a part of traditional governance that has remained a responsibility of the Chiefs and local leadership, and the well-being of the social-ecological systems of Ulithi has always been central to that. Understanding how the traditional ways of managing reefs and fisheries worked well in the past helps to co-identify traditional methods that could be brought back or further evolve, and discuss where to incorporate new ones building on what already exists. Partial protection MPAs, for example, are a long established method of marine resource management, albeit with local ‘definitions’, and

4 For further information, please see: https://onepeopleonereefstorytellingproject.org.

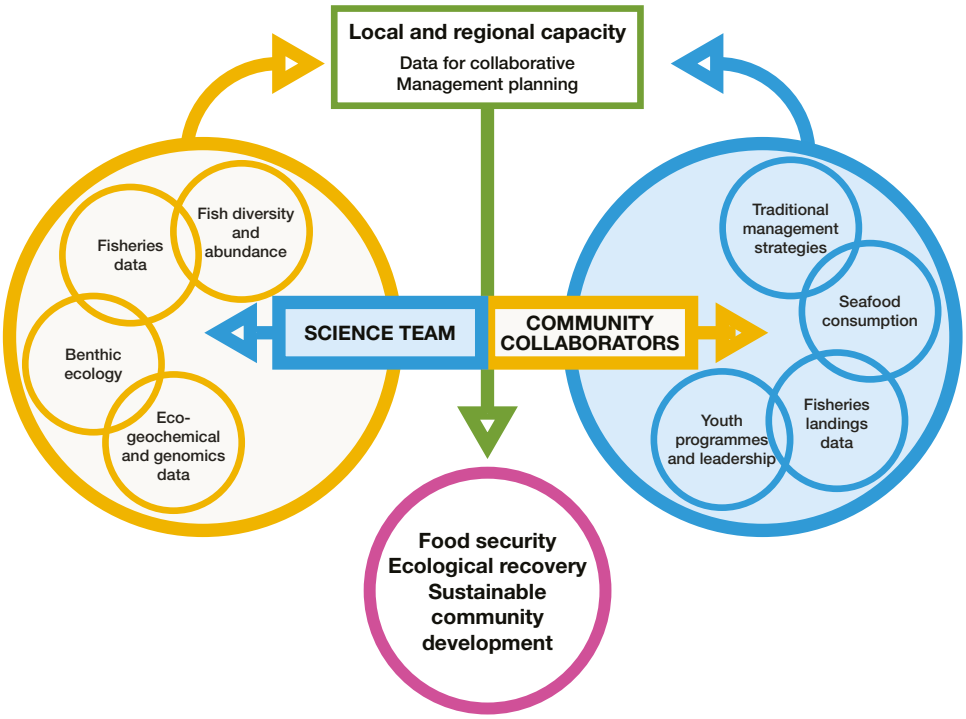


**Figure 4.3**
The governance model for conservation and well-being in Ulithi requires collaboration between community members, local leaders and scientists

Source: Crane et al. (2015, p. 4)

when presented as a traditional method communities embraced them as one of several strategies to enhance the reefs and associated resources (Andradi-Brown et al., 2023). An intertwining of Western and traditional monitoring has underpinned effective decision-making for both conservation of marine habitats and species, and well-being in terms of food security and social-ecological resilience (Figure 4.3). If foreign-led reconstruction and recovery programmes, climate adaptation programmes and other sources of support consider these social-ecological interrelated issues, Outer Island communities can advance their planning and implementation of climate adaptation, resilience building and sustainable management efforts, achieving both conservation and human well-being outcomes (Wongbusarakum et al. 2019).

## Conclusion

Across vast areas of our planet, the most effective, equitable and sustainable way forward is to place Indigenous peoples and local communities, as well as their values, knowledge and customary institutions, at the centre of conservation efforts. This will ensure sustainable and mutually beneficial conservation outcomes. 'Protecting vulnerable resources for sustainable use' is more of a locally applicable concept than 'nature conservation' for many Indigenous peoples and local communities. This can be contrasted by the rapidly expanding marine protected area (MPA) initiatives. Many MPAs are exclusive of use, and neglect local knowledge systems, imposing Western designs that ultimately can lead to a lack of longevity and ecological and social degradation, reducing resilience and possibly violating human rights.

This case study reveals the power of collaboration, recognising the critical role of local leadership, and the centrality of local knowledge and social systems in planning as foundational to sustainable outcomes. Global targets need local level successes to meet their marks, and these are best accomplished through authentic collaborations that

put local people and their practices at the centre. For communities of the remote outer atolls of Micronesia, self-reliance and the sustainability of local resources are key to survival and well-being. Communities are aware that traditional management must evolve for them to not only survive under uncertainties but also to thrive.

Acting on that awareness, some traditional practices are being revived and some 'newer' approaches are being considered for integration into their local resource governance systems. By respecting local knowledge and traditional resource governance systems, including the decision-making rights of the communities, and by combining these with the committed collaborations among external scientists and local leaders, we can improve social-ecological sustainability for both current and future generations of the Ulithi Atoll, and serve as a successful global model.

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# Lessons in adaptive governance of complex social-ecological systems: long-term experiences from the Fandriana Marolambo forest landscape restoration, Madagascar

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## Abstract

This study provides governance lessons from the Fandriana Marolambo forest landscape restoration project in Madagascar. The project was established in 2004 to maintain the biodiversity of the forest corridor, restore ecosystem services and improve the well-being of the local population in the face of tenure conflicts and commercialisation processes that led to rapid deforestation. Eventually, the collaborative efforts of local communities, the World Wildlife Fund, state and private organisations have all been successful in reversing deforestation while also generating positive social outcomes, despite the long, unforeseen and complex pathways. Inevitably, the project's emphasis quickly shifted from short-term ecological results to focus heavily on building trust and intercultural understanding as a platform for long-term, locally-beneficial restoration. National laws prohibiting shifting cultivation were even challenged and bypassed, as regional informal agreements were established with the relevant authorities to provide enhanced recognition and enable customary institutions to take a central role in delivering successful, long-term restoration.

**Keywords**: shifting cultivation; customary institutions; communal tenure; reforestation; tree planting

## Introduction

Programmes and projects are proliferating worldwide with aims to mitigate climate change and enhance biodiversity, as well as to acknowledge the numerous contributions that functioning forest ecosystems can make to human well-being. Ambitious international pledges and targets have been made for forest restoration, including Target 2 of the Convention on Biological Diversity's Global Biodiversity Framework, which aims to place 30% of degraded areas worldwide under effective restoration by 2030, as well as the New York Declaration on Forests and the Bonn Challenge on Forest Landscape Restoration (Mansourian et al., 2021; UNEP, 2022). At the same time, the complexity of the task is often underestimated and results frequently fall short of aspirations, or do not last beyond short-term planting (Elias et al., 2022). In particular, the social and political dimensions of inclusion, decision-

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making authority, tenure security, institutionally fit and collaborative relationships that determine how equitable and effective governance is, are desperately overlooked (Anguelovski & Corbera, 2023; Rakotonarivo et al., 2023).

The Fandriana Marolambo forest landscape restoration of the moist forests of eastern Madagascar provides an ideal long-term case study to illustrate and interpret these lessons. The programme was initially planned as an externally-led intervention, which was meant to set a trajectory towards forest restoration within four years. Instead, 13 years after and more than double the financial resources initially budgeted, only some successes have been achieved. The design of the programme and the processes engaged in were very different from the work envisioned at the beginning. Not only did it involve a greater focus on, and collaboration with, local communities, but governance was completely reoriented in such a way that the communities and their customary institutions became central to a more bottom-up restoration initiative. To enact this transformation, ensuring the political empowerment of local communities became an essential goal.

## Fandriana Marolambo – its biodiversity, people and livelihoods

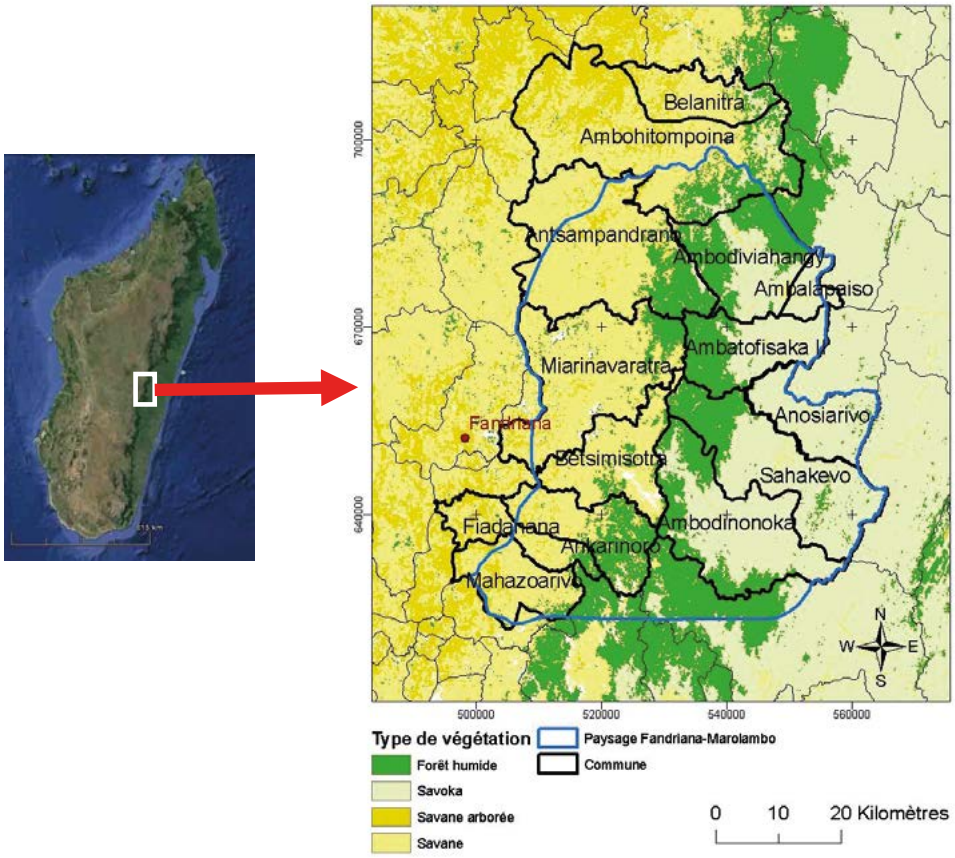
The Fandriana Marolambo landscape covers more than 200,000 ha across the three administrative regions of Atsinanana, Vakinankaratra and Amoron'I Mania (Figure 5.1). Its moist forests are rich in biodiversity, with a high number of endemic plants, as well as 13 species of lemurs belonging to nine of the 14 existing genera in Madagascar, including the endangered Betsileo sportive lemur (*Lepilemur betsileo*) and the brown mouse lemur (*Microcebus rufus*). Sixty-four amphibians and 29 reptile species have been identified (MICET, 2000), including endangered species, such as *Calumma spp.*, *Furcifer spp.*, *Phelsuma spp.* and *Sanzinia madagascariensis*. However, around the turn of the last century, the forest in Fandriana Marolambo was, like many forests in Madagascar, being lost at an alarming rate. Between 1990 and 2010 the country lost about 57,000 ha of forest each year, netting a total loss of over 1 million ha during the 20-year period (FAO, 2010).

The Fandriana Marolambo landscape is also home to 150,000 people, primarily from three ethnic groups – the Betsileo, the Vakinankaratra and the Betsimisaraka. Their livelihoods largely comprise of:

- shifting cultivation, known locally as *tavy*, practised primarily by the Betsimisarakas on the eastern side of the forest, for rice, sugarcane, cassava, potato, beans and other crops;
- paddy rice, cultivated mostly by the Betsileos and the Vakinankaratras in valleys and wetland areas on the western side of the forest along with some rain-fed agriculture;
- raising livestock, particularly zebu cows, among all ethnic groups; and
- collection of forest products for subsistence and sale on both sides of the forest.

**Figure 5.1**
Map showing the location of the forest landscape and the communes where the project was carried out

Source: Razafimahatratra (2019, p. 13)




Some of the important products harvested are construction wood – the main material for Betsimisaraka houses – firewood and charcoal produced mostly from forest fallows, wood for agricultural tools, wild honey, crayfish, tree bark, raffia fibre and more. Raffia fibres are collected by the Betisimisarakas, from the east, and sold to people on the western side of the forest, where it is processed for handcraft and sold (Aliferana, 2008). The Betsimisarakas also grow clove tree as a cash crop (Rabearivony, 2009). Rum from a combination of sugar cane and bark from an *Eugenia* tree (the bark triggers fermentation) is also an important product for local production and trade. It is produced on the eastern side of the Betsimisarakas, who sell it to the Betsileos in the west, where a part of it is consumed and the residue sold in nearby towns. Across all three ethnic groups, annual household income ranges between MGA 150,000 and 450,000[1] (between US$ 34 and US$ 102). Earnings come from cash crops, salaried agricultural labour and livestock, handcraft and forest products. Agricultural income accounts for the majority, coming primarily from the sale of products, such as rice, potato, cassava or beans, closely followed by income from forest products (Roelens et al., 2010).

Local cultural values and customary institutions continue to shape the local use and management of forests. For example, the shifting cultivation, or tavy, practiced by Betsimisarakas is not only about food production, but shapes the livelihoods and social life of their community through collective activities, systems regulating access, and norms for sharing. For example, in the Betsimisaraka tradition, zebu

1 US$ 1 = MGA (Malagasy Ariary) 4,400 (exchange rate on 21 April 2023)

cattle offerings are required in many ceremonies. As far as the Betsileos and the Vakinankaratras are concerned, zebus are used to work the paddy fields and are sold only when urgent money is needed or especially, when someone dies and zebu cattle must be killed to feed the villagers that come to support the dead's family. Local rum also has an important cultural value, especially in the western side of the forest, as it accompanies most, if not all, the traditional rituals. Lineages and elders continue to play an important role regarding the customary tenure of land and forest resources. There is a traditional zonation of the forest between the lineages, which remains respected by the villagers today. However, customary tenure is not recognised by statutory laws, as all forest lands are legally owned by the state, with the tavy practices totally forbidden, both on primary and secondary forests. As described in the next sections, this institutional conflict was a key area the project had to address to ensure legitimacy and provide a foundation for restoration to take place.
The Fandriana Marolambo forest landscape restoration project was initiated in 2004 through the World Wildlife Fund (WWF) at the recommendation of a national working group on forests and biodiversity. For the 200,000-ha landscape, WWF committed to:

> maintain the biodiversity and the functional integrity of the forest;

> restore forest-related ecological goods and services; and

> improve the well-being of local populations inside the landscape.

The project's measures consisted initially of education and sensitisation of local people towards forest conservation. Alternative agricultural livelihoods programmes were also designed to intensify the use of some land to augment income generation and relieve local pressures on standing and degraded forest areas, which could then be restored actively and passively.

The agricultural component was based on improved techniques, including improved intensified rice farming, agroforestry, composting, crops under plant cover, crop associations, market gardening and beekeeping. Through these externally designed pathways, it was envisioned that the area would be under active and more sustainable management, with large areas restored to moist forest habitats in the process, within the four years of the original project timeline. Essentially, the livelihoods of local communities were considered to be the primary driver of deforestation and the initial programme design sought to alter their means of generating income to allow restoration. However, it became apparent that the social and political dynamics of this complex social-ecological system were such that an entirely different approach would be required. In particular, the non-local drivers of unsustainable forest exploitation by local communities had to be factored in. Moreover, the embeddedness of forest attachments and uses in social and cultural practices meant that although local livelihoods were not the major issues, it became the main solution to forest restoration.

## Social and political reasons for transforming restoration governance

The drivers of deforestation were complex and political, and could not simply be attributed to unsustainable local livelihoods or poverty-induced forest dependence. Instead, forest use had primarily become unsustainable due to tenure conflicts and

insecurity, with all forests officially belonging to the state and shifting cultivation prohibited, along with agricultural commercialisation policies and processes driving agricultural expansion and exploitation of natural resources.

For years, the frontier villages in the Fandriana Marolambo landscape were cut off from state services due to particularly difficult access to the area. Neither the state nor the regional government could deal effectively with local development, conservation or livelihoods, because they had insufficient resources to reach remote communities. Despite the strength and power of the Ministry of Environment and Forests, the three regional forest offices (of the three administrative regions covered by the forest area) responsible for managing this landscape lacked the resources to have any effective impact. At the local level, the only authorities known by and accessible to villagers are the *fokontany*, the local state administration representative, and the commune, the local council. None of these institutions have played important roles in local development and forest corridor conservation, since they lacked the means and capacity, as is relatively common throughout Madagascar.

Customary institutions thus continued to be the primary form of forest governance, with important roles for lineages and elders. In fact, there is a traditional zonation of the forest, which is still respected by the villagers today. However, these customary tenure systems, with no formal titles, are not recognised by the statutory laws – forests are state-owned and do not allow private appropriation. Furthermore, the *tavy* system is forbidden on primary and secondary forests. As in many tropical forest regions, shifting agriculture, swidden or rotational use of forests and fallows were seen as destructive practices which encroached on forest resources belonging to the national government. Even without a regular state presence, the threat of punishments for practicing *tavy* leads farmers to farm in remote areas and abandon land and change places regularly, rather than maintaining lands properly. This also diminished the level of control that local institutions of authority have over which lands to use each year and regenerate. Tenure insecurity has been highlighted as a cause of deforestation across Madagascar (Wendland et al., 2010), although land reform processes have begun to improve local communities' land rights, but will take many years to implement.

An additional pressure on the forests is brought about by agricultural policies promoting commercial cash crops, such as coffee, in the name of national and local economic development. This leads to contradictions between local institutions aimed at conserving forests, government policies for farming and infrastructure, and the commercial pressures exerted through companies and traders. For example, in an effort to promote settlements in the Fandriana Marolambo area during the 1970s and 1980s, the central government issued permits to allow farmers to remove forests for agriculture. The resulting forest loss led to significant outside funding for conservation in the 1990s and a subsequent reversal of government policy, punishing instead of promoting forest clearance (Aubert et al., 2003). When conservation became a greater priority, local smallholders were often seen as the direct cause of forest clearances. Proposed interventions therefore sought to restrict their access, despite claims to customary tenure and the potential of a sustainable use and guardianship of those areas. Understandably, this historic marginalisation of local communities through actions brought through either the state or projects led by external non-government organisations (NGOs), led to conflict and mistrust between communities and authorities.

As the restoration project developed, it became clear that the issue of land tenure would be of major importance. Firstly, for communities to gain from and play a key role in the project, the conflict between customary and legally recognised tenure would need to be addressed. Additionally, after the restoration project commenced, plans emerged from the national parks authority of the Marolambo National Park inside the landscape requiring negotiation and clarification of the distinction between protected lands, land under restoration and community lands. Policies and programmes termed 'restoration initiatives' had also been implemented prior to the project, which involved plantations of non-native commercial species, such as eucalyptus, which resulted in lands being appropriated by outside investors, while attempts to create native forests implied that they could be appropriated by the state. Thus, it is no surprise that the introduction of the Fandriana Marolambo restoration programme in 2004 was met with significant mistrust by local communities. These contentious issues of trust and tenure would therefore become a high priority for the Fandriana Marolambo restoration project.

## Adaptation of the restoration project – Recognition of local institutions

Because of their experience with external interventions, which commonly sought to blame traditional practices for land degradation, and thus alter them, local communities were distrustful of the restoration programme. Therefore, project staff had to invest significantly more time than expected to engage and build trust, with greater numbers of local facilitators needed to engage on a continual basis with the different communities living in the landscape.

The change to shift local institutions at the centre of the project, and to ensure their role was supported, was not a simple task, albeit essential. To facilitate a key role for local communities, local associations, or 'COBAs', were established, enabling them to directly negotiate contracts with the state, commune and local authorities – in collaboration in all cases with an NGO. Madagascar's forestry legislation enables opportunities for these co-management arrangements to be established through the 1996 law[2] on secure local management as well as a 2001 law[3] facilitating forest management contracts established with communities. These laws were were the bases for the restoration to place communities in a position of control over land-use decisions, especially relative to their previous position. Most importantly, throughout these processes, local decision-making processes were respected by the state and NGO partners, such as WWF, the Durrell Wildlife Conservation Trust and Madagascar National Parks, who supported (modified) traditional practices that were otherwise legally prohibited, such as shifting cultivation, through negotiated local arrangements, which built the confidence lacking to ensure that conflicting national policies would not be enforced.

In this case, a strong social cohesion within local communities and well-functioning, respected local institutions enabled a beneficial collaboration between the state, WWF and communities towards the establishment of restoration actions and livelihood improvements. The network created and enabled effective round-table discussions, which had not occurred in the past. In particular, the forest

2 For further information, please see: http://www.justice.mg/wp-content/uploads/textes/1TEXTES%20NATIONAUX/DROIT%20PUBLIC/Environnement/loi%2096-025.pdf

3 For further information, please see: https://www.fao.org/faolex/results/details/fr/c/LEX-FAOC203444/

service started conversations and negotiations directly with locals, as well as local authority representatives, upholding more responsibilities in the sensitisation and mobilisation actions in favour of the project. Likewise, local elders who did not think to be responsible for such environmental or conservation/restoration prior to the project were consulted and involved. Finally, the project ended up building a mutual confidence, mutual respect and true collaboration – all those based on a negotiated agreement to manage and conserve forest resources. Eventually, with the completion of WWF's role in 2013, the management of the project was successfully handed over to the communities, in collaboration with their state and non-government partners, such as Tafo Mihaavo, which supports community-level governance.

Allowing shifting cultivation to continue enabled all the parties to solve the major conflict: inconsistency between local customary tenure of forest resources, on one hand, and the forest laws which made it illegal on the other. The project had to find a compromise, which was to allow shifting cultivation to take place, but it was restricted to the use of existing fallows rather than clearing new areas of established forest. This was crucial for the project's implementation, which also meant sharing responsibilities and risks between the different stakeholders – including the forest administration at both local (*cantonnement forestier*) and regional levels, and the communes.

This type of political tolerance towards illegal practices has been acknowledged to influence the effectiveness of local projects and actions elsewhere in Madagascar, but has never reached this degree of acceptance, especially from the state.

Andriamalala and Gardner (2010) report that to reduce the legal constraint on local practices on the Velondriake marine reserve, in Southwestern Madagascar, the local committee decided not to enforce the legal prohibition of hunting sea turtles, but preferred to only remind people that its practices are illegal. The state's engagement, through the forest service, is much higher in sharing risks and responsibilities in the Fandriana Marolambo landscape. In Madagascar, local regulations and committees for such purposes are known as *dinas*. *Dinas* are often externally imposed and/or reflect state or NGO priorities rather than community interests, and consequently are not well understood or viewed as legitimate among local populations (Klein, 2023). However, in the case of the Fandriana Marolambo landscape restoration, the inclusion of customary practices, such as *tavy*, gave greater local legitimacy.

In 2010–2012, WWF supported the creation of a (formal) local community association, *Vondron'Olona Ifotony* (VOI), which was formally given the right to manage the restoration forest area as a community resource. WWF succeeded in engaging the forest service and the commune in respecting local decision-making processes. For example, when the Vy Be villagers decided to give up their poorest fallows to restoration, their decision was made during *kabary*, which are palavers led by their own elders, without writing anything down. Decisions were made orally, following ancestral decision-making processes. WWF and its partners (especially the regional forest service) respected these procedures and decisions, and did not force villagers to write everything down – thus recognising the villagers' agency.

The different kinds of restoration – namely passive, active and mixed – were submitted to 10 representatives for each of the 15 communes of the Fandriana Marolambo landscape, who then prioritised the restoration activities in each commune

(Razafimahatratra, 2019). Whatever the type of restoration, the first step towards the restoration activity was the acceptance by each individual association member to give up one or several of their fallow parcels. For passive restoration, village communities decided which individual parcels belonging to members would be abandoned to spontaneous regrowth, which were then protected by firebreaks built by the villagers. Moreover, to secure the parcels under passive, active or mixed restoration, local conventions – *dinas* – were created, allowing the villagers to take the initiative according to their usual decision-making processes. The involvement of VOI members in the choice of the species was to ensure the economic relevance of the restoration. The approach for implementing restoration was aimed at enhancing tenure and benefits, but also compliance with *dinas*.


Site of passive restoration in Sakalava

Photo: Courtesy of Appolinaire Razafimahatratra

Regarding **active** restoration, local associations established and managed tree nurseries. Association members were encouraged to choose the useful tree species according to their needs, in order to ensure the survival of local frequently harvested species. Demonstration sites for improved management techniques were organised by church, youth and women's associations to ensure a wide social inclusion. Finally, to improve household income and well-being, the project made technical proposals based on local values and knowledge of which crops and activities to prioritise. The consideration of both perceptions and symbolic values, connecting the actions with their traditional knowledge and preferences, and not only income-generating potential, improved the socio-cultural acceptance of the livelihood support provided. project design towards more community-led governance.

## Social and ecological outcomes of the restoration project

As a result of efforts over nine years to recognise local values, knowledge and institutions, local people sensed a greater recognition of their identities and customary institutions by the authorities, an increased ability to express themselves as well as enhanced tenure security – all of which generated a sense of empowerment and ownership of the project. On their side, state services and the commune became partners in equitable collaborations with effective two-way communication with the local communities. This led to enhanced relationships and new opportunities to widen areas of discussion to other development issues.

The livelihood improvements realised through the project included: 50–80% adoption of improved rice growing techniques by individual members of associations; approximately doubled harvests using half the quantity of rice seeds; and successful harvest and sale of *Citrus spp*., which many people believed could not bear fruit in

the area. These improvements led to recorded increases in income levels, with people earning up to MGA 1.2 million (US$ 273) per year for 0.2 ha using the improved rice growing techniques.

## Challenges encountered

The positive livelihood impacts have, however, not been fully inclusive. Generally, restoration has been more successful among households who depend less on forest resources and benefited from the agricultural improvements. For example, among 27 households living in forested areas and considered to be highly dependent on forest resources, income levels decreased by around 37% on average due to restrictions on access to forest areas under restoration (Razafimahatratra, 2019). Further assessment is required to understand these dynamics and mitigate any increased vulnerability.

In 2013, a further challenge faced the project. A new protected area within the landscape was established – the Marolambo National Park – placing over 95,000 ha of the landscape under protection and state control. However, the ongoing restoration project was important in raising local voices to guide the location of the protected area away from the areas most important for livelihoods and cultural practices. For example, during the consultation meetings for the delimitation of the park, 11 communities located along the western part of the forest successfully negotiated for more areas to be recognised as under their management, given the limitation of access and rights to resources that the park would bring.

Varongy (*Ocotea sp*) plants from seed in the nursery at Ambodivoangy

Photo: Courtesy of Appolinaire Razafimahatratra

Regarding the ecological outcomes, by 2017, locally managed nurseries were producing a total of 100 indigenous species, and on each restoration plot an average of 25 different species were planted. Overall, 999,370 saplings were planted in the landscape up to 2013 within more than 50,000 ha that had come under the recognised management of community-based organisations, with 6,800 ha specifically designated by communities for restoration. As a result, deforestation rates greatly decreased to less than 1%. Impressively, the survival rate for the indigenous tree species planted was 75%, which perhaps reflect the high levels of local legitimacy achieved through the adapted project design towards more community-led governance.

## Conclusion

In practice, the initial plan allowing four years to complete the project was clearly insufficient for such an ambitious forest restoration in a socially, politically and ecologically complex landscape. Instead of just a single four-year project funded with EUR 756,000 from the French Ministry of Foreign Affairs in 2004, restoration efforts have been carried out through four successive phases, funded by different donors: from a focus on the ecological aspects of restoration, to a more holistic approach inclusive of local institutions and voices, to support sustainable, locally-valued livelihoods and finally to strengthen civil society capacity to themselves continue to deliver restoration (Mansourian et al., 2018). More than EUR 1,6 million was invested in the landscape over 13 years.

Key lessons learned from the project over the nine years include the fundamental importance of social dimensions of restoration, particularly the values, institutions and political experiences of diverse local communities (Mansourian et al., 2018). Building trust and intercultural understanding can take many years. Sufficient resources and capacities must be allocated to ensure that these principles are considered, as well as establishing strong, equitable and cross-cutting collaborations with multiple organisations (Elias et al., 2021). Assessing the quality and status of customary institutions, and exploring possible ways in which they can be strengthened and empowered, is a key step – the recognition and political strengthening of these institutions can bring benefits far beyond material and livelihood incentives (Campese et al., 2022; Tedesco et al., 2023). Providing political solutions to support security of tenure, particularly for customary forms, which face discrimination and legal prohibition in Madagascar and globally, can be pivotal for effective restoration projects (Rakotonarivo et al., 2023). However, it should be noted that while strong cohesion, adherence to traditional institutions and respected authority were evident in this case, many local institutions worldwide have been severely disrupted through processes of commercialisation, individualisation and cultural assimilation into dominant cultures (Anguelovski & Corbera, 2023). Because of these uncertainties, it is important to have the flexibility within projects for adaptive learning, including the reorientation of objectives and changes to expected governance structures .

Adaptation of the project goals, timeline and budget were essential to establish locally-legitimate governance. Many features of the new design were equitable, in that communities enhanced their influence and the recognition of their identities and rights increased. Through considerable negotiation among the multiple stakeholders, local institutions were accepted and nested within regional agreements and national policies. Nonetheless, recognition remains incomplete as shifting cultivation is still prohibited by law, representing a future challenge for both the continuation of the project, and for expanding similar initiatives to other Malagasy landscapes.

Ultimately, the project evolved to become entirely different than was initially envisioned. Rather than an externally controlled project educating and adapting local behaviours, it became a bottom-up exercise to build trust and empower communities, recognise their rights and place them and their customary institutions at the centre – not simply as consulted parties or beneficiaries, but as leaders to whom the programme has now been handed over.

The changes to the project did not represent a mere tweak to the original plan, but a transformation to become a collaborative intercultural process focusing on the agency, recognition and empowerment of local communities to deliver forest restoration within their lands through their institutions and knowledge. A key lesson for the many subsequent forest restoration projects as part of the Bonn Challenge, Global Biodiversity Framework Target 2, UN Decade on Ecosystem Restoration, Nature-based Solutions and climate change mitigation programmes is: recognition for and control in the hands of Indigenous peoples and local communities should be viewed from the outset as the means to deliver effective ecosystem restoration, and become standard practice (Cohen-Shacham et al., 2019; Reyes-García et al., 2019).

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# A fine balance: history, governance and pastoralism result in positive conservation outcomes in Southern Kenya*

Peadar Brehony and Nigel Leader-Williams

## Abstract

This article describes the initiatives of two communities in Southern Kenya who have chosen to establish conservation areas on a significant portion of their land. Using both qualitative and quantitative data, including household surveys, semi-structured interviews and satellite remote sensing, we present findings to demonstrate why this alternative model of community conservation, based on local governance institutions and not compromising locally important pastoralist livelihoods, appears to result in positive outcomes. Our findings demonstrate that historical context and ownership of conservation areas are an important point of difference with many conservancies. Finally, management of natural resources remains in the hands of local governance institutions which maintain a desirable social-ecological system. Together, these lead to a form of community conservation, embedded in a working landscape, far removed from the notions of full spatial separation between people and wildlife.

**Keywords**: Just conservation; traditional livelihoods; adaptive governance; social-ecological system; wildlife conservancy

## Introduction

Some of the most innovative conservation efforts are emerging in the rangelands of East Africa, where there are no formal protected areas and where conservation is a matter of choice, and not an obligation (Homewood et al., 2009). In this article, we present findings from Southern Kenya which suggest that community conservation can result in positive conservation outcomes. This case is far removed from the notions of spatial separation between people and wild animals, but rather a working social-ecological landscape. Here, as elsewhere, conservation is political – it does not avoid the complex ethical and political considerations that are at the heart of conservation as a spatial practice. However, this is not the mainstream view of conservation often reported in East Africa's rangelands.

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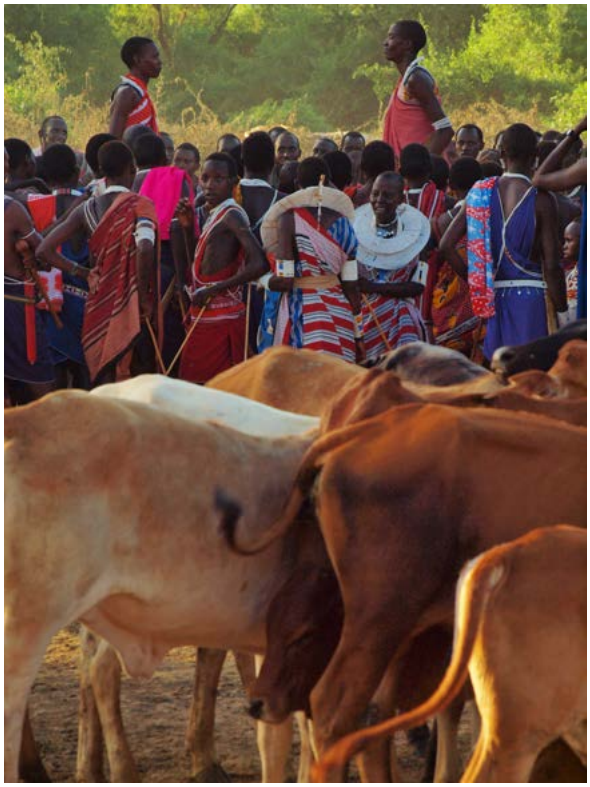
East Africa's rangelands have been economically and politically marginalised, resulting in weak social and economic services (Elmi & Birch, 2013). Government policies from colonial times to the present have promoted the sedentarisation, or settling, of pastoral people into non-mobile and permanent communities (Fratkin & Roth, 2005). At the same time, access to key grazing, water and mineral resources have been curtailed, or lost completely, to other forms of land use, including cultivation (Homewood et al., 2009) and conservation (Cavanagh et al., 2020). Many pastoral systems have therefore undergone rapid changes to a more fragmented system, with consequent impacts on livelihoods, governance, culture and coping capacities to inevitable shocks (Homewood et al., 2009). In the past, people could use traditional coping mechanisms, such as mobility over large and variable landscapes, but these are now undermined by the fragmentation of their rangelands (Tyrrell et al., 2022). Many pastoral communities are therefore looking to diversify their livelihoods, particularly into cultivation, wage labour and small-scale business (Homewood et al., 2009).



Livestock are central to the culture and economies of Maasai pastoralists

Source: Courtesy of Peadar Brehony

The historical context of conservation efforts in Kenya go as far back as early-1895, when the British colonial government set out to control the killing of wild animals and trade in ivory by setting up game reserves and rules about the exploitation of wild animals by colonial settlers (Adams, 2004). Following the National Parks Ordinance of 1945, the first national park in Kenya, the Nairobi National Park, was set up in 1946, followed by Tsavo National Park in 1948, Mount Kenya National Park in 1949, and the Aberdare National Parkin 1950. In 1977, country-wide declines in elephant *(Loxodonta africana)* and black rhinoceros (*Diceros bicornis*), as well as perceptions about the colonial nature of hunting (Steinhart, 2006), among other reasons, led to a ban on hunting in 1977 and trade in wild animals in 1978.

More recently, there has been a significant growth in 'conservancies', or non-state protected areas, in Kenya. The earliest conservancies were founded in the 1970s on private land and community land, in places like Solio Ranch, Taita Hills, Kimana and Ol Chorro Oiroua. By the 1990s, this model of community conservation was actively being promoted by conservation NGOs, with the support of overseas funding from donors such as the United States Agency for International Development (King et al., 2015). Subsequently, the number of conservancies, the area they cover and the number of wild animals they help to conserve, has grown dramatically (King et al., 2015). By the end of 2015, there were 178 conservancies in Kenya: 120 established and 58 emerging (Bedelian, 2014). In 2013, the Kenyan government formally recognised

conservancies, and set out guidelines for registration, as well as the requirements and benefits this entailed, embodied in the Wildlife Conservation and Management Act (Government of Kenya, 2013).

Although there is some evidence that conservancies can result in social benefits (Glew et al., 2010), empirical research in the Maasai Mara and Northern Kenya also show that conservancies often result in social inequality, exclusion and resentment (Bedelian, 2014; Cavanagh et al., 2020; Mkutu, 2020; Pas, 2018).

In this article, we discuss why an alternative model of community conservation, based on local governance institutions in the South Rift, appears to be resulting in positive outcomes. We elaborate on three key insights: i) the importance of historical context and ownership of the conservation areas; ii) evidence about how these conservation areas do not compromise livelihoods; and iii) the role of adaptive governance.

## Research approach: social-ecological systems and mixed methods

The study employed the concept of social-ecological systems which can be used as an analytical structure to study local natural resource management systems by "match[ing] the dynamics of institutions with the dynamics of ecosystems for mutual social-ecological resilience and improved performance" (Berkes & Folk, 1998, p. 4). This links two different streams of resource management theory: i) systems thinking and adaptive management; and ii) people-oriented institutions and property rights. These streams emphasise the importance of coupled and interdependent social and ecological dimensions (Manzano et al., 2021).

Such an approach has usefully highlighted the most significant elements that support self-organisation to sustainably manage resources. These include: i) clear devolved rights over resource management; ii) institutions functioning at the correct scales; iii) governance mechanisms linked across scales; iv) benefits obtained from managing resources; and v) strong social norms (Ostrom, 2009).

The interpretation of our findings was also informed by the concept of 'just conservation', where local perceptions of social justice mediate conservation outcomes (Martin, 2017), and can determine how legitimate an intervention is, such as the creation of a conservancy, and therefore the extent to which local support for the intervention will be received. Inclusive approaches involve appropriate access to resources, equitable distribution of costs and benefits, participatory decision-making and respect for local cultures and knowledges.

We applied a mixed-methods approach, collecting both qualitative and quantitative data. A household survey was conducted using a stratified random sample of 562 out of 2,908 households across four strata. This resulted in sampling weights between 3.3 and 6.5. All data were analysed using design-based inference in ***R***, using the package survey (Lumley, 2019). Semi-structured interviews were conducted, transcribed and analysed with the following groups:

| | |
|---|---|
| > Current leadership, including women, men, elders, youth, formal, informal, elected and appointed by government | 28 |
| > Past leadership | 8 |
| > Conservation or tourism stakeholders | 9 |
| > Elders (for local oral histories) | 7 |
| > Farm or herd owners | 3 |

We also conducted analyses of land cover change and vegetation productivity over time using satellite remote sensing. Finally, we also conducted document analysis, research diary reviews, and used information from research reports.

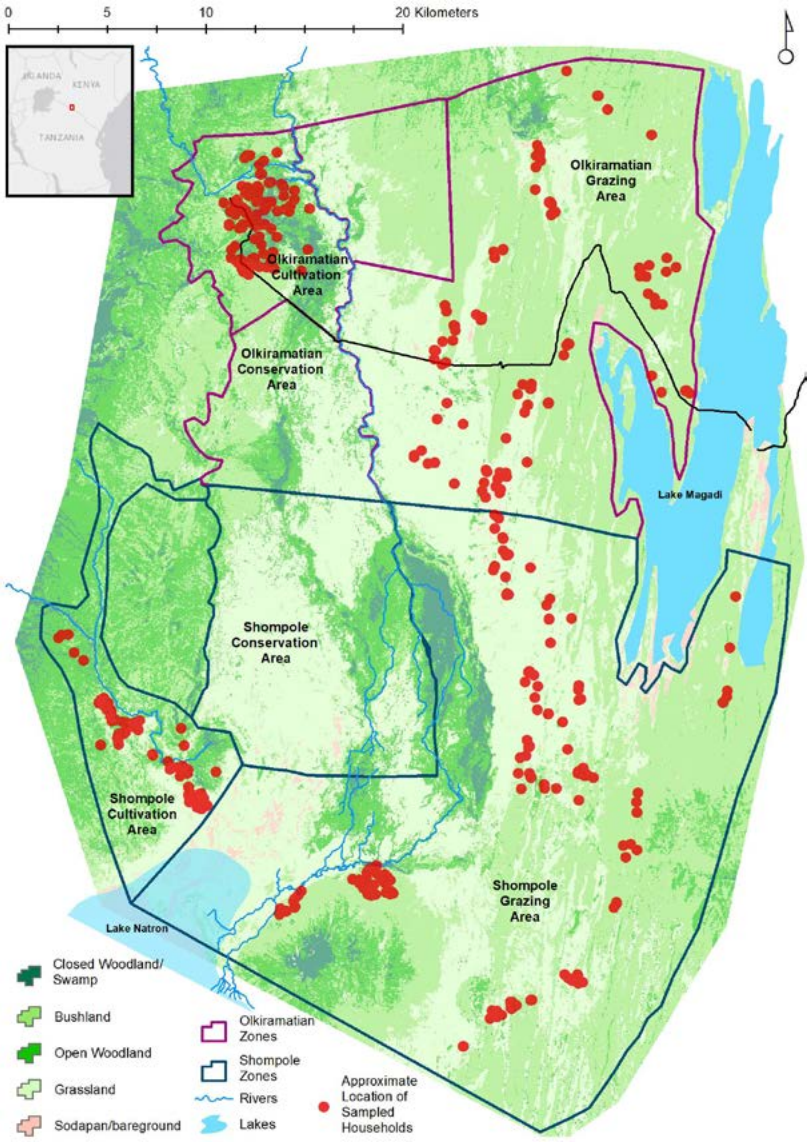



**Figure 6.1**
Approximate locations of the surveyed households with land-use zones, overlaid on a 2019 land cover classification. The map inset shows the location of the study area in Kenya and East Africa.

Source: Brehony (2020, p. 35), based on ESRI, USGS, NOAA, HERE, Garmin, openstreet map contributors, GIS-user community.

## Kenya's South Rift

Kenya's South Rift is an area that forms a number of community lands in the southern part of Kenya's portion of the East African Rift, close to the border with the United Republic of Tanzania (Figure 6.1). In this article, we refer in particular to two community lands in the South Rift – Olkiramatian and Shompole – both of which use part of their lands as 'conservation areas'. Although not legally registered as conservancies under the Wildlife Conservation and Management Act (Government of Kenya, 2013), these areas are managed for conservation, livestock grazing and eco-tourism. Neighbouring community lands do not currently have conservation areas, but by early 2023, some areas had started the process of including them in their land management.

The South Rift has followed a different trajectory to much of East Africa's rangelands, where land is owned and managed by people whose dominant livelihood source is pastoralism. Most are from the Loodokilani section of Maasai. Many households have diversified livelihoods, which include cultivation, wage labour or small enterprises. Livestock populations in the area are around 52–59 sheep and goats per km$^2$, and 6–16 cattle per km$^2$ (Russell et al., 2018). There are open rangeland grazing areas, as well as designated agro-ecological cultivation zones, where local inhabitants, regional immigrants and seasonal workers grow irrigated and rain-fed food and cash crops. The area has a perennial river, the Ewaso Nyiro (south), which flows into the Ewaso Nyiro (or Shompole) swamp, before ending up in Lake Natron. There are also four other smaller, permanent rivers flowing off the Rift Valley escarpment (Figure 6.1), including a number of natural and man-made dams throughout the area, and three water pipes that carry water to various waterpoints across the landscape. The unique geological landscape etched with rivers has created a mosaic of habitats, from arid soda flats in the hot dry lower elevations to open grasslands, savanna, thick bushland, mature woodland (mostly *Acacia tortilis*) and even montane forest at higher elevations (Figure 6.1).

There are no government protected areas in the South Rift, and the area is not on Kenya's 'tourist circuit'. Yet for a semi-arid rangeland, the ecosystem supports high densities of wild ungulates comparable with state-protected areas in southern Kenya and northern Tanzania, such as:

- Grant's gazelle *(Nanger granti*), at 6–7 per km$^2$
- Burchell's zebra (*Equus quagga*), at 7–10 per km$^2$
- wildebeest (*Connochaetes taurinus*), at 3–5 per km$^2$
- impala (*Aepyceros melampus*), at 2–4 per km$^2$
- giraffe (*Giraffa camelopardalis tippelskirchi*), at approximately 1 per km$^2$,

as well as several hundred elephants (*Loxodonta africana*) (Russell et al., 2018). The area also supports 22 species of carnivores, with densities of lions (*Panthera leo*) – 13 adult lions per 100 km$^2$ – comparable or greater than state-protected areas in southern Kenya and northern Tanzania (Schuette, 2012). Indeed, counts of large wild animals in

1977–2019 show that many wild animals in Olkiramatian and Shompole are increasing in number, while others are decreasing less rapidly than the severe declines seen across Kenya (Ogutu et al., 2016).

Satellite remote-sensing shows that over the past four decades, there have been cycles of land cover change in Olkiramatian and Shompole. The main drivers of change appear to be caused by the shifting of the Ewaso Nyiro River and areas that have been cleared for cultivation. Furthermore, patterns of herbaceous species composition and community structure vary between different land management areas (wet and dry season grazing areas). The gradients of variation in forage biomass match predictions associated with a gradient of lower biomass and higher nutrition in the wet season grazing area, to greater biomass and lower nutrition in the dry season grazing area. This variation in grazing resources and habitat heterogeneity play an important role in maintaining the abundance, diversity and resilience of both livestock and wild animals. The next sections present findings which provide evidence as to why community conservation in the South Rift is resulting in these positive conservation outcomes.

## Historical context matters: ownership of conservation areas

Area-based (spatial) conservation interventions in Kenya began during the early colonial period with the Kenyan administration's Game Department setting aside the Ukamba Game Reserve in 1899 and Southern Game Reserve in 1910 (Adams, 2004). Neither of these reserves included the west side of the Ewaso Nyiro River, which today forms the conservation areas of the South Rift. In fact, the South Rift just about escaped the wave of gazettements of the colonial and early independence eras. This was despite hunters, like Captain Keith Caldwell, describing the area as "one of the few remaining good shooting areas of Kenya" (Caldwell, 1950, p. 16).

Therefore, based on interviews and aerial photography from 1961, the areas that form the conservation areas today (Figure 6.1) have for at least 80 years remained as late dry season and drought-grazing refuges. One elder remembered that when he was young, the area was "protected as a place with many trees, and various herbs, so that they could hold *ilpuli* (traditional meat-feasting ceremonies that require several traditional herbs), but during severe droughts people would move in".

In 1989, the Olkiramatian Group Ranch[1] decided to formalise what had become an informal distinction in land use between a cultivation area near the escarpment: a year-round grazing area to the east of the Ewaso Nyiro; and a dry season grazing refuge to the west of the Ewaso Nyiro. This distinction appears to have been motivated by the presence of high tsetse fly densities in the area to the west of the river during the wet season, and the presence of year-round streams for irrigation in the cultivation areas along the base of the escarpment (Figure 6.1).

By 1991, at The Second Conference on the Future of Maasai Pastoralists in Kajiado District, a prominent Maasai discussed what they termed the 'Olkiramatian concept' – where communal ranches were zoned into various economic units, instead of

1 Group ranches were legal land entities established in 1968 for community members to hold a communal land title These were replaced by community lands since 2016.

subdividing into individual titles (Rutten, 1992, p. 459). In the same year, the Olkiramatian Group Ranch Management Committee (group ranch members elected a committee responsible for management of the land, assets and finances), stated that they wanted to begin a number of projects, including an eco-tourism project which charged tourists who came to camp or view the abundant wild animals. Olkiramatian Group Ranch combined with the neighbouring Shompole Group Ranch (Figure 6.1) to form the Olkiramatian and Shompole Community Development Project (ACC, 1994).

Although, the project came to a halt in June 1993 due to conflicts with a tsetse research project, it inspired the Shompole Group Ranch to set up a community project, offering campsites, maps, tour guides and food to visitors who paid entry and camping fees. Then with the help of the African Conservation Centre (ACC), a conservation non-governmental organisation based in Nairobi, Kenya, the Shompole Group Ranch, partnered with a tourism investor to set up an eco-tourism lodge in the area which would be surrounded by a 'conservation area'. According to a number of sources, this decision was only agreed after numerous meetings, including the Group Ranch Management Committee, administrative chiefs and *ilaiguenak* (spokesmen of an age set), as well as exchange visits. Furthermore, results from the household survey showed that with hindsight, most people – 96% in Olkiramatian and 76% in Shompole – remember they had agreed with the decision.

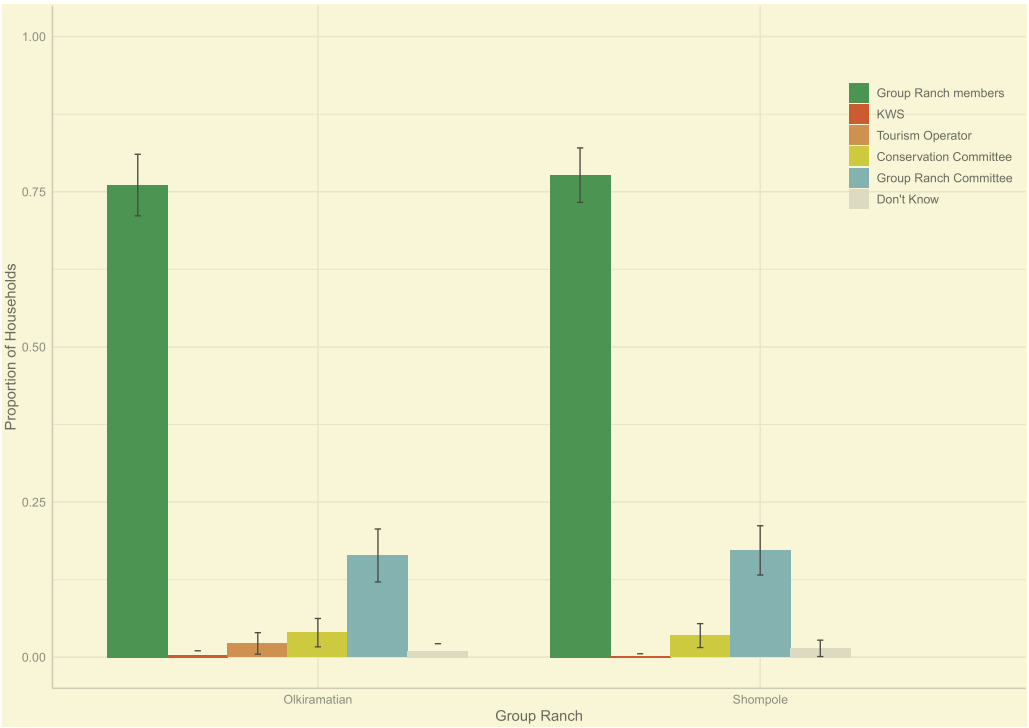
The resulting 'Shompole Lodge' opened in 2001, and with the help of ACC, the Shompole Group Ranch secured funding from the European Union's Biodiversity Conservation Programme to build an entirely community-owned eco-tourism development project, purchase vehicles, hire 20 game scouts and a conservation manager, and help to build infrastructure in the area. From 2001 to 2005, tourist fees from Shompole Lodge resulted in KES 4.5 million (US$ 56,000) being paid to the group ranch. The Olkiramatian Group Ranch saw this success and, based on the zonation they had agreed upon in 1989, their Management Committee decided to 'brand' the area to the west of the Ewaso Nyiro River as their own conservation area. They were likewise helped by ACC to find eco-tourism investors and build a lodge.

Ultimately, neither partnership between Shompole and Olkiramatian nor their respective tourism investors lasted. However, both Shompole and Olkiramatian currently have agreements with eco-tourism lodge operators. They learned from mistakes made with initial partnerships and current agreements include clauses that guarantee that the conservation areas are used as dry season grazing refuges, as they have been for at least the lifetime of the oldest members of society living in the South Rift.

Overall, throughout the colonial and independence periods, the South Rift remained off the radar of state-centred protected areas which are the principal target for criticism about unjust conservation (Brockington et al., 2008). This study suggests that the acceptance of conservation areas with seasonal access to grazing during the dry season did little to affect people's access to resources for their principal livelihoods. Although the ideas to initiate conservation areas emerged in a complex manner with both external and internal influences, the decision to have conservation areas was on the terms of the community. People were never forcibly moved out of any area for the sake of conservation, and survey results show that the conservation areas are

**Figure 6.2**
Household survey responses when asked 'who owns the conservation area? Of the total of 562 surveyed out of 2,908 households: 250 are from Olkiramatian and 312 are from Shompole.
Error bars denote 95% confidence intervals.

Source: Brehony (2020)




understood by the vast majority of people to be owned by all group ranch members (Figure 6.2). This is crucially different from many other areas focused on conservation in East Africa and in a number of other pastoralist areas (Manzano et al., 2021).

Similarly, as mentioned earlier, most of the registered group ranch members supported the decision to set up the conservation areas at the time they were set up, and 85% in Olkiramatian and 94% in Shompole supported the conservation area in 2018. This is likely a consequence of the way in which ideas about conservation were formed within each community, and even more importantly, the fact that people continue to use the conservation areas that represent today's community conservation areas as dry grazing refuges.

Nevertheless, it is possible that even this form of conservation, as in other cases, could be a case of "disciplining local people to exclude themselves from their own land" (Igoe & Croucher, 2007, p. 538), particularly when tied to eco-tourism territorialities (Bluwstein, 2017). However, the reality that the conservation areas continue to be used as dry season grazing refuges suggests that the South Rift is, at the moment, a different case.

## Conservation that does not compromise livelihoods

This section addresses the ways conservation areas of the South Rift represent a more just or equitable form of conservation, where the focus remains on local livelihoods, both in terms of supporting traditional practices and cultural identity, and their ability to generate material benefits and provide a good quality of life. The so-called conservation areas primarily continue to be used as dry season grazing refuges as well as, secondarily, spaces for eco-tourism.

Research interviews and surveys which took place over a drought period documented the ways in which the conservation areas were critical to local livelihoods over this period, both because they were treated as dry season grazing refuges, and to a lesser extent, because community revenue and jobs from eco-tourism were unaffected by drought.

As mentioned earlier, the livelihoods of many people in the South Rift are bound to the welfare of their livestock and therefore the availability of pasture and water. Western et al. (2020) have described how conservation in this sense is primarily about ensuring rangelands productivity and resilience for livestock and, when tolerated, wild animals. The conservation areas in the South Rift to some extent follow this form, as they are embedded in a working landscape, far removed from the notions of full spatial separation between people and wildlife. To this extent, they act as essential dry season grazing reserves.

One interviewee recalls how important the area was over a severe drought in 2009:

> *... that drought was very long ... [but] the conservation area served as a conservation area for wild animals, and at the same time as a grazing reserve. You find wild animals. There are some places where there is tall grass, and even the wild animals are afraid to go because they might be hunted by lions. So these areas remain with a lot of grass, and they helped. Even the cows from [neighbours] when they moved here, they grazed in the conservation area. It was in our agreement [with the eco-tourism lodge operator] that during the dry season livestock are allowed, following our grazing patterns in the conservation area. This helped a lot.*

Even outsiders, like the Kenya Wildlife Service Warden responsible for the outpost in the South Rift, noted that the "conservation area is very important in droughts because people set aside that area for grazing".

The introduction of conservation areas could have resulted in losing this critical access for livestock. Instead, the functioning of conservation and eco-tourism imply that people use their landscapes in much the same way as they did before some portions of the land were referred to as 'conservation areas'. Livestock and wild animals use spatially and temporally variable resources across the landscape (Connolly et al., 2021), with livestock using the conservation area in periods of drought (Russell et al., 2018) and during cultivation in areas suitable for irrigated cultivation. In this working landscape, conservation becomes an additional form of land management, carried out within the context of local knowledge and practices, and is secondary to culturally important livelihoods and land uses (Western et al., 2020).

To put this in perspective, based on field research, livestock sales at weekly markets generated approximately US$ 150,000. This is not much less than the contribution of all eco-tourism lodges over a whole year (~US$ 173,000 in 2018). Therefore, to maximise rural livelihood incomes available to people living in the South Rift, eco-tourism must not undermine other critical livelihoods, including pastoralism, and irrigated cultivation outside of grazing areas.

Nevertheless, the revenue and other opportunities afforded by eco-tourism can also be important. Eco-tourism lodges and safaris created a modest number of full-time employment opportunities and occasional short-term employment opportunities. The lodges also pay annual lease fees, bed night fees per guest per night, and conservation fees per guest per night. Our research shows that this revenue was used in four main ways: i) education bursaries; ii) support towards health costs or medical emergencies; iii) building and maintaining water pipelines; and iv) building and maintaining communal buildings like clinics and classrooms. Although there were some discrepancies in the precise amounts that were used in each of these categories based on our own calculations, in general all categories received eco-tourism revenue in a relatively transparent manner.

Furthermore, the availability and timing of the revenue was also critically important. According to one eco-tourism lodge operator, when asked about the impact of the 2017 drought on the revenue generated through visits from tourists, they said; "the drought had no impact at all". Yet, many other livelihoods are severely affected, and items which require money, like school fees, quickly become unaffordable to some families. One interviewee described how they noticed that school drop-out rates increase during droughts, and that sometimes "those children won't go back, that is the end of their education". However, school bursaries, or having one member of your extended family employed, were reported as being very helpful, as one interviewee summarised:

> *... drought will be there even if the conservation [area] is there or not, but it makes things better, because some people are not as dependent on livestock. If we all just depended on livestock, I think we would have suffered a lot. But we have the conservation area and the money we get from it.*

Nevertheless, although eco-tourism may be unaffected by events, such as droughts, they can be disproportionally affected by other world events such as terrorist attacks, even in distant places, or global health pandemics, like COVID-19, can severely reduce visitor numbers (Lindsey et al., 2020).

## Adaptive governance

In this section we describe the third key component to conservation in the South Rift, adaptive governance that maintains the social-ecological system. To understand responses to moments of crisis and conflict, we examined the governance, rules and enforcement of the conservation areas. In particular, we focussed on rules about where settlement and grazing were permitted, and rules about the killing of wild animals.

### Institutions of governance in the South Rift

There are a number of interacting institutions of governance operating in the South Rift, from the traditional *ilaiguanani* (spokesmen of an age set) and *ilgilat* (clans), to the relics of the colonial administrative chiefs, along with the Management Committee (since 2016, this is now the Community Land Management Committee; see photo next page) and elected representatives to the national parliament and the regional county assembly. Of these institutions, it was clear that any land issues (including land use,


Announcing the 2018 Olkiramatian Management Committee election results (left) and the front page of the winning committee's manifesto (right).

Source: Courtesy of Peadar Brehony

such as conservation areas) were vested in the elected Management Committee (see photo above) as they legally hold the land and assets of the community on behalf of members (Rutten, 1992).

However, the elected Management Committee understand that their decisions cannot be made without other leaders: "I myself cannot make my own decision unless I consult all the leaders, I have to consult them and we pass it together". Many people saw collaboration as a way to solve problems beyond their capabilities, or outside their remit: "when I'm not in a position to handle a matter, I collaborate with others, if it's a dispute, if it's about resource sharing, if it's about an age-group issue".

People also recognise the strengths of the different institutions: "each is different, the Management Committee, the *olaiguenani* (spokesman of an age set), *nkraoni* (administrative chiefs) … all of them are different, each one has their own worth". Both Shompole and Olkiramatian have constitutions, and in Olkiramatian they have a defined, collaborative leadership forum which includes the Management Committee, the *ilaiguenak*, administrative chiefs and a member of the County Assembly.

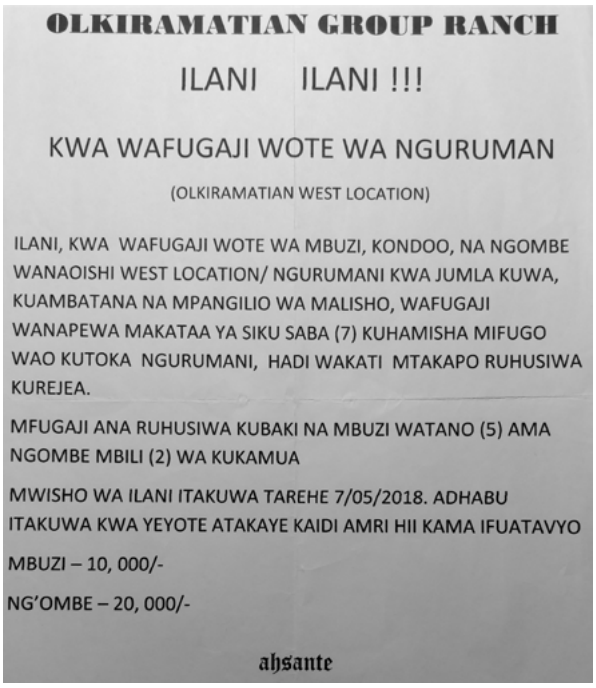
These institutions of governance draw from their different sources of authority when collaborating, or displaying authority, in messy and contested ways. Therefore, what emerges are dynamic, polycentric hybrids of the modern and traditional, the formal and informal, where institutions form a mosaic of interconnected arrangements. The governance institutions of the past might be waning in influence, but they have not disappeared, and modern powerful institutions like the Community Land Management Committee have not superceded others. Rather, together, they are a reflection of the complexity of modernity embedded in social history – a governance which combines moral economy, local practices, and formal institutions.

Nevertheless, within these forms of governance, women were often excluded. Although they do partake in decision-making discussions, women feel they are only listened to when they agree with what is being said: "we cannot speak about corruption, but if we talk about the good things people agree with us". These findings are unfortunately commonplace in research on gender and participation in governance in a development context (Cornwall, 2003).

## Adaptive governance, rules and enforcement

Moments of crisis, or critical junctures in natural resource management, such as a drought, can reveal how (or even whether), institutions of governance provide a response. These processes are retrieved through empirical examples about rules and enforcement of settlement locations and access to grazing, particularly as they relate to the conservation areas.

Not long after the introduction of the conservation areas (around 2001 for Shompole and 2002 for Olkiramatian), local leaders repeatedly made it clear to outside stakeholders involved in conservation (like the African Conservation Centre), that they wanted to make decisions themselves about the rules in the conservation areas (ACC, 2003). They emphasised that these areas would continue to be used as dry season grazing refuges, and that the presence of eco-tourism would not modify this function. Their livestock needed grass in the dry season to survive, and as one conservation committee member describes "those white people [tourists] and those investors [lodge operators] who bring them, they don't eat grass".


OLKIRAMATIAN GROUP RANCH

ILANI ILANI !!!

KWA WAFUGAJI WOTE WA NGURUMAN

(OLKIRAMATIAN WEST LOCATION)

ILANI, KWA WAFUGAJI WOTE WA MBUZI, KONDOO, NA NGOMBE WANAOISHI WEST LOCATION/ NGURUMANI KWA JUMLA KUWA, KUAMBATANA NA MPANGILIO WA MALISHO, WAFUGAJI WANAPEWA MAKATAA YA SIKU SABA (7) KUHAMISHA MIFUGO WAO KUTOKA NGURUMANI, HADI WAKATI MTAKAPO RUHUSIWA KUREJEA.

MFUGAJI ANA RUHUSIWA KUBAKI NA MBUZI WATANO (5) AMA NGOMBE MBILI (2) WA KUKAMUA

MWISHO WA ILANI ITAKUWA TAREHE 7/05/2018. ADHABU ITAKUWA KWA YEYOTE ATAKAYE KAIDI AMRI HII KAMA IFUATAVYO

MBUZI – 10, 000/-

NG'OMBE – 20, 000/-

ahsante

A poster placed throughout Nguruman to announce a decision by the leadership forum that goats, sheep and cows were to be removed from Nguruman (in this case before 7 May 2018). Those failing to do so were subject to fines of KES 10,000 for goats and sheep, and KES 20,000 for cows.

Source: Courtesy of Peadar Brehony

At the same time, some local leaders also acknowledged that the presence of cows in the conservation area when tourists are out looking for wild animals can lead to conflict with the eco-tourism lodge operator. People have therefore occasionally compromised to suit the eco-tourism lodges, with a verbal agreement: "if they [eco-tourism lodge operator] have tourists, they tell us, and we move livestock to the southern side [where tourists don't go]". Ultimately however, the community retained decision making about where they will graze, and when they will move into the conservation area.

The rules about where people and their livestock can settle to access grazing are constantly changing depending on the ecological condition of the rangelands. These are communicated in a number of different ways, from word of mouth to printed posters in the main market towns (see poster above). When people break the rules, there is generally a graduation of sanctions. This is well captured in the following story from an *olaiguenani* (spokesman of an age set), about what would happen to someone who refused to move when settlement in an area was closed [translation provided below]:

> *[We would say] 'You! This is not right. Move. Because, we have agreed and you have not followed.' So that is how we manage those people so that they don't break the rules. [if they still don't move] we are called with the ilpayiani [elders] to solve it … we go straight for the cows of that enkang' [homestead], and … are told to pack up and move … it is members of the community who have agreed that we should move,*

> *it is not just you who is from the community. You tell us, you won't move, or you will move. If he still says I won't move, you close the enkang' and it is cursed … if the cows are not finished [by the curse], a child will die… Secondly, if they still stay, we call the Chairman [of the Management Committee] … the chiefs, and police are brought. The person will be arrested … and he will be fined a big steer.*

There was also a case during field work where three households were forcibly moved in cars (at their own cost) when they attempted to settle in an area that was deemed closed. In May 2018, the first author of this case study helped a disgruntled herd owner and his family who were hurriedly moving their herd of cows and an old pickup after disregarding the notice (see poster previous page) and being fined.

## Rules about the treatment of wild animals

As well as grazing management, both Olkiramatian and Shompole have also altered some practices when it comes to wild animals, in the name of conservation, such as "reducing traditional lion hunts, not allowing herders to use dogs for hunting and chasing animals, and generally trying to more actively protect the wild animals, than possibly they did before". However, once more, these rules have grey areas. For instance, although lion killings are 'reduced', they do still occur.

When it comes to enforcement of the treatment of wild animals in the area, this is primarily undertaken by community scouts, with occasional support from the Kenya Wildlife Service Rangers stationed in the area. Neumann (1998) discusses the ways in which there are often tensions between those breaking rules, and those who sanction. This is no different in the South Rift. During field work, the first author of this case study experienced cases where local community scouts were aware that a member of their community was responsible for the illegal killing a Burchell's zebra (*Equus quagga*). However, instead of reporting them to law enforcement, the scouts would let them know that they were aware of their activities and advise them to stop. This kind of humility and flexibility is demonstrated in the following discussion with a member of the Management Subcommittee:

> *… if I met this person [who has illegally killed a wild animal], I would explain to them: 'This is bad. The community has sat down and created a Conservation Area, and we get money from the Conservation. Even your family are getting something.' That is a better way to explain, instead of just having them arrested, for me that doesn't help. If you try to tell someone who doesn't have any food: 'Don't go out hunting wild animals!', and you are unable to give them food, how do you expect them to stay as a human being? … Instead, if there is even a little casual job, they will be considered … and then tell them: 'This money is not from selling a goat, or a cow, it is from those wild animals that you want to kill!'*

It appears therefore, that rules, their enforcement, and adaptive governance serve to navigate everyday issues of community members, with the ultimate goal of maintaining a desirable social-ecological system. This can, and does, include using the conservation areas for grazing as certain times, or overlooking occasional killing of wild animals.

## Conclusions

Research from East Africa's rangelands suggests that the benefits from conservation are greater when people can choose to engage in conservation or not, when they have strong rights to tenure, when state policies and practices allow local people to fully benefit, and when this does not come at the expense of sacrificing other livelihoods. Based on the findings from this research, it is clear that the vast majority of people in Olkiramatian and Shompole believe that ultimately, they maintain ownership of the conservation areas. At any rate, the conservation areas have not altered the land-use strategies that were set out before conservation areas were set up. Maintaining access to the conservation areas as dry season grazing refuges was clearly set out as an important factor in discussions about the conservation areas from the start.

Wildlife, including large wild animals, has always existed in this social-ecological system, but given that there was no pressure to set up top-down protected areas, there was no pressure either for communities to concede to formal conservation practice. Instead, conservation as a land use has been made to fit within the management systems that play many other roles within the social-ecological system.

In Kenya's Southern Rift Valley, pastoralists share their lands with wildlife.

Photo: Courtesy of Peadar Brehony

The opportunities afforded by conservation and eco-tourism were to be additional and secondary to traditional land uses and culturally important livelihoods such as pastoralism and irrigated cultivation. This is achieved without the same level of restrictions to resource access encountered in many other community-based conservation models, and without a historical legacy of people being forcefully removed from the conservation areas.

Finally, the control and management of natural resources remains in the hands of governance institutions which are considered legitimate, participatory and effective. These are actively maintaining the existing social-ecological systems through flexibility and humility.

Certain events remind us that we must not be naïve. In June 2022, in Loliondo, Tanzania, only 60 km away from the South Rift, an area of approximately 1,500 square kilometres that was managed by local pastoralist communities, was upgraded to the status of a Game Reserve, where grazing was not permitted. Subsequently,

there were reports of physical violence and other human rights violations against community members who challenged this decision. Land dispossession under the guise of conservation continues to occur, regardless of the increasingly progressive standards for equity and rights espoused by international conservation organisations and enshrined in international conservation policies. Unfortunately, the distinct possibility that a successful social-ecological system, managed and used by local people, can be taken away from them keeps on happening today. Where community-based conservation has failed is often not because of its basic conceptual premise, but because it is manipulated for the means and goals of powerful actors (Brockington et al., 2008).

In some ways, the greatest danger to conservation in the South Rift is its 'success'. For instance, in the South Rift, potential future changes could result in tourism operators colluding with corrupt leadership to appropriate communal land solely for tourism, as shown in Tanzanian Maasailand (Bluwstein, 2017). Or, the national government could declare that because of the high density of wild animals, this area should be set aside as a protected area, such as a national park, for the economic or ecological benefit of the nation.

The future is yet to be determined, and there is an opportunity to recognise and support alternative futures. We presented a reality which could avoid the historical legacy of exclusion and dispossession. A form of community conservation, embedded in a working landscape, far removed from the notions of spatial separation between people and wildlife. Indeed, this form of conservation, founded on rangeland livelihoods and institutions (Western et al., 2020), has greater potential for the scale and connectivity over large landscapes that will be necessary for us to sustain desirable social-ecological systems into the future.

Research has repeatedly demonstrated that local communities are effective stewards of critically important social-ecological systems (Dawson et al., 2021; Garnett et al., 2018). Yet, the demonstrable scientific research appears to be insufficient to safeguard community rights. Instead, it is more likely that the defence of local community's rights to own and manage land and wildlife will be won or lost in the theatre of power and politics.

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# The role of shared vision and values in effective governance for natural resource conservation in a Yucatec Maya community

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## Abstract

This article reviews the history of changes related to governance of the forest in Noh Bec, a Yucatec Maya community in the state of Quintana Roo, Mexico. Noh Bec is acknowledged internationally for its achievements in sustainable management of their forest through their customary '*ejido*' institutions. The case study describes how the conjunction of vision and values, properly negotiated amongst all stakeholders, including government officials, representatives of non-governmental organisations, international organisations promoting and funding programmes for the conservation of forest, as well as local leaders and diverse community members, have played a major role in its success. The shared vision and values established through the *ejido* also created a resilient social fabric that has endured challenging times in terms of natural disasters, such as hurricanes, and the impacts of Covid-19 on the economy

**Key words**: Noh Bec; governance; natural resources; sustainable management

## Introduction

Many communities in the Yucatán Peninsula, Mexico, especially where Indigenous peoples are a relatively high proportion of the population, are debating policies, strategies and actions to balance needs for economic development, using and at the same time conserving the natural resources available. In Quintana Roo, the local and Indigenous communities are now multicultural, which means that the Yucatec Maya are sharing their territory with people from other cultures, a much different situation compared to more than 20 years ago. In 1974, when the Mexican federal government established a programme encouraging migration from other states, Quintana Roo became a state, one of the three in the Yucatan Peninsula (Pelas, 2011). At that time, the land tenure for Indigenous and migrant communities in Quintana Roo was based on the concept of '*ejido*', a designated/agreed area of land that is communally owned, but which can be individually used and yet not considered to be private property (Perramond, 2008).

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The tropical forest in Quintana Roo was the main natural resource for *ejidos*. In the 1970s and 1980s, the human population in each *ejido* was small compared to the size of the allocated land. With government help to organise their land use, the *ejidos* oversaw large areas of forest. However, over time, the increasing number of *ejidatarios* (registered members of the *ejidos*) exercised greater pressure on the land and the natural resources (Miteva et al., 2019). In 1992, land reform modified the basis of the land tenure in *ejidos* in Mexico, creating conditions for privatisation (Perramond, 2008). These reforms represented important drivers of change in the governance and sustainability of Mexico's forests, as communities, which were also influenced by the state and commercial actors, were led to decide whether to reinforce Indigenous and local customary values, knowledge, and institutions, or to depart from the traditional *ejido* system.

In the process of reaching agreements on the management of their natural resources, the communities using *ejido* land had to consider multiple factors: increasing population; pressure of economic development; changes in policies; internal power struggles; and, with the presence of newcomers in the early 1970s, the multicultural context. Governance in *ejidos*, thus, became a great challenge not only in the sustainable use of natural resources, but also in maintaining social peace and justice. Decision making, and thus governance, in communities must therefore consider its multicultural composition. In spite of these challenges, most *ejidos* in Quintana Roo have elected to maintain collective rights to their land, although many are still struggling to develop an effective system to conserve their natural resources and maintain a decent livelihood.

This paper presents a case study of Noh Bec, an *ejido* in Quintana Roo (Figure 7.1), which has been able to achieve remarkable success in recent years, balancing livelihoods with sound management of their forest. Taking advantage of the customary and communal *ejido* system, the communities were able to overcome difficulties and design a governance system to foster their success in the face of contemporary pressures.

Governance plays a critical role in the conservation of natural resources (Borrini-Feyerabend & Hill, 2015). Positive influences on the success of conservation programmes in common property resources, including *ejidos*, have been identified as being communities that had strong community cohesion, organisation and were less marginalised (Bunge-Vivier & Martínez Ballesté, 2017). Effective governance of natural resources also requires participation in decision making by Indigenous peoples and local communities, and the recognition of the central role of their customary institutions such as communal tenure systems like *ejidos* (Dawson et al., 2021). These principles are also contained in major international conservation policies, such as the Kunming-Montreal Global Biodiversity Framework. To foster both equitable and effective governance of natural resources, it is important to share the experiences that multicultural communities have had regarding successful conservation of their forests.

The Noh Bec *ejido* has gone through different phases of governance over time, sometimes relinquishing control to external companies and engaging in unsustainable practices, but has ultimately learned from those experiences and prioritised the conservation of its forests at the same time as the well-being and resilience of the multicultural community it has become. This has been achieved through the

development of a cohesive future vision and the revitalisation of the *ejido* system, while networking with other similar *ejidos* and supportive national and international organisations. The successes have been evidenced through improved forest quality and biodiversity within their territory, which has been recognised through national and international awards, as described further in the article.

## Organisation and governance of *ejidos*

The Mexican Agrarian Legislation (Government of Mexico, 2018) directs the governance and organisation of the *ejidos*. Each *ejido* is required to elect a group of three representatives called '*Comisariado Ejidal*': one representative serves as president of the *Comisariado*; another holds the position of secretary; and a third manages the finances (Figure 7.1). Each representative has a substitute. The role of the *Comisariado Ejidal* is to represent the *ejido* and to carry out the decisions taken in the general assembly. Another body for governance, elected at the same time, is called "*Consejo de Vigilancia*", which oversees the decisions and work of the *Comisariado*, making sure it follows the legal standards and procedures. The *Consejo de Vigilancia* is also comprised of a president, secretary, and treasurer, each with a substitute. Both the *Comisariado* and the *Consejo de Vigilancia* serve three-year terms and cannot be re-elected immediately after their tenure. Women can be *ejidatarias* and elected to any of the positions.

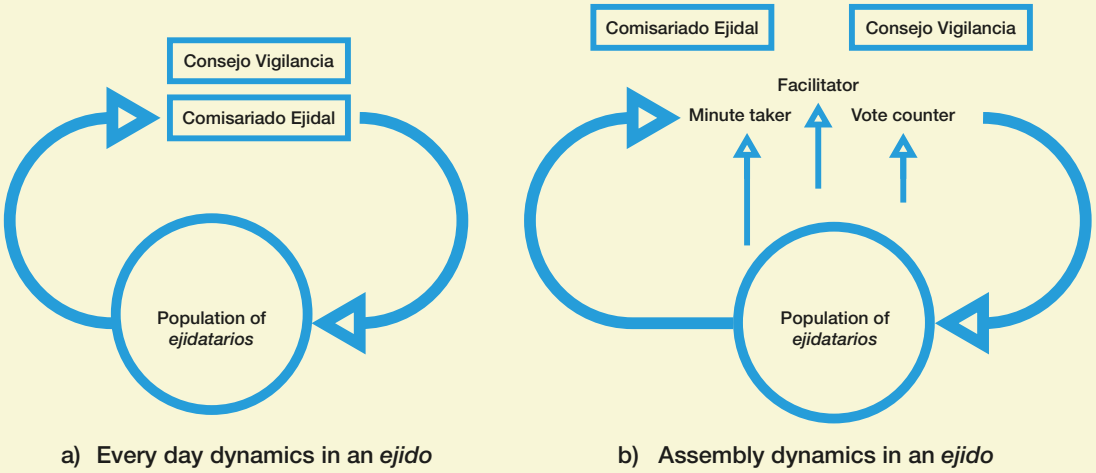



**Figure 7.1** Graphic representation of the dynamics of the *ejido*

**a)** For the exchange of information and finding solution of problems, the *Comisariado Ejidal* works facilitating the process of decision making.
**b)** During *ejido* assemblies, *ejidatarios* take control of the process of decision making. Neither the *Comisariado Ejidal* nor the *Consejo de Vigilancia* are considered authorities. After the decisions are made, these two organisations implement the mandate of the assembly.

The members of the *Comisariado Ejidal* are representatives of the *ejido* that address day-to-day issues, which include interactions between the *Comisariado* and the *ejidatarios*, exchange of information, discussion of issues, approaching authorities to solve problems in the community, such as water, electricity, streets, and others (Figure 7.1a). Each *ejido* holds a general assembly every month, the '*asamblea ejidal*' (Figure 7.1b). At the beginning of the assembly, as a first item on the agenda, the *Comisariado* facilitates the election of at least four persons to carry out specific roles during the assembly: one person who will facilitate/moderate the meeting; another

will be in charge of taking the minutes of the meeting; and at least two others who will be responsible for counting votes. The people elected at each assembly are regular *ejidatarios*, and not members of the *Comisariado* or the *Consejo de Vigilancia*. Once these assembly elections are held, the officers of the *Comisariado Ejidal* and the *Consejo de Vigilancia* then participate in the meeting as any other (individual) *ejidatario*, with no special authority, but with the right to speak and vote.

All matters relating to the daily life in the *ejido* are addressed during the monthly assemblies. These include, among others, permissions to carry out the following activities: harvest lumber; farm a piece of land; mine resources, such as stones or soil; accept new *ejidatarios*; divide parcels; designate parcels to *ejidatarios* and their families; submit projects to benefit the *ejido*; sign agreements with government or non-governmental organisations; and other matters. Each item is discussed and voted on. A clear majority is required to approve any initiative. After the decisions are made, the *Comisariado Ejidal* implements the mandate of the assembly and the *Consejo de Vigilancia* oversees that the mandate is implemented correctly.

An *ejido* is also a community where both *ejidatarios* and non-*ejidatarios* live. When the *ejido* system began, only heads of families, men, or women, were officially recognised as *ejidatarios*. In the course of time, the *ejidos* expanded the initial number of *ejidatarios*, implementing an official process for anyone who would like to become an *ejidatario/a*, which requires the interested parties to be first recognised by the *ejido* and subsequently by the federal government who issues a certificate of 'membership'.

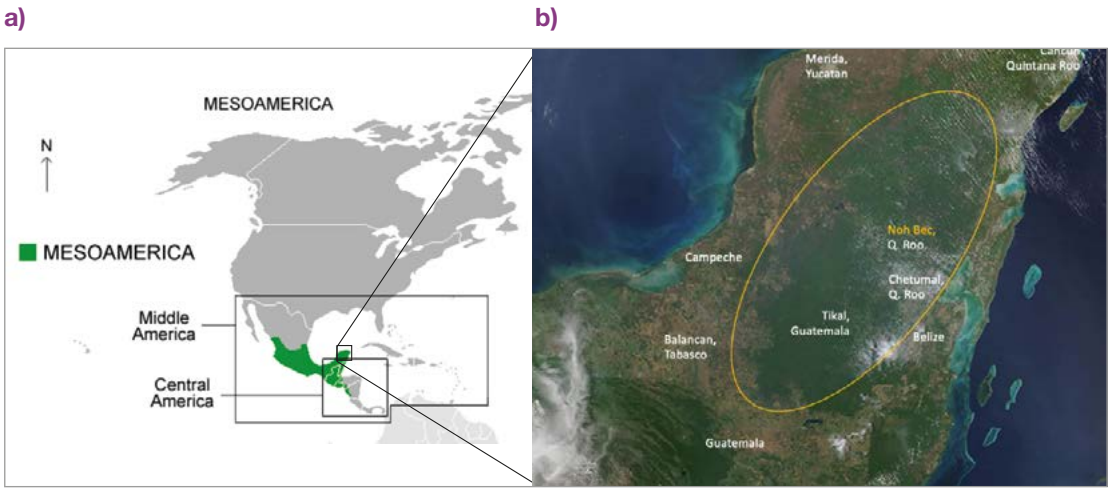



**Figure 7.2**
Location of Selva Maya (encircled) and Noh Bec *ejido*

Source: a) Wikimedia (Mesoamerica map); b) NASA (satellite image of the Yucatan peninsula)

## *Ejido* Noh Bec, Quintana Roo

*Ejido* Noh Bec is located in the central area of the state of Quintana Roo (Figure 7.2) and is part of its 279 *ejidos* (Morett-Sánchez & Cosío-Ruiz, 2017). It is located in the Yucatán Peninsula, Mexico, North of Belize and Guatemala where Yucatec Maya families live in the forest. Noh Bec intersects with the territory where Maya culture developed. The forest in Noh Bec is considered part of the Selva Maya, a large forest ecosystem significant for its rich habitats, biodiversity, and contributions to human well-being. Noh Bec, which means 'big roble' in Maya in reference to the plant *Tabebuia rosea* (*Bertol.*) of the *Bignoniaceae* tree family, was officially founded in 1936.

In Mexico, the Selva Maya covers parts of the states of Chiapas, Tabasco, and all three of the Yucatan peninsula states – Campeche, Yucatan, and Quintana Roo. *Ejidos* are the most common land tenure for most of the local communities located within the Selva Maya, and most *ejidos* have a relatively high percentage of Indigenous inhabitants (Ellis et al., 2021).

Noh Bec is part of the municipality of Felipe Carrillo Puerto, and is now a multicultural community of less than 2,100 inhabitants, around 30% of whom are Yucatec Maya. Most of the immigrants settling in Noh Bec during the immigration of the 1970s were from the state of Veracruz (Marin Olán, 2011), the majority considered themselves Indigenous. Noh Bec has 216 *ejidatarios*, and the *ejido* itself occupies 24,122 ha, or 111.6 ha per capita (Gonzalez Sosa, 2018).

*Ejiditarios* of Noh Bec

Source: Juan Mayorga https://es.mongabay.com/2022/05/noh-bec-hogar-de-las-caobas-conserva-bosques-en-mexico/


This case study on Noh Bec provides an opportunity not only to understand the process of governance that explains the effective conservation of natural resources, but also to test the role of shared vision in a successful forest conservation. Twelve interviews were conducted to determine the considerations that guided decisions in the 1936–1956 agreement with foreign contractors, and in the 1957–1983 period during which exploitation of the forest solely by the community was determined. One of the interviews included the incumbent president of the *Comisariado Ejidal* who is a descendant of immigrants in the 1970s. Regarding the period from 1984 to 1998, when Noh Bec joined the *Plan Piloto Forestal* (Forest Pilot Plan, or PPF), and from 1999 to the present, 10 interviews were held with stakeholders who actively participated in the decision-making process during those times. From each interview, key expressions were selected and confirmed between the informants, regarding not only the wording but the thinking behind the wording. The list of expressions helped to determine a pattern which led to shape the dominant vision shared by the stakeholders at the time (Table 7.1).

**Table 7.1 Key expressions and evolution of the dominant vision for each period in Noh Bec**, which informed decisions associated with the exploitation or sustainable management of their forest. Data/information was provided by community members. The first two periods, 1936–1956 and 1957–1983, were collected from direct descendants of immigrants who founded Noh Bec. The expressions from the other two periods were provided by present community members.

| PERIOD | STAKEHOLDERS | KEY EXPRESSIONS | DOMINANT VISION |
|---|---|---|---|
| **1936–1956**<br>Agreement of exploitation by foreign contractors | > *Ejidatarios*<br>> *Local Comisariado Ejidal*<br>> Federal government<br>> Contractors | "We did not listen to the locals, we thought the forest would recover fast" (Cr, GR).<br><br>"At the time we thought it was a good option to give authorization, we were farmers, we knew nothing about forest management" (LEF). | "Exploitation of the forest. The resource is abundant and there should be fast recovery." |
| **1957–1983**<br>Community only exploitation | > *Ejidatarios*<br>> *Local Comisariado Ejidal*<br>> Federal government<br>> State government<br>> Municipal government | "We were disappointed with the contractors. We thought that the benefits from the exploitation were not fairly distributed. After all these years we thought we knew how to handle the forest" (PCE).<br><br>"Although we had a diverse community, the decision of not extending the contract and taking the responsibility for our own, I think helped to find unity in our diversity and work together" (CE). | "Instead of foreigners taking advantage of our forest, we should exploit it. It is still abundant." |
| **1984–1998**<br>Noh Bec joined the Plan Piloto Forestal | > *Ejidatarios*<br>> *Local Comisariado Ejidal*<br>> Federal government<br>> State government<br>> Municipal government<br>> International representatives, mainly from Germany & South America | "At first, we did not understand when the foreigners were talking about sustainable management. Until a Maya person said: 'They mean ka'anan kaax', which in Mayan means taking good care of our natural resources. Then we all understood and connected" (Ej).<br><br>"Their plan resonated with our needs and vision for the forest, we were concerned about the future of our children" (LEF). | "It has been too long, 45 plus years of forest exploitation; we risk our future, our livelihood and our descendant's future. It is time to try something else. The Maya people are right, we should take good care of the forest because the forest is taking care of us. The ideas presented by the foreigners are in alignment with what we envision now. No more exploitation, but ka'anan kaax (sustainable management) of our resources, not only our forest but our lagoon, our traditional farming, our culture, our community." |
| **1999– present**<br>In alliance with other *ejidos*, Noh Bec integrated the Alianza Selva Maya | > *Ejidatarios*<br>> *Local Comisariado Ejidal*<br>> Federal government<br>> State government<br>> Municipal government<br>> Representatives from other ejidos<br>> Representatives from academia, state, national and international<br>> International representatives from foundations, civil society organisations, from several countries, mainly South America, United States and Europe | "We have significant achievements because we made the right decisions, because we listen to the wisdom of our farmers, our Indigenous, and most of the community members; and above all, we listen to our family who expected to have good livelihood" (PCE, GR, IR).<br><br>"The idea of several ejidos working together will help us fight illegal lumber trafficking and propose changes in the Mexican legal system. Our future is at stake" (CE). | "We realized that the thinking developed with the Plan Piloto Forestal is not sustainable by itself, large challenges like global warming demand that as many ejidos as possible should coordinate and work together. We need to fight illegal exploitation and commodification of lumber, we need to change legislation, working together means access to large grants, and we are ready for it." |

**Notes:Cr** Contractors; **GR** Government representative; **LEF** Local ejidatario farmer; **PCE** President of the Comisariado Ejidal; **CE** Comisariado Ejidal; **Ej** Ejidatario; **IR** International representatives

## A brief history of the major phases of Noh Bec *ejido* management

Soon after its creation, the *ejido* assembly in Noh Bec decided to grant permission to foreign contractors to exploit their forest, mostly for lumber from mahogany (*Swietenia macrophyllya*), as well as chewing gum resin from *Manilkara zapota* (known locally as *caoba* and *zapote,* respectively) (Merino et al., 1997). The permission lasted from 1936 until 1956. After 20 years, the *ejidatarios* decided to seek permission from the federal government to exploit their forest resources themselves. This was granted between 1957 and 1983. However, thinking themselves to still be very poor and their forest and source of livelihood in danger, the *ejidatarios* were not happy with the outcomes.

In 1984, the PPF was implemented in Quintana Roo. Noh Bec became one of the first six *ejidos* to join the PPF programme supported by a Mexico–Germany bilateral agreement and the state government. The PPF was based on the new concept at that time of 'sustainable development'. The idea was to design and implement sustainable forest management with the community (Keyes Henning, 1998). Noh Bec was part of the PPF from its inception in 1984 until 1998. The success of the programme led Noh Bec to be the first *ejido* in Quintana Roo to obtain an international certification from Smart Wood for sustainable practices in forest management in 1995.

From 1999 to 2007, after the PPF had achieved its goals and the programme was completing its cycle, the community decided to take control of the management of its resources without losing the support of the Mexican governmental agencies and international organisations. Unfortunately, in August 2007, Hurricane Dean destroyed the forest in Noh Bec and in many other *ejidos* in Quintana Roo, resulting in the loss of international certification from Smart Wood. Nevertheless, there was a fast recovery of the forest which surprised everyone but not the *ejidatarios*; they had built a highly resilient forest (McGroddy et al., 2013).

Under these conditions, the community and the *ejido* faced a difficult choice because the state of the national economy was precarious. Should the community change course from forest certification management to higher rates of exploitation for income generation, or should it develop new strategies to continue its work based on the concept of sustainable forest management? The community and the *ejido* of Noh Bec chose the latter.

After overcoming Hurricane Dean, Noh Bec realised that joining efforts with other *ejidos* can enhance conservation and produce good livelihood from their forest. Thus, on 15 July 2011, Noh Bec joined the alliance for the Selva Maya with four other *ejidos*: Felipe Carrillo Puerto, Bacalar, Petcacab and Polinkin and X-Hazil y anexos,[2] creating an initial area of 113,000 ha known as a Permanent Forest Area (Díaz, 2016). Noh Bec *ejido* brought to the alliance their experience in sustainable forest management. Their involvement was further strengthened by the authorisation received in early 2011 from the Mexican Secretary of the Environment (SEMARNAT) to implement a new model for managing the forest, aiming at participating in an international market designed

2 *Anexos* are an addition to the original *ejido* extension of land granted by the federal government, and in some cases included existing human settlements.

for certified forest products and achieving a certification from the Forest Stewardship Council (FSC), based in Germany.

Other distinctions are worth mentioning. In 2012, Noh Bec was recognised by the *Comisión Nacional Forestal* (Mexican National Council on Forestry, or CONAFOR) as an '*ejido*-school' offering training on sustainable tropical forest management to community foresters. Likewise, its contribution to community forest sustainable management was acknowledged when it received the National Forestry Award and international FSC certification (González Sosa, 2018) in 2015. More recently, Noh Bec *ejido* received the FSC Leadership Award.[3]

Today, after nearly 38 years of a strengthened and stronger community involvement, after overcoming difficult times related to bad leadership and governance, Noh Bec is an exemplary community who has achieved the sustainable management of its forest, thus contributing significantly to the conservation of the Selva Maya. The diverse stakeholders were able to reach solid agreements in an efficient manner and for a long period of time. The key stakeholders involved were, and still are: *ejidatarios*; the *Comisariado Ejidal*; local, state and federal government representatives; and national and international organisations. They all had different cultural backgrounds, including Indigenous and non-Indigenous.

How was the governance process function in a multicultural context, including multiple types of leadership? What were the main elements of the successful/effective governance processes that explain the extraordinary achievements?

The process, which took over 85 years to reach the point where Noh Bec is currently, has not been smooth. The categorisation of periods in the evolution of Noh Bec, in relation to the varying management of its forest, provides a good indication of the difficulties. Several members of the *Comisariado Ejidal* had to resign due to mismanagement, or for not being up to the task, along with the representatives of the municipality in Noh Bec for the same reasons. The people in Noh Bec did not tolerate incompetence nor leaders not representing their views, or those not fighting to solve their basic needs. Fortunately, the difficulties did not break the social fabric of the community.

## Role of shared vision in governance outcomes – The evolution of Noh Bec over four time periods

Culture shapes values, which play a critical role in determining how a group of people understands their surrounding resources and how to live with them. Thus, developing a vision for the future of natural resources in a community is closely related to understanding cultural processes. Effective conservation requires context-specific understanding of human's interactions with, and conceptions of, nature (Infield et al., 2017). There is also empirical evidence to demonstrate that valuing cultural heritage is an investment, not a cost (Nocca, 2017). In some contexts, it is critical to implement mechanisms and strategies, including public policy, to support a culture

3 For more information on the Award, please see: https://us.fsc.org/en-us/newsroom/newsletter/id/1260

appropriate for the conservation of natural resources and biodiversity. Furthermore, it is not unusual in the field to expect different visions from different stakeholders in a community, especially when there is a multicultural composition. Uniting different visions becomes critical in a decision-making process; although it is not an easy task, it increases the expected cost-effectiveness of biodiversity conservation (Ponce Reyes et al., 2019).

The four periods in which the history of Noh Bec evolved clearly indicate changes in their vision and values on how to manage their forest. In the **first period**, from 1936–1956 (agreement of exploitation by foreign contractors), the community remained passive; there was no transfer of knowledge or training offered to the locals beyond their skills for work, no fair share of the profits, no interest from the contractors other than to extract the tree trunks. Therefore, the community's vision based on exploitation of the forest, thinking that there should be a fast recovery (because the resource was still abundant), proved to be wrong.

Tired of the unfair exchange with the contractors, the community decided to move to the **second period**, trying to take control of the logging. However, their lack of training, not only on the tree-felling itself but on the technical and scientific bases for proper management of their most important natural resource – the forest – did not yield good results. Their decision to not extend the contract to foreigners to exploit their forest was based on a vision developed by the majority of the community: *instead of foreigners taking advantage of our forest, we should utilise and benefit from it ourselves; it is still abundant*. The thinking behind this vision did not consider the high complexity of proper management of a forest. The local knowledge was not enough to attend to all the components – they had lost a lot of that knowledge; the new generation did not learn enough before their parents passed away. In addition, members of the local authorities had demonstrated corruption and many of their decisions were not necessarily for the benefit of the community. These were the conditions before entering the third period.

Reflecting on the experiences passed on by their ancestors, one community member shared her thinking about the second period, a very difficult one for everybody, which also explains the readiness that Noh Bec had when the PPF was introduced to them:

> *Although we had a diverse community, the decision of not extending the contract and taking the responsibility for our own, I think helped [us] to find unity in our diversity and work together.*

Many community members described how tired they were of bad decisions regarding the management of their forest. Although there were difficult and violent moments, most of the community felt that the forest represented everything to them, meaning their source of livelihood and cosmovision, and that there had to be alternatives that were good for them and for their forest. This was the situation in the community when the PPF was introduced.

The PPF included strong participation of community members in decision making regarding natural resources management, and training not only for developing skills for work in the field but also for mid- and long-term planning to guarantee proper conservation of the forest. Thus, from 1984 to 1998 Noh Bec entered its **third period** in forest management.

Because of its history and experience, but mostly because there was still a sense of conserving its natural resources as an expression of the communities' culture (most of the inhabitants consider themselves of Indigenous origin), there was a shift in the vision on what to do about the resources. A consensus for a new vision was built around the Maya concept of '*Ka'anan kaax*', which means taking good care of nature (in Maya, *ka'anan* means take care, *kaax* means nature, forest), and which implies a long-term vision. This was the interpretation of the community when the PPF referred to sustainable forest management. Thus, solid bridges were built between cultures, not only regarding labour and skills, but also conceptually (*Ka'anan kaax* is very similar to sustainable management (Rosado-May & Poot Cahum, 2020), and with respect to the long-term vision of both the community and the PPF.

In this third period, all stakeholders acting in Noh Bec concurred in their vision for the natural resources and for the community, which can be expressed as "we will all work towards achieving the best *Ka'anan kaax* [sustainable management] of our forest in Noh Bec; if the forest is in good condition, the other resources will be too". This thinking set the stage for the next period, the creation of a network with other Maya communities, all united by the same vision on their natural resources.

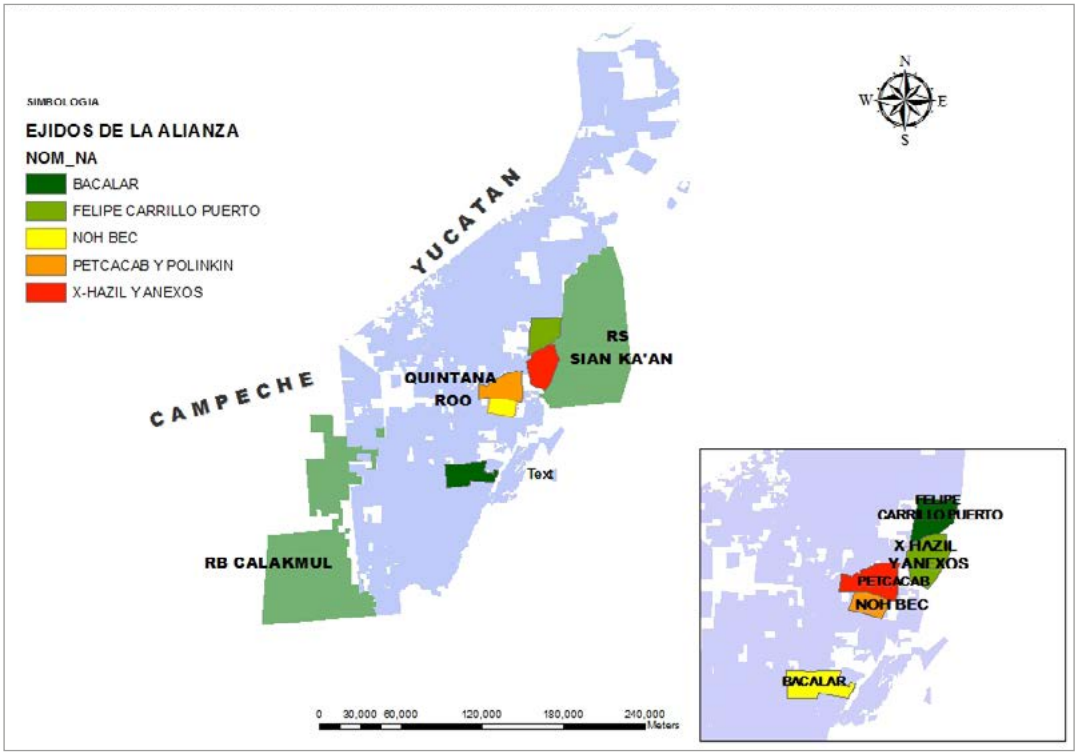



**Figure 7.3**
Location of the five *ejidos* of the Selva Maya Alliance in the state of Quintana Roo (in purple), Mexico. Sian Ka'an and Calakmul are Biosphere Reserves

Source: Allianza Selva Maya (2015)

The **fourth period**, which started in 1999 and is ongoing, is based on the vision and achievements from the third period but expanded to create a network of *ejidos*. Noh Bec joined an alliance for the Selva Maya, with other four *ejidos*, Felipe Carrillo Puerto, Bacalar, Petcacab, and X-Hazil. Figure 7.3 shows the distribution of the five *ejidos* in the state of Quintana Roo, which cover around 215,500 ha, managed by a total of 1,237 *ejidatarios*, where around 49,000 people live (Table 7.2).

This fourth period brought a new level of understanding of ecological and social processes. The *ejidatarios* considered that ecological processes, such as water cycle

**Table 7.2** Description of the five ejidos that created the Alliance for the Selva Maya

| EJIDO/ COMMUNITY | YEAR OF CREATION | HECTARES OF FOREST* | NUMBER OF EJIDATARIOS* | COMMUNITY POPULATION** | SOURCES |
|---|---|---|---|---|---|
| Noh Bec | 1936 | 24 122 | 219 | 2 052 | Barsimantov et al. (2010) |
| Petcacab + Polinkin | 1936 | 42 521 | 206 | 1 083 | SEMARNAT, CONAFOR, UNDP & The World Bank |
| Felipe Carrillo Puerto | 1944 | 45 437 | 251 | 30 754 | Tobasura Morales et al. (2018); Mendoza López (2014), pp. 77–78 |
| X-Hazil + Chancah and Uh May | 1936 | 54 813 | 396 | 2 454 | Cruz Cáceres (2005) |
| Bacalar | 1938 | 48 41 | 165 | 12 577 | Bezaury-Creel et al. (2015) |
| **Total** | | **215 434** | **1 237** | **48 920** | |

* https://alianzaselvamaya.wordpress.com
** https://www.inegi.org.mx/app/scitel/Default?ev=9#collapseList-1

and mechanisms of population regulation, especially for birds and large animals, need larger areas than the extent of one *ejido*. The *ejidatarios* also knew that negotiating as a group, with the potential buyers of certified forest products would have better results; by working together they could guarantee larger quantities of products and, at the same time, protect themselves against illegal activities especially hunting and lumber extraction. However, to be successful they also had to continue developing effective ways of governance which should be translated to innovations in how to manage their natural resources.

Both Petcacab and X-Hazil included their annexes. There was a time when *ejidos* in Mexico could request an expansion of their original territory, or *anexos*, and some *ejidos* were granted the requested. Petcacab included the settlement of Polinkin; X-Hazil included Chancah Veracruz and Uh May.

## Elements of the governance process of the Selva Maya Alliance

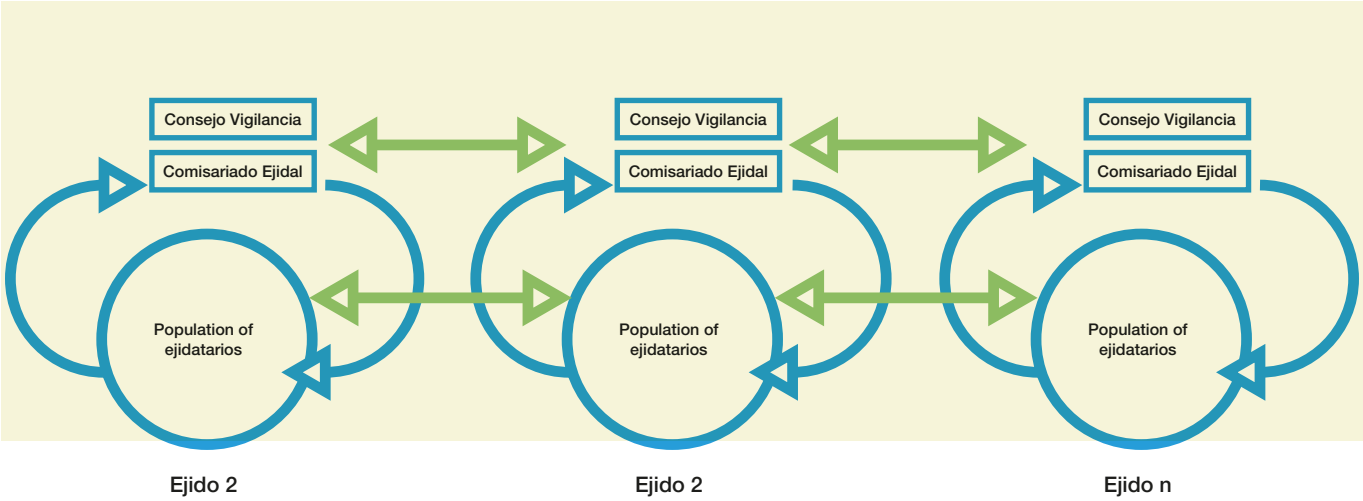
It has been about 22 years since the Selva Maya Alliance started. The results have been encouraging; there have been no major differences among the different *ejidos*. The mechanisms to come to agreements and solve differences have worked so far. Although the population in each of the communities where the *ejidos* are located is larger than the number of *ejidatarios* (Table 7.2), there is a culture of respect for *ejido* rights. The *ejido* is responsible for the management of the land allocated to it and works closely with the state and federal authorities. The general assembly of the *ejido* is the highest body of decision making based on the federal legislation (Government of Mexico, 2018), an effective *Comisariado Ejidal* discusses with the *Consejo de Vigilancia* and with key members of the *ejido* important topics prior to presenting them to the assembly, the idea is to build consensus before the assembly. It is in this

part of the process where the shared vision plays an important role in guiding the discussion even before an item is discussed in the general assembly. This same process happens in each of the five *ejidos* of the alliance.

Decision making is an important component of governance. Noh Bec and the other four *ejidos* have been incorporating innovations in their discussions and decisions regarding the management and certification of their forests. The certification provides guidance and so does the continuous training. Most of the training focuses on technical aspects; for instance, the *ejidos* are familiar with the results of research conducted in their territories or *ejidos* nearby. The *ejidatarios* have *formal* and *informal* ways of exchanging information, and they demand that researchers share with them their findings. This is why they know about reduced-impact logging (Ellis et al., 2019), or the work on the impact of shifting cultivation on the availability of non-timber forest products, which was conducted in Felipe Carrillo Puerto (Pulido & Caballero, 2006). The *ejidatarios* are also familiar with the more than 30 years of research that demonstrates the importance of community participation in the success on the commons (Bray, 2020). In X-Hazil specifically, the *ejidatarios* know the work on the natural regeneration of forest species after logging, pioneered by Macario Mendoza and colleagues (Macario Mendoza et al., 1995).

**Figure 7.4**
Flow of information between the *ejidos* in the Alliance occurs equally within and between them. This process happens before meetings of ejidos for decision making and the Alliance

Source: Allianza Serva Maya (2015)




What the *ejidatarios* did was to take advantage of the *ejido* way of working (Figure 7.1) and adapt it to the alliance. Figure 7.4 represents graphically the flow of information between the *Comisariados* and the *ejidatarios*, as described in the previous paragraph, with the important factor being that the information is shared between all the different actors across *ejidos*, and that ultimately the assembly determines the final decision by the members, the *ejidatarios*. So far, all decisions in all five assemblies have been very similar, which facilitates the work of the *Comisariados* when implementing those decisions (for example, the volume of lumber, areas for extraction of lumber, quotas, accepting or not offers of buyers, or technical assistance or research projects).

There is another important aspect to mention related to the success of Noh Bec in the management of their forest. The leaders, mainly the *Comisariado Ejidal* and the *Consejo de Vigilancia* exercised a type of leadership aligned with the cultural conditions of the ejidatarios. Studying the type of leadership in Noh Bec, Rosado-

May et al. (2022) found that of all the ifferent types reported in the leadership literature, servant leadership is the one close to the conditions in Noh Bec. The goal of servant leadership is to serve the community, rather than to take advantage of the position of leadership. This type of leadership explains a reduction in corruption and implementation of good practices based on community participation in governance and transparency, which describes the process in the success of Noh Bec.

The diversity in the composition of the stakeholders (*ejidatarios*, all three levels of Mexican government, national and international organisations working with the *ejidos*) suggests that there is a multi-level type of governance in the alliance and in each of the *ejidos*, as demonstrated on community forestry in northern Mexico (García-Lopez, 2013). In Quintana Roo, each *ejido* of the alliance, and the Selva Maya Alliance itself, has to deal with multiple external organisations and levels of governance, to comply with regulations from the municipal, state and federal governmental levels. They also have to take into consideration the regulations applicable to other stakeholders involved, such as investors, buyers, civil society organisations and others. This requires expertise and training.

The *ejido* system represents an advantage to the alliance. The structure and function of an *ejido* is basically the same all over Mexico, in all of them there is a multi-level governance as well. What makes the difference in achieving success and sustainable management, is how agreements are reached. In the case of Noh Bec and the Alliance, it is demonstrated that a shared vision plays a critical role, it guides the decision-making process; it is at the core of governance. Therefore, it is critical to understand what the dominant vision in a governance system is and how to work with it in the process of achieving sustainable management of natural resources.

## Final considerations

The successful sustainable management of the forest in Noh Bec, as demonstrated by the awards granted to the *ejido*, is the result of the effective interaction of multiple factors and stakeholders, alongside the revitalisation and connection of the customary *ejido* institutions for forest governance. Some of those factors are the proactive participation of the community, access to information and technology, decision-making process, and access to financing and to national and international markets. Supportive political opportunities and external organisations have also played an important role in turning the trajectory of these biodiverse forests, from one of unsustainable exploitation and loss of social-ecological resilience to become an award-winning model of sustainable forest governance for other communities to take lessons from.

Not only is Noh Bec considered to be a multicultural community, but the incorporation of new stakeholders, such as the representatives of the PPF in the third and fourth periods of their evolution, increased cultural diversity. Therefore, a shared vision acts as a driving force for the decision-making process in their governance; it is an often-overlooked interactive process in studies of governance which makes a key difference between failure or success in the sustainable management of the natural resources. In the pivotal third and fourth periods of Noh Bec, when the reconnection with traditional, relational values and to customary *ejido* institutions began, all segments of the different groups of stakeholders were strongly convinced that working towards

achieving the best possible *Ka'anan kaax*/sustainable management of their forest was the required pathway to maintain a great source of livelihood and social peace (Bray et al., 2007). The thinking that drives actions and decisions about forest management, as mentioned by the people in the community, is: "if the forest is in good condition, the other natural resources will be too"; another way to describe the thinking is: "we nurture nature because nature nurtures us". Although not conspicuous, this thinking is the legacy of the Yucatec Maya culture to the community.


Noh Bec has been able to show that good forest management allows the conservation of the tropical forest and its fauna.

Source: Juan Mayorga https://es.mongabay.com/2022/05/noh-bec-hogar-de-las-caobas-conserva-bosques-en-mexico/

Based on this study, a key factor to be considered in effective governance for sustainable natural resources management, and building a shared vision of the community, is related to how the stakeholders learn and construct knowledge. This is very important especially under multicultural settings. Different cultures have different ways of learning and creating knowledge (Rosado-May et al., 2020), thus culture plays a critical role on how to construct a vision. In the Noh Bec case, this factor is illustrated by the use of *Ka'anan kaax,* which is very close to the Western concept of 'sustainability' (Rosado-May & Poot Cahun, 2020) applied to forest management. Once the stakeholders found a conceptual common ground, they were able to build bridges between cultures that allow the understanding of each other, the clarification of ideas, and then the discussion of strategies and actions. Even though the Indigenous way that explains the construction of the concept of *Ka'anan kaax* is different than the way the concept of 'sustainability' was constructed (Rosado-May & Poot Cahun, 2020), the purpose and the goals between the two concepts are closely related with each other. This is an example on how important it is to build bridges between cultures, it has the potential of driving natural resources conservation far into the future of a sustainable planet.

Because we live in a world where most communities, Indigenous or others, are multicultural, achieving sustainable management and conservation must be an intercultural process. The hypothesis that results from this research is that the success of effective governance and conservation of natural resources can be explained by the coexistence of different ways of learning, constructing, innovating, and transmitting knowledge (for example, local, science or Indigenous), under a safe environment, creating conditions for multicultural societies to build shared visions and actions for the sustainable future of our natural resources. It is critical, then, in a multicultural setting, to invest time and resources to build a shared vision between stakeholders that can lead to effective governance for the conservation of natural resources.

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# Sense of belonging: Kasepuhan Karang customary forest recognition for community-based conservation

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## Abstract

This article describes the Kasepuhan Karang's process of obtaining Customary Forest recognition through their *Hutan Adat* title deeds, which are inseparable from the wider struggles of the Kasepuhan Indigenous people's community to be recognised by the State. We discuss the impacts on the Kasepuhan Karang Indigenous people's way of life, on the sustainability of land use and for biodiversity, as well as how women and youth have been affected. We then draw implications from this case for the struggles of other Indigenous peoples throughout Indonesia facing similar issues.

**Keywords**: forest law; Indigenous rights; customary tenure; traditional knowledge; justice

## Introduction

In 2016, Kasepuhan Karang became one of the first Customary Forests (*Hutan Adat*)[4] to be formally designated in Indonesia, whereby part of the customary forests (*leuweung*) of the Kasepuhan Karang Indigenous peoples (*masyarakat adat*) were returned to them by the Indonesian State. Kasepuhan Karang has thus been a test site for the process of recognising the land and forest rights of Indigenous peoples for national and global civil society organisations as well as various government agencies. The transition from state control as part of a national park to Indigenous customary governance also enables an enlightening comparison of the two contrasting governance approaches, and the outcomes they have yielded for people and nature. This comparison is particularly informative regarding which conservation approaches are appropriate to pursue both the ambitious conservation targets, and the progressive standards for equitable governance and respect for rights, to which Parties agreed by adopting the post-2020 Kunming-Montreal Global Biodiversity Framework.

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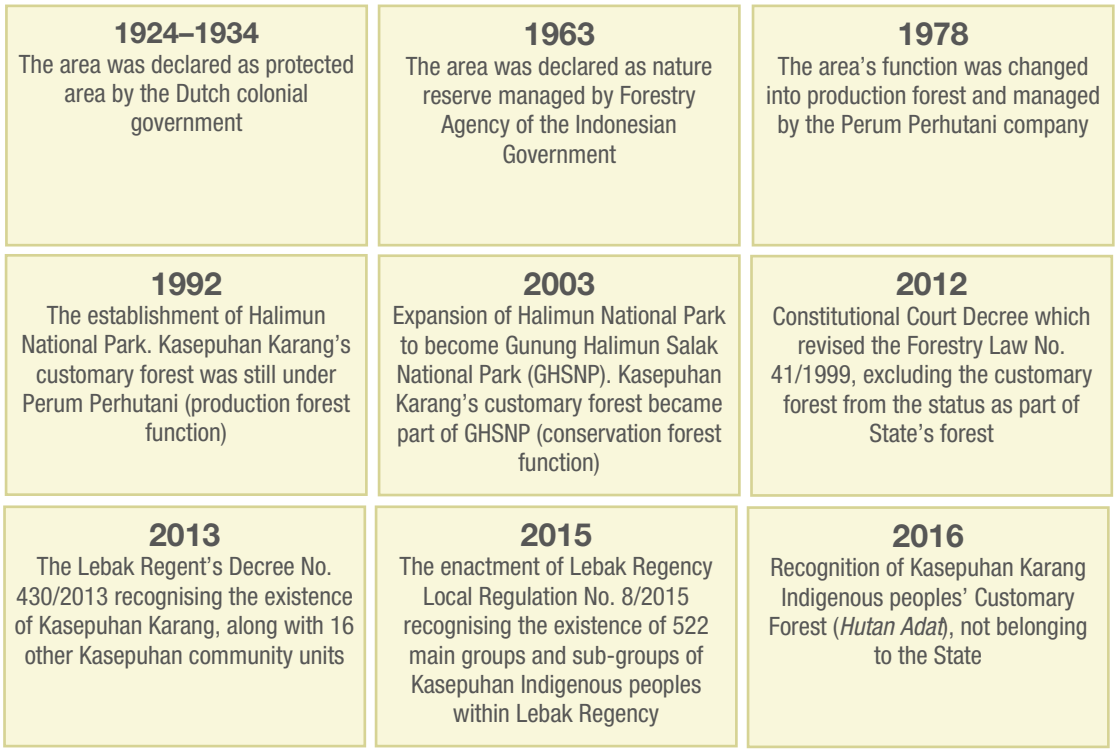
b) Works at RMI since 2017, having been responsible for advocacy work, such as facilitating Kasepuhan Indigenous peoples' Customary Forest recognition, and RMI Executive Director since 2021.
c) Joined RMI in 2018, led the Indigenous Food System research process in 2019, and since 2020 has coordinated decolonisation-themed projects in the Philippines and Indonesia.

4 This article refers to two different terms of customary forests. The one with upper letter case 'C' and 'F' 'customary forest' refers to the State's paradigm of forest (*Hutan Adat* in Indonesian), and linked with the formal recognition of Iindigenous peoples' customary forest. On the other hand, the one with lower letter case 'c' and 'f' refers to the community's paradigm in looking at what they call *leuweung*, or translated freely into the term 'forest'.

The Kasepuhan are an Indigenous group inhabiting Mount Halimun in Lebak Regency, Banten Province and Sukabumi Regency, West Java Province. They settled there more than 600 years ago, since the Sunda Kingdom, also known as Pajajaran Kingdom,[5] was defeated by another kingdom, causing their ancestors to flee to Mount Halimun. Despite their customary forests being under state control since 1924, when it was first declared as a protected area by the Dutch colonial government (Figure 8.1), the Kasepuhan Indigenous people have continued under certain constraints, practicing their traditional agriculture-forestry management throughout the Halimun mountains.

**Figure 8.1**
Chronology of Kasepuhan Karang's customary forest recognition




In 2003, the Gunung Halimun Salak National Park (GHSNP), a strict protected area (IUCN management category II), expanded from 40,000 to 113,357 ha and encroached even more into the Kasepuhan's customary forests, including those of the Kasepuhan Karang Indigenous people. The expansion of GHSNP created restrictions that went far beyond existing state regulations over land and resources, as they prevented access to and management of large portions of the Kasepuhan Indigenous people's Customary Forests, where their forests gardens are also located. However, since 2013, the Kasepuhan Karang, a sub-group of Kasepuhan Indigenous peoples living in the administrative unit of Jagaraksa Village, has taken the lead in the struggle to get their customary forests returned to them by the state.

Together with the Regency Government of Lebak, the Kasepuhan Karang Indigenous people conducted various advocacy works, including hearings with the People's Representatives at the national level and with the Ministry of Environment and Forestry (MoEF), to ask for the revision of the size of GHSNP to exclude Kasepuhan territories from it. The recognition of their customary forest through a Customary Forest (*Hutan Adat*) title deed, under the Constitutional Court Decree No. 35/2012, and eventually the MoEF's Decree No. 6748/2016, has meant that 462 ha of their customary forest area,

5 Sunda Kingdom is a kingdom that used to rule one third plus one eighth, if not half, area of Java Island (Pires, 1513 in New World Encyclopedia contributors, 2014). Its capital city during one of its greatness period named Pajajaran, an area where Bogor City is located at present.

*We feel secure now, after the recognition of our Customary Forest in 2016.*

**Member of Kasepuhan Karang Indigenous people (interviewed in February 2022)**

representing 30% of their entire territory post-decree, are no longer state forests under GHSNP management.[6] The process of gaining recognition of their customary forest by the state is thus a significant step in a historical struggle by the Kasepuhan Indigenous people, with larger implications for other Indigenous peoples in Indonesia.

This article describes the struggles for forest tenure rights by the Kasepuhan Karang and how they won their *Hutan Adat* title deeds to access and manage their customary forests (Figure 8.2). This in turn allowed the Kasepuhan Karang to revitalise their traditions and community autonomy by making their forests their main source of livelihoods and recentring the forest as part of their identity. As a result, the community strengthened and adapted their institutions based on their customary law, namely the *tatali paranti karuhun*. All of these activities, supported by the granting of the *Hutan Adat* title, instilled a feeling of belonging to the forests and with that, security in their territory, activities, and sense of community identity. The improvement of participation and inclusion of women and youth have also resulted from their customary forest recognition.

Drawing from the authors' long observations whilst being part of an organisation that has been facilitating the Kasepuhan Karang's struggle to obtain their customary forest title deeds since 2014, this case study was prepared using various references and based

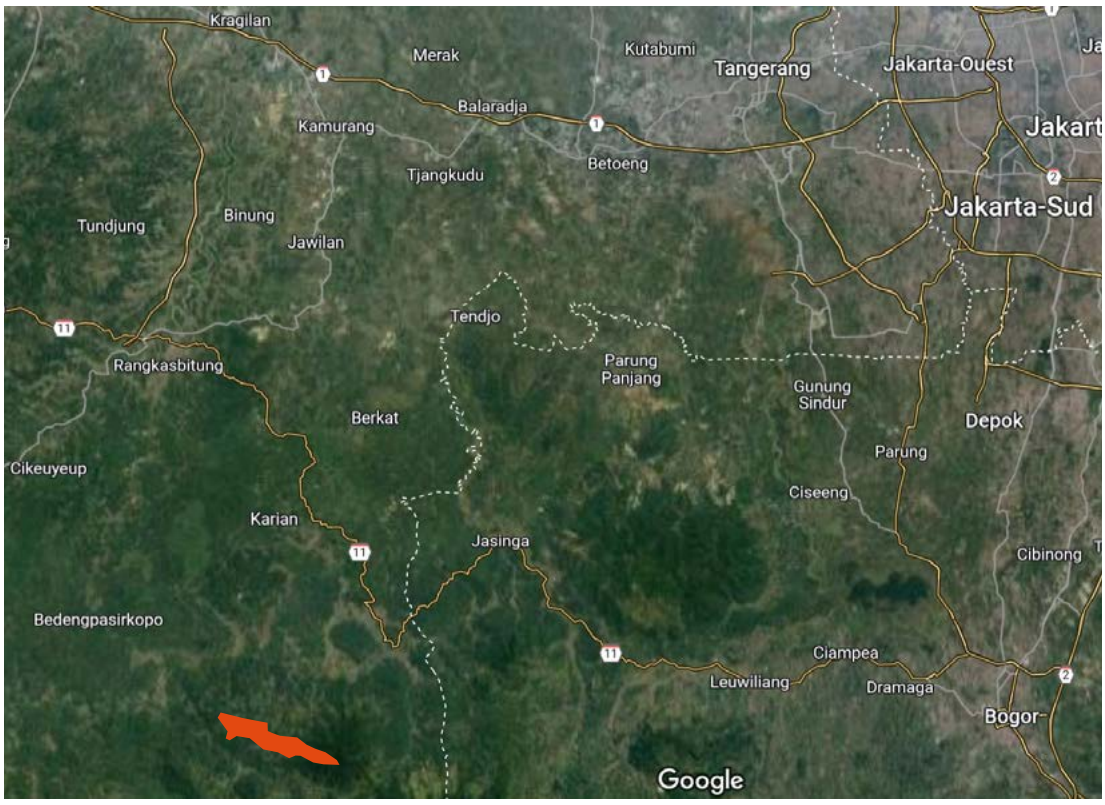



**Figure 8.2** Kasepuhan Karang customary territory (in red shade), lower left side), 110 km away from Jakarta, the capital city of Indonesia. Kasepuhan Karang customary territory fits the administrative jurisdiction of Jagaraksa Village.

Source: Google (2023)

6 For the full text of the decree, please see: https://rmibogor.id/2016/12/25/sk-6748-hutan-adat-kasepuhan-karang/ (in Indonesian).

on the authors' interactions with Kasepuhan Karang Indigenous people. Primary data was obtained from interviews conducted in May 2022. Field notes, research notes, published and unpublished research reports of the organisation, namely Rimbawan Muda Indonesia (RMI, or Indonesian Institute for Forest and Environment), were used and analysed as the basis of data using political ecology, gender equality and social inclusion perspectives.

## The Kasepuhan Karang Indigenous people

The Kasepuhan Karang Indigenous community inhabits Jagaraksa Village, Muncang sub-Regency, Lebak Regency, Banten Province, in the Mount Halimun ecosystem, located only 110 km southwest of the Presidential Palace in Jakarta, Indonesia (Figure 8.2). With increased accessibility from the expanding road network, it now takes about five to six hours' drive to reach Jagaraksa Village from Jakarta. According to Jagaraksa Village Profile, prepared by the head of village, the 2017 population of the Kasepuhan Karang community was 2,504 individuals (754 households).

The Kasepuhan Indigenous peoples have roots in the area dating back to the end of the Sunda Kingdom in the 15th century (1482–1521 AD) (Wijaya, 2021; Aldi & Cahyono, 2021). Following the collapse of the Sunda Kingdom in 1579 by the Banten Sultanate, many residents and royal troops of the Sunda Padjajaran kingdom fled to the heavily forested and mountainous Halimun area for protection (Adimihardja,1992). This runaway community that is now scattered across Mount Halimun and still adheres to the customs of their ancestral traditions is called *Kasepuhan*. *Sepuh* means old, and with the prefix '*ke-*' and suffix '*-an*' means, according to the elders, an area where the people who live follow the old traditions (Wijaya, 2021).

The sub-group of Kasepuhan Karang are thought to have originated from the sacred site of Kosala, 20 km away from where they now live. A mandate of guardianship over Kosala has been passed down from their ancestors and requires an annual pilgrimage that continues to this day. Although the Kasepuhan Karang are now settled in Jagaraksa Village, they have migrated several times in the area following their elders' premonitions, but the customary heads of Kasepuhan Karang (*Olot*) have been residing in Karang hamlet/*Kampung* Karang since before the 1945 founding of the Republic of Indonesia.

Regarding land use within their territory, Kasepuhan Karang have their own traditional institutions determining forest zoning for land-use systems, similar to many other forest-dwelling communities, regulated by the Kasepuhan's customary law.[7] The major land uses in Kasepuhan Karang are *leuweung kolot/paniisan* (ings), *leuweung cawisan/titipan* (areas set aside for settlement and productive activities in the future), settlements, Mount Haruman, *leuweung garapan*/agroforest area, *huma* and *sawah* (dry and wet paddy fields), and *leuweung tutupan*/forbidden forest (Table 8.1). *Leuweung kolot/paniisan*, or 'a cool place', are areas allocated for the elders to rest during their activities. They have water springs and therefore no tree cutting is allowed in this area. *Leuweung cawisan* are reserved forest areas for future generations to use. *Leuweung titipan,* or 'restricted forest', are tree-covered areas that can only be

7 Kasepuhan has traditional rules on land-use: *Gunung kayuan*, or high areas are for wooded areas; *Lamping awian*, or steep areas should be planted with bamboo; *Lebak sawahan*, or wetlands are for paddy fields; *Legok balongan*, or concave areas are for fishponds; *Datar imahan*, or flat areas are for settlements.

**Table 8.1** **Land-use of Kasepuhan Karang customary territory, based on participatory mapping.** Settlements and paddy fields (both wet and dry) are not included in *leuweung garapan*

| LAND USES IN KASEPUHAN KARANG CUSTOMARY TERRITORY | ENTIRE TERRITORY AREA (HA) | AREA OF CUSTOMARY FOREST DECLARED PART OF NATIONAL PARK FROM 2003–2016 | AREA REMAINING IN STATE CONTROL, UNDER PETITION TO BECOME CUSTOMARY FOREST (ONGOING PROCESS) AS OF 2023 |
|---|---|---|---|
| *Leuweung kolot/paniisan* ('a cool place' or water springs) | 2.1 | | 1.7 |
| *Leuweung cawisan/titipan* (areas set aside for settlement and productive activities in the future) | 4.2 | | 4.2 |
| Settlements | 22.4 | | 1.6 |
| *Leuweung garapan* (agroforests or forest gardens) | 207.2 | | 40.3 |
| *Huma and sawah* (dry and wet paddy fields) | 360.0 | | 234.2 |
| *Gunung Haruman* (Mount Haruman) | 96.2 | 73.0 | |
| *Leuweung tutupan* (forbidden forest) | 389.2 | 389.2 | |
| Total | 1 081.3 | 462.2 | 282.0 |

Source: JKPP & RMI, 2014.

accessed for limited purposes, such as timber for house-building, if permission is granted from the elders. This area is believed to be entrusted by their ancestors to be protected until the elders receive premonitions regarding the right time to open it. It is believed that anyone violating this law will have bad luck, or *kabendon*. *Leuweung garapan* refers to forest areas that have been opened and are managed and used by the community often, even daily. *Leuweung garapan* consists of forest gardens, and dry or wet paddy fields. *Leuweung tutupan*, or 'forbidden forest', are areas that can never be accessed because, among others, it is where their water comes from.

Whilst forest access restrictions were already problematic for the Kasepuhan Karang community before 2003, when GHSNP expanded, the inclusion of their customary forests within GHSNP boundaries caused additional conflicts. The National Park forest zoning system differed and conflicted with the Kasepuhan Karang community's; areas designated as *leuweung garapan*, where resources can be harvested and utilised, were considered to be within the protected zones of GHSNP and subject to enforced park regulations, restricting the community from accessing the forest and forest gardens (for more on conflicting land-uses between GHSNP and Kasepuhan Karang, see Hakim et al., 2016).

It is important to note that what the community identifies as forest (*leuweung*) might be different from the definition of the Food and Agricultural Organization of the United Nations (FAO): an area larger than 0.5 ha with trees at least five metres tall and a canopy cover of at least 10%, or trees that can grow to these heights, and which

excludes land primarily used for agriculture or urban land-use (FAO, 2000). As such, visitors from the city who visit the newly opened ecotourism site in Kasepuhan Karang, specifically the community's forest gardens to see the process of making *Arenga* sugar from the *Arenga* palms nearby, are often disappointed, wondering "is this what they call a forest?". To the Kasepuhan Karang, the word '*leuweung'* resonates with what people in general imagine as 'forest', meaning an area with dense and pristine vegetation. However, they also consider their forest garden, or *garapan*, as part of forests or *leuweung*, and often say "I am leaving for *leuweung*", when going to their paddy fields. It is because they consider all of these functions as inseparable elements that make up their source of livelihoods which they collectively call *leuweung* (see photo below).

Women of Kasepuhan Karang working collectively to harvest the local paddy variety. Surrounding the dry paddy field (*huma*) is the forest garden area of the community (*leuweung garapan*)

Photo: Fauzan Adima (2022)

The livelihoods of the Kasepuhan Karang are closely tied to the forest. They work mostly in their paddy fields, gardens and forest gardens as farmers and obtain their source of livelihood from the forest. Women collect mushrooms, ferns and herbs for food, such as *honje* (*Etlingera elatior*), usually on their way home from their paddy fields that are located within wooded areas (Tillah, 2022). On the dykes between each paddy field, the women grow chillies, *terubuk* (*Saccharum edule*) and vegetables such as string beans. They also collect firewood from the forest. The men usually take care of their agroforest area where they plant trees, such as *Albizia sp*. for timber, coffee plants (*Coffea sp*.) and fruit trees, such as mangosteen (*Garcinia mangostana*), *petai* stinky bean (*Parkia speciosa)*, durian (*Durio zibethinus*), *duku* (*Lansium parasiticum*), *jengkol (Archidendron pauciflorum*) and *Arenga* palms. Although the community plants hybrid paddy seeds obtained from the government's programme to increase the paddy productivity, they are amongst the last communities who still grow local paddy varieties which can be stored in their granary for up to 20 years.

## The Gunung Halimun Salak National Park and its impact on the Kasepuhan way of life

The expansion of GHSNP to include Kasepuhan Karang's customary forests in 2003 resulted in restrictions on forested areas vital for the Kasepuhan Karang Indigenous people. They were unable to enjoy their rights to territorial and cultural security, or the feeling of being 'secure' in their activities and cultural practices, despite being within their ancestral territory. More than half of the 1,081.3 ha[8] that make up Kasepuhan Karang's customary territory (Table 8.1) was designated as conservation area under the management of GHSNP. The accompanying restrictions made it illegal for the community to cultivate their land and access their sources of livelihoods as described in

8 Participatory mapping data (2014) shows that from 1,081.3 ha of Kasepuhan Karang customary territory, 765.7 ha were categorised as part of GHSNP, whilst 29.7 ha of land have been enclaved since before 2016 and 285.9 ha are under ownership status, although it is still part of the customary territory.

the earlier section. As a result, the Kasepuhan Karang Indigenous communities feared accessing their ancestral territories, faced food insecurity, and poor infrastructure providing for their basic needs, on top of the loss of their spiritual and cultural links to their *leuweung*.

Prior to the GHSNP's expansion in 2003, the Kasepuhan Karang's customary forest was under the status of production forest and managed by the state-owned forestry company Perum Perhutani. Between 1978 and 2003, Perum Perhutani allowed the community to manage their *leuweung garapan* and paddy fields, but they regulated the type of plants and trees that the community could plant (Tim Inkuiri Nasional Komnas HAM, 2016; Wijaya, 2021). However, in order for the community to be able to access and manage their forests, Perum Perhutani charged informal taxes, or 'profit sharing' . These taxes range from 10–25% of the community's harvest (Tim Inkuiri Nasional Komnas HAM, 2016; Aldi & Cahyono, 2021). This form of informal tax practice is not unique to Perum Perhutani but common throughout Javan forests and the Indigenous peoples living in them. As the sole holder of governance rights of production forests across Java, Perum Perhutani applied the same practice informally across all their holdings (Ambarwati et al., 2018; Setya, 2016). Further, the Kasepuhan Karang community was forced to plant Perum Perhutani's main commodities, namely *Shorea spp.* and pine trees *Pinus sp.*, although they did not wish to partake in the programme since it was not in line with their customary forest management. Nonetheless, the Kasepuhan Karang Indigenous people were still permitted to access their *leuweung*. Thus, although conflicts between the government and the Kasepuhan Karang community originated with the Dutch colonial era in the 1700s when the Dutch colonial government imposed plantation development policies (Praboxo et al., 2010), the imposition of national park rules from 2003 restricting access and use was entirely different for the community.

> *So, does conservation have to be all wood? It's very selfish if that is the case even though it is clear that there are indigenous peoples living here. Should my family be fed with wood? Nope. Let's take another look at the notion of conservation.*
>
> A 24-year old from Kasepuhan Karang (Maulida,2019, p. 64)

The expansion of GHSNP to almost triple its original size in 1992 happened without any adequate process to socialise the plan. In fact, around 40%, or 17,163 ha, of the expanded GHSNP boundaries were already agriculture and settlement areas (Prabowo et al., 2010). The expansion did not fulfill the principles of Free, Prior and Informed Consent (FPIC) as regulated in the UN Declaration of the Rights of Indigenous Peoples, which Indonesia is signatory to. Although there are no explicit national regulations on FPIC in Indonesia, it is widely used and known locally as *Persetujuan Berdasarkan Informasi di Awal Tanpa Paksaan*, due to Indonesian Constitution 1945, Article 18B(2) and Article 28I(3) (Republic of Indonesia, n.d.), which recognises Indigenous peoples' (*masyarakat hukum adat*) existence and respect for their traditional rights.

Further, the inadequate consideration and planning of GHSNP expansion can be illustrated by two contradictory MoEF Decrees in 2003. An initial decree stated that GHSNP had expanded from 40,000 to 113,357 ha, however, 24 days later, a second decree stated that the size of GHSNP was back to 40,000 ha (Hakim et al., 2016). The latter was asserted by the Lebak Regency Government, while the MoEF claimed the larger size to be legitimate.

The contradictory decrees notwithstanding, for nearly 13 years, the Kasepuhan Karang Indigenous people's lives were transformed by the complete ban on using forest resources. The community could only access their *leuweung*, now considered State Forests by the State, surreptitiously to avoid being caught and labelled intruders in their own territory. Husbands forbade their wives to go to their forest gardens and paddy fields because they were afraid for their safety (Tillah, 2002). This act of state making or increasing state control in rural territories by expanding conservation areas and delimiting Indigenous Peoples as threats or undesirable in ancestral territories is a phenomenon observed across the world, including elsewhere in Asia (Dongol & Neumann, 2021).

This brief case illustrates some of the impacts of the park extension on the Kasepuhan Karang community:

> In 2014, Mr SL was brought to one of the GHSNP office by the forest ranger because they found him transporting sacks of charcoal made by one of his neighbours, Mrs HN (see Marfu'ah, 2022; Tim Inkuiri Nasional Komnas HAM, 2016). Mrs. HN had prepared the charcoal inside their forest garden area, which is also part of the GHSNP. This incident has caused trauma for them. Since the incident, Mrs. HN has chosen to work in her paddy fields and forest garden located far from her house, instead of producing charcoal out of the leftover twigs, branches or tree cuts in the closer forest garden area (Marfu'ah, 2022) .

The restrictions to access their forest, including their paddy fields, caused not only fear amongst the Kasepuhan Karang Indigenous people, but also decreased the variety and quantity of food that they could collect and harvest from their ancestral forest (Savitri et al., 2011). As a result, vital knowledge around the customary forest (including paddy fields) management and even knowledge of plant names and culinary practices, especially amongst the younger generations started declining. Additionally, Maulida (2019) found that the restriction to access their customary forests have caused changing, if not decreasing, local wisdom in relation to forest resources management, as the community was unable to practice *tatali paranti karuhun* customary laws that are established from interactions with their forests. The lack of secure ownership rights and the impacts of external governance and associated restrictions were thus causing the forceful cultural disintegration and loss of practices essential to the Kasepuhan way of life and identity.

For the Lebak Regency Government, the expansion of GHSNP turned 70% of their jurisdiction into a conservation area, which then became part of the national MoEF's jurisdiction. Essentially, the Lebak Regency Government was unable to provide basic services to these communities that now lived within GHSNP such as the Kasepuhan Karang community. This meant that infrastructure building, such as roads or school, depended on the approval of the MoEF, even if the Lebak Regency government had the budget for it. This is particularly pertinent for education, since Kasepuhan Karang only has an elementary school, and for secondary education and beyond, students have to travel far from home. The average educational level, especially for women, is thus only at elementary level.

The expansion of GHSNP and associated imposition of National Park regulations have caused conflicts between the Kasepuhan Karang community and the GHSNP authority. This conflict is underscored by ontological differences in understandings of forests, or

*leuweung*, common where colonial conservation is imposed on Indigenous communities (González & Kröger, 2020; Htoo et al., 2023).

## Obtaining Customary Forest recognition

As a consequence of the disruption to the Kasepuhan Karang's way of life caused by GHSNP expansion, the community, with the support of the Lebak Regency Government and other Indigenous peoples advocates, decided to obtain recognition of their *leuweung* via *Hutan Adat* titles from the MoEF. This opportunity to obtain their customary forest back occurred after the The Constitutional Court Decree No. 35/PUU-X/2012 (MK35) corrected the definition of Customary Forest in Forestry Law No. 41/1999 to be forest areas owned by the Indigenous peoples/customary community, as part of the Right-based Forest category, instead of State Forests.

Before the MK35, the Forestry Law No. 41/1999 defined Customary Forest as State Forest area managed by the customary community/Indigenous peoples. Although the 1945 Indonesian Constitution, Article 18B (2) and Article 28I (3) recognises Indigenous peoples and their rights in general, under Forestry Law No. 41/1999, a local regulation (*Peraturan Daerah*, or *Perda*) was needed to recognise the Kasepuhan Indigenous people's existence, before they could claim their *Hutan Adat* titles.

The Kasepuhan Karang Indigenous people thus initiated the process for a *Perda* from the Lebak Regency in 2003, following the expansion of GHSNP (Table 8.2 on the chronology of events). They collaborated with Indigenous peoples advocates, such as RMI, Jaringan Kerja Pemetaan Partisipatif (JKPP), Aliansi Masyarakat Adat Nusantara (AMAN), Epistema Institute and Perkumpulan HuMa, to conduct multi-level advocacy with the Lebak Regency Government and higher administrative units that are in the provincial and national government, namely the Banten Province Government (Forestry Agency) and the MoEF. Preparing a *Perda* is a long political process that involves the executive and legislative bodies of the regency, and requires the Indigenous community to navigate drawn-out bureaucratic processes at local (village and regency), provincial and national scales. The allied advocate groups were thus essential to support the Kasepuhan Karang in obtaining the *Perda*, demonstrating the difficulty in gaining rights and the necessity of this form of support to enact these political transformations. This experience underscores the inadequacy of current rights frameworks that often perpetuate colonial legacies and land management practices (Asia Indigenous Peoples Pact et al., 2022), highlighting the need for political and legal transformations in the struggle for Indigenous autonomy in their ancestral territories, particularly when they overlap with areas of important biodiversity (Asia Indigenous Peoples Pact et al., 2022).

Although the *Perda* was not successfully enacted until November 2015, in the spirit of supporting its people, the Regent of Lebak released Decree No. 430/2013 that recognises the existence of 17 Kasepuhan main groups and sub-groups in the Banten Kidul Customary Territory within Lebak Regency, including Kasepuhan Karang. It was easier to release a Regent's Decree because it does not require approval from the regency legislative body (*Dewan Perwakilan Rakyat Daerah*).

Through this decree and the documentation of customary law that was prepared with the participation of the community members, supported by RMI and Perkumpulan HuMa, the Kasepuhan Karang were able to petition for their *Hutan Adat* title deeds

**Table 8.2** The chronology of advocacy, community mobilisation and knowledge management processes towards the recognition of Kasepuhan Karang Indigenous peoples

| | TIME FRAME | DECRIPTION OF ACTIVITIES | PARTIES |
|---|---|---|---|
| **Kesepuhan Karang** | 2003 | > Initial petition to the Central government (formerly the Department of Forestry; currently the Ministry of Environment and Forestry) to exclude customary territory from GHSNP area, supported by Lebak Regency Government<br>> First request for initiation of *Perda* to recognise the Kasepuhan as a customary community | > Kasepuhan Karang members<br>> Kasepuhan Forum (Satuan Adat Banten Kidul)<br>> Jagaraksa Village Government<br>> Lebak Regency Government<br>> Assisting Organisations (RMI)<br>> Network (JKPP, HuMa, Epistema Institute, AMAN)<br>> MoEF |
| | 2013 | > Lebak Regent issues Decree 430/Kep.298/Disdikbud/2013 concerning recognition of the existence of Indigenous peoples in the Banten Kidul Customary Territory | |
| | 2014 | > Initiatives in critical legal education, participatory mapping, local economic development initiatives and action research on customary forests conducted by RMI together with 12 other organisations on 13 customary forests | |
| | 2015 | > The draft of a *Perda* to recognise the Kasepuhan peoples as Indigenous was enlisted in the local legislation programme (Prolegda)<br>> Submission of the petition to MoEF (5 October 2015)<br>> Visit by the Director-General of Social Forestry and Environmental Partnership (MoEF) to Kasepuhan Karang to follow up the community's petition<br>> Lebak Regency's *Perda* 8/2015 issued concerning recognition, protection and empowerment of the Kasepuhan Indigenous Peoples (November 2015) | |
| | 26 October 2016 | > Submission II for the recognition of Kasepuhan Karang Customary Forest to MoEF. | |
| | November 2016 | > Verification and validation of data in the Kasepuhan Karang Customary Forest petition | |
| | 5 December 2016 | > Joint press conference with Indigenous peoples communities of Wana Posangke, Ammatoa Kajang and Marga Serampas entitled, "The Slow Progress of Customary Forest Recognition by the Government", organised by HuMa | |
| | December 2016 | > Exhibiting the results of the verification and validation (21 December 2016)<br>> Establishment of part of the Kasepuhan Karang's Customary Forest (30 December 2016) | |

Source: Tillah et al. (2021).

to the MoEF for the first time in early 2015. However, the first attempt to petition their customary forest recognition based on Lebak Regent's Decree did not succeed, because the MoEF was using the Forestry Law No. 41 (1999) as their reference, which only considers Regional Regulation (*Perda*) as a valid legal instrument to recognise Indigenous peoples within a regency.

This process of petitioning the Kasepuhan Karang's Customary Forest was supported by the Customary Forest Coalition, a coalition of 13 Indigenous peoples and 13 civil society organisations (CSOs) and non-governmental organisations (NGOs) that advocate for customary forest recognition by the State. The Customary Forest Coalition had conducted initiatives in critical legal education, participatory mapping,

local economic development initiatives and action research on 13 customary forests in 2014. However, this initial petition made by Kasepuhan Karang, together with Ammatoa Kajang, Tau Taa Wana Posangke and Marga Serampas Indigenous peoples, failed. The MoEF, referring to Forestry Law No. 41/1999, recognised *Perda* as a form of Indigenous peoples recognition in certain government administrative areas, only if the Indigenous peoples inhabit a forest area that was categorised as state forest, whether production forest (such as that managed by Perum Perhutani), protected forest or conservation forest. Nonetheless, the Director-General of Social Forestry and Environmental Partnership from MoEF visited Kasepuhan Karang as an part of an identification phase.

In November 2015, the Lebak Regency successfully enacted *Perda* No. 8/2015 on the Protection, Recognition and Empowerment of the Kasepuhan Indigenous peoples, including the Kasepuhan Karang and the Kasepuhan Pasir, facilitated by RMI and the Epistema Institute. With the *Perda*, representatives of Kasepuhan Karang once again petitioned for their Customary Forest recognition in October 2016. Following verification and validation in November 2016, the formal recognition in the form of the Customary Forest Recognition Decree by the MoEF was granted and inaugurated the following month by President Joko Widodo himself at the Merdeka Presidential Palace in Jakarta.

Despite the recognition of Kasepuhan Karang's Customary Forest in 2016, there remains work to be done. Due to different paradigms in understanding the concept of forest/*leuweung* as mentioned earlier, the MoEF only recognised the *leuweung tutupan*, *paniisan*, *leuwung titipan* and *Gunung Haruman*/*cawisan* of the community as Kasepuhan Karang's Customary Forest, leaving their *leuweung garapan*/agroforestry area and paddy fields still under the GHSNP/State ownership. The Kasepuhan Karang's Indigenous peoples had petitioned for 796 ha to be excluded from state forest status as their Customary Forest, but the MoEF only recognised 462 ha (in dark blue and orange in Figure 8.3). At the writing of this case study and supported by the Lebak Regent again, the Kasepuhan Karang is petitioning for a further 284 ha of their agroforestry area and paddy fields area (in dark green, purple and yellow in Figure 8.3) to be recognised as their Customary Forest.

## Post-Customary Forest recognition: impacts and implications

Obtaining formal recognition of part of their customary forest has brought many opportunities for the Kasepuhan Karang Indigenous peoples, creating space for positive changes to happen in ecological, economic and social aspects. The sense of having control over and freedom of access to their *leuweung* has provided the needed authority to enhance the governance of the community. This has also resulted in the flourishing of the environment and the benefits derived from nature for the Kasepuhan Karang.

> "What kind of conservation are they talking about? If you say 'sustainable', has the community been destroying the forest all this time? Isn't it that we also need the forest so surely, we will also protect the forest. Now if you call it 'conservation' but the people cannot eat, how do you see it?" said a 24-year old youth from Kasepuhan Karang (Maulida, 2019, p. 64).

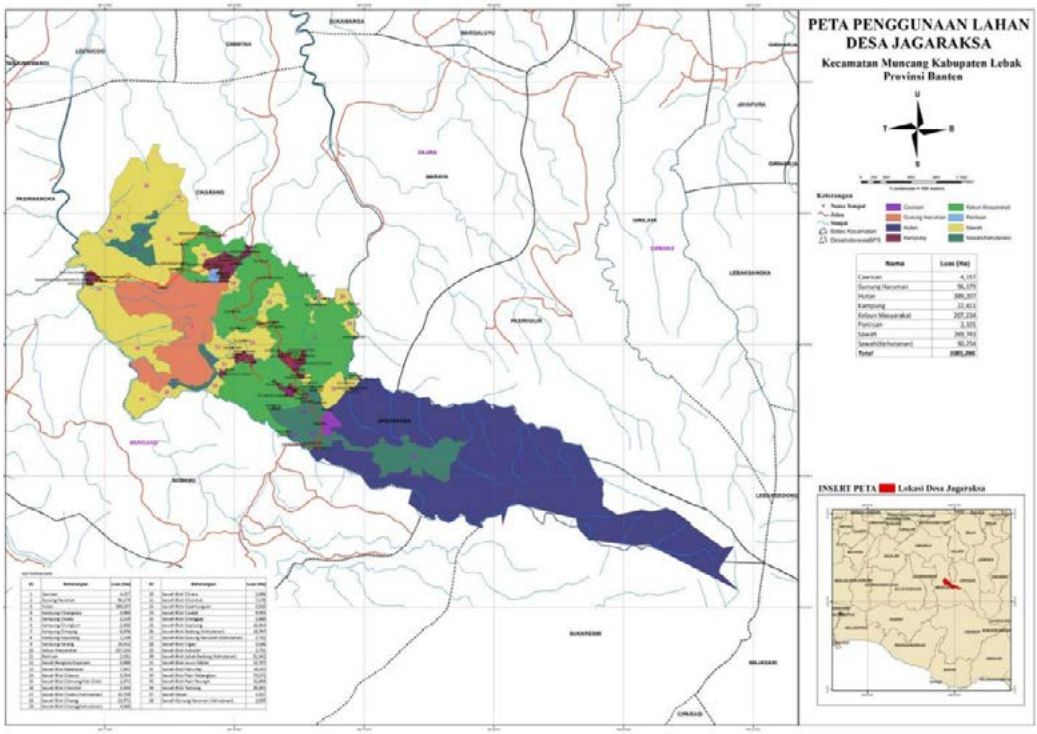



**Figure 8.3**
Land-use map of Kasepuhan Karang customary territory

Source: JKPP & RMI (2014).

Three years after the recognition of the Customary Forest of Kasepuhan Karang, the greater compliance of the Kasepuhan Karang Indigenous people towards their *tatali paranti karuhun*, or customary law, has been associated with a perceived increase in biodiversity (Maulida, 2019). They linked biodiversity to low forest fire incidences, provision of water supply and good condition of water springs, a low level of illegal logging and the provision of diverse foods, especially vegetables from the forests, including rare species (Maulida, 2019). The increased compliance to *tatali paranti karuhun* is linked to the feeling of being part of Kasepuhan Karang. Community members feel an increased pride in their identity with the recognition of their existence by the country's President via their *Hutan Adat* titles (Arum, 2022; Sobirin, 2022; Tillah, 2018).

Following Customary Forest recognition, the community held an assembly to discuss their plans. They wanted to conserve water springs by minimising deforestation while generating income, and decided upon fruit tree planting and developing agroforestry tourism. They decided to grow fruit trees as it complemented their existing livelihoods producing fruits for their own consumption and for the market, while at the same time being able to maintain tree cover for soil and water conservation purposes. Further, apart from aiding their livelihoods and securing biodiversity and forest quality, the planting of these fruit trees on steep slopes along with *jengjeng* trees (*Paraserianthes falcataria*) would help diminish the risk of landslides.

This initial idea then developed into a complex plan that included detailed participatory land mapping and registration, that to some degree also served as a local compliance mechanism for the fruit tree initiative. For the registration to happen, the local leader engaged with several stakeholders from the local government as well as CSOs and community members. Most of the cost for the mapping process was funded by the community members, while technical assistance for the two-year long process

was provided by the local government and CSO partners. The result was a *Risalah* (an ancient Indonesian word translated freely as detailed minutes or treaties), a locally-stipulated and locally-valid land certificate. Within the *Risalah* is a set of information on land ownership (including history of ownership changes) and physical data, such as boundary, natural markers and their coordinates and land use and vegetation, that will serve the community members in monitoring the implementation of the fruit tree initiative. The *Risalah* will play an important role as they set quite an optimistic target of 27,000 fruit trees to be planted in only two years.

In addition to the land registration, the community members also identified three land status categories across their customary territory: critical, semi-critical and potential-critical. Priority areas for the fruit tree planting were determined by this category. During the first year of this tree-planting initiative, the community was able to acquire 8,000 seedlings from the provincial government and another 10,000 seedlings from the regency government. They were all coffee plant (*Coffea arabica*) seedlings that are desired by most of the community members. With the support from the Rainforest Alliance, they have since been able to establish a community nursery that has produced more than 30,000 *C. arabica* seedlings, alongside durian (*Durio zibethinus*), *ampante* (*Garcinia mangostana*), *duku* (*Lansium parasiticum*), *petai* (*Parkia speciosa*) and *kepayang* (*Pangium edule*), totalling more than 120,000 seedlings to this day. To support the fruit tree initiative, they have a unique requirement for anyone planning to conduct a formal visit to their customary territory: bring fruit tree seedlings for the community.

The land registration process and the existence of the *Risalah* also resulted in substantial improvements in the community's livelihood. The recognition of Kasepuhan Karang's Customary Forest provided a sense of security among the community members regarding their tenurial rights. Children are able to play within their *leuweung* areas as their parents perceive it as a safe space. Community members are also able to freely harvest forest products, that is also celebrated in a festival/rituals called *seren taun*, where sets of steps are conducted before and after paddy harvesting activities, until the dry paddy is kept in their granary called *leuit*. The contribution of those products to their livelihoods has been enhanced through cross-learning programmes with other Indigenous groups, such as a 2017 exchange supported by Samdhana Institute and AMAN to the Uaxactun Indigenous peoples community of Guatemala in Reserva de la Biósfera Maya (Mayan Biosphere Reserve), to learn about their women-led cooperatives and harnessing of credit opportunities (Tillah, 2022).

By 2020, three years after recognition, numerous young people have been able to attain higher education. When before, only one child in the village had graduated from high school, today, almost 200 families have been able to invest in university education for their children. Investing in formal education requires sustainable income that was not possible without control over and freedom to access their main resource: *leuweung*.

Despite the positive impacts following formal recognition, the fact remains that most areas that are actively cultivated and accessed by community members for their livelihood (*leuweung garapan)* and were the source of tenurial conflict are yet to be recognised under the current Customary Forest Decree (282.1 ha). The decree only formally recognised areas with dense forest cover that are categorised by the

Kasepuhan Karang as forbidden, restricted and reserved forest (*leuweung titipan*, *leuweung tutupan* and *leuweung cawisan*). Hence, these areas are already highly protected, possibly more so through customary regulations and guardians than when part of GHSNP. But as ironic as it is, this provides concrete evidence that the most critical aspect of customary rights recognition is in fact the sense of security and belonging – in this case, over and towards their customary territory. Both are major enabling factors for community-driven sustainable livelihood initiatives.

From a social perspective, there has also been a clear and observable difference in women and youth involvement as a consequence of Customary Forest recognition. Women and youth were initially not part of the main actors before and during the recognition as the processes were heavily dominated by local elites and adult males. However, following recognition, women and youth developed greater involvement and empowerment in the community.

During the preparation of materials and discussions on strategies regarding obtaining Customary Forest recognition, despite various efforts conducted at the grassroot level with the community, women and youth involvement were generally lacking. Women's perspectives had been deemed sufficiently represented by their husbands or adult males from their family at community meetings, so their aspirations had never really been sought. Even when present, women were generally assigned to prepare the meeting's meals and refreshments. Meanwhile, youth were totally unaware of the importance of this struggle as they did not have access to the forests and associated traditional knowledge. They also lacked pride in calling themselves Kasepuhan Indigenous peoples, since they were marginalised. In school, the Kasepuhan were actively discriminated against, such as being separated from the rest of the class. This structural and systemic racism and discrimination had thus deteriorated the cultural identity of the youth.

The access restrictions imposed by GHSNP also contributed to the deterioration, since the youth were unable to access their *leuweung* and learn about their traditions, or the management of forest gardens, one of the most important components of their traditional forest management. This contributed to their minimal involvement in *leuweung garapan* and the stereotype that the youths were not concerned about land-based or forest-related activities and rather more interested in urban-based professions. Lack of relevant traditional knowledge thus precluded their participation in the process of applying for *Hutan Adat* titles. A failure to understand how political and legal processes interfere with local activities and the transmission of knowledge and traditional values may lead to misguided interventions from other parties, including from the government, to support non-traditional livelihoods and out-migration of youth to cities.

As for the women, they were previously considered to be occupied with productive work, such as going to paddy fields, forest gardens and home building, where they begin chores as early as 4am until late at night. For these reasons, involving women would require extra facilities, time and energy, which are not made readily available. There was also initially resistance to include women by the community, with one leader stating that, "if you [the supporting organisations] are going to do women empowerment activities, please find other Kasepuhans. We are working towards our Customary Forest recognition" (Interview with community leader in 2014). The process of claiming recognition of Kasepuhan Karang Customary Forest was

dominated by adult men, marginalising the roles of women and youth (Tillah et al., 2021). During participatory mapping prior to customary forest recognition, women's knowledge of their territory was not taken into account. The youth were only allowed to operate equipment such as GPS and not given enough time to fully comprehend the significance of the participatory mapping activity. During the community planning stage, Kasepuhan Karang Indigenous women's sections of the customary development plan, as well as those of the youth, were not taken into account in the community planning documents.

When the *Perda* No. 8/2015 on Protection, Recognition and Empowerment of Kasepuhan was enacted, despite the explicit mention of women and youth in the regulation, women and youth had little idea of what it meant for them. This opened the door to socialise and integrate more women and youth participation in the process and address local resistance. After the recognition, during their interview, the Kasepuhan Karang Indigenous women's group, stated that:

> *Women's involvement (in customary institutions) was relegated to being present, listening and providing food and beverages. Women were not involved in other matters (beyond these). Only after the establishment of our Customary Forest were women involved as the managers of a cooperative to support cultivation held in the Customary Forest area.*

After the Kasepuhan Karang Customary Forest recognition, a space was opened for women and youth to be part of their forest governance. This was initially promoted by the supporting NGOs, but the potential social benefits were only fully embraced by male leaders after an international exchange visit with an Indigenous community in Guatemala where women played a central role. Women now hold leadership roles in social enterprises and institutions, for example, a woman is now the chair of the cooperative, linked with the *Risalah* initiative, together with four other women in their 30s. Further, the youth are now tilling their own forest gardens, planting coffee under the shade of tall trees which improves the coffee beans' quality as *kopi leuweung adat* (customary forest coffee), and running the agrotourism business. They have a greatly increased sense of pride in identifying themselves as part of the Indigenous peoples' community.

## Conclusion and recommendations – What we can learn from the recognition of Kasepuhan Karang customary forest

From the expansion of GHSNP into the Kasepuhan Karang customary territory in 2003 to their successful recognition of *Hutan Adat* by the State in 2016, the Kasepuhan Karang Indigenous peoples have shown the vital link between tenure security and thriving customary institutions and community. Obtaining Customary Forest recognition has increased feelings of security and belonging among the Kasepuhan Karang, leading to ecological, economic and social benefits. Indigenous peoples see the protection of their land and resource base as critical to the preservation of their culture and identity, and as a means of strengthening their economic and social well-being. This sense of belonging to their traditional lands provides an essential foundation for the development and maintenance of community

cohesion and the transmission of cultural knowledge from generation to generation (Bankes, 2010, p. 483).

Ecologically, the increase of feelings of security has resulted in the ability to develop a long-term forest management plan by the community. The possibility to manage their forest has created a space for reviving local wisdom that is part of *tatali paranti karuhun*, an essential part of the Kasepuhan Karang Indigenous people's identity. The community has been able to conduct more planting and restoration-oriented activities, facilitating soil and water conservation, in contrast to before when they were afraid even to visit their forest gardens.

Economically, there have been more livelihoods-related activities that have arisen following *Hutan Adat* recognition. Tenure security enabled planting of fruit trees and diversifying income, while the youth have developed ecotourism initiatives. Additionally, there has been increased numbers of forest (*leuweung*) produce, such as vegetables, medicinal herbs and fruits.

Socially, state recognition has increased the confidence of the Kasepuhan Karang members identity and display of their 'indigeneity' (Merlan, 2009). Youth have been reintroduced to their customary laws, including the ones related to sustainable forest management following their *tatali paranti karuhun*, and women are now more involved in the public sphere.

The notion of 'forest conservation' should thus be revisited to incorporate Indigenous peoples' concepts and ontological understandings of living together in harmony with the forest, especially as the case of forest-dwelling communities who consider forests as an integral part of their identity, in contrast with colonial perspectives that separate humans from nature (Adams & Mulligan, 2012). Even with the successful recognition of *Hutan Adat* by the Kasepuhan Karang, the fact remains that their *leuweung garapan*, or forest garden areas, are not considered as forests by the state. We have thus described early benefits and perceptions of success arising from *Hutan Adat* recognition. However, further collaborations between the state and Indigenous peoples who own customary forests will be crucial to mitigate risks, and ensure the success of such customary forest recognition. This will involve some collaboration on monitoring and evaluation of the impacts of post *Hutan Adat* recognition, mutual learning and exchange and landscape level governance processes between Kasepuhan Karang Indigenous community and GHSNP.

From the example of the Kasepuhan Karang, the various stakeholders (government bodies, Indigenous communities and advocates) can learn how this form of recognition and revitalising of Indigenous customary governance has to be seen as the primary way for conservation to meet social and ecological objectives in the future, and especially for initiatives aiming to meet the new global biodiversity targets (as it aligns with the principles for equity and rights).

The customary institutions and Indigenous knowledge systems make global contributions, representing a system for sustainable, resilient governance of land and resources as well as cultural resilience. Compared to the state-led protectionist approach, which created material hardship, conflict and cultural harm, the customary forest management more effectively contributes to conserving the forest, in alignment with supporting the well-being of the Kasepuhan Karang Indigenous people.

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