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Transformative Biodiversity Governance for Protected and Conserved Areas

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11.1 Introduction

This chapter analyzes the potential for transformative change for biodiversity conservation in the governance of protected areas and other conserved areas (which incorporates other effective area-based conservation measures or OECMs). This is achieved by analyzing efforts to achieve Aichi Target 11 under the UN Convention on Biological Diversity (CBD) strategic plan to 2020, and discussing the need for a new outcome-based approach under the CBD's Post-2020 Global Biodiversity Framework (GBF), which is under discussion at the time of writing but expected to be adopted during 2022. Under Aichi Target 11,[1] governments collectively agreed to designate 17 percent of terrestrial and inland waters and 10 percent of coastal and marine areas as protected areas and OECMs that are effectively and equitably managed, ecologically representative, well connected and integrated into the wider landscape and seascape. It is widely considered to be the Aichi Target that governments have made most progress on delivering (UNEP-WCMC et al., 2018).

The issue is discussed here through the conceptual lens of transformative governance, which is defined in Chapter 1 of this book and is understood to address the underlying causes of biodiversity loss through governance mechanisms that are *integrative*, *inclusive*, *transdisciplinary*, *anticipatory* and *adaptive* (Chaffin et al., 2016; Guston, 2014). How to follow up Aichi Target 11 with a new area-based target has formed a key part of the CBD discussions in advance of the adoption of a new Post-2020 GBF. A range of perspectives emerged during these discussions. These can be summarized as: full implementation of Aichi Target 11; more ambitious area-based targets (such as a 30 percent area-based target or "half-earth" approach); "new conservation," which intends to integrate conservation with neoliberal economic approaches; and a "whole earth" approach, which aims to find a balance between human and nonhuman needs (Bhola et al., 2020, see also Chapter 12). This chapter does not fit neatly within any of these categories but contributes to the discussion by recognizing the valuable role played by protected and conserved areas, and the need for their continued prioritization at the policy level, and provides recommendations for their implementation under the Post-2020 GBF.

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[1] The full text of CBD Aichi Target 11 is: "By 2020, at least 17 per cent of terrestrial and inland water, and 10 per cent of coastal and marine areas, especially areas of particular importance for biodiversity and ecosystem services, are conserved through effectively and equitably managed, ecologically representative and well connected systems of protected areas and other effective area-based conservation measures, and integrated into the wider landscapes and seascapes."

We understand transformative change in the context of protected and conserved area governance as referring to their contribution to the effective conservation of existing biodiversity, as well as its restoration, where possible. This chapter thus begins with an introduction to protected and conserved area governance, before examining the extent to which Aichi Target 11 has stimulated action to achieve effective biodiversity conservation outcomes. Outcomes are understood as being the consequences of project interventions and provide reliable indicators of long-term conservation impacts, either success or failure (Howe and Milner-Gulland, 2012; Kapos et al., 2009). Biodiversity outcomes as used in this chapter refer to the status of biodiversity elements such as species and ecosystems. Equity outcomes refer to the fair sharing of power, responsibility and benefits in natural resource management, as well as strengthening governance arrangements including legal entitlements and making decisions more transparent, inclusive and equitable.

We therefore first review the academic literature on protected and conserved areas through the lens of transformative governance (in Section 11.2), including recent literature analyzing the strengths and weaknesses of policy efforts to reach Aichi Target 11 (in Section 11.3). In Section 11.4, we use three case studies through which to explore the transformative change needed, before drawing conclusions related to the potential for a new outcome-based approach to protected and conserved area governance. The three case studies were selected to encompass different continents (Africa, Asia and Latin America), different ecosystems (terrestrial and marine) and different governance approaches.

11.2 Governance of Protected and Conserved Areas

Protected areas have been viewed as a mainstay of actions to conserve biodiversity and have long been at the fore of conservation and research efforts (Andam et al., 2008; Rands et al., 2010). It has been shown that well-managed protected areas are effective in conserving biodiversity and can reduce habitat loss and maintain species populations (Bruner et al., 2001; Leverington et al., 2010; Watson et al., 2014), as well as provide a range of societal benefits (Stolton and Dudley, 2010). The widely accepted International Union for the Conservation of Nature (IUCN) definition of protected areas is "a clearly defined geographical space, recognized, dedicated and managed, through legal or other effective means, to achieve the long-term conservation of nature with associated ecosystem services and cultural values" (Dudley, 2008). This places nature conservation objectives firmly at the center. They have a prominent position within global environmental governance fora, such as the CBD, which has a dedicated program of work on protected areas, and have long been promoted as an important conservation tool by IUCN and its member organizations through the World Commission on Protected Areas (WCPA). Other international environmental conventions have also placed a high importance on designating and managing protected areas, such as the Ramsar Convention on Wetlands of International Importance and the World Heritage Convention concerning the Protection of the World's Cultural and Natural Heritage (agreed in 1971 and 1972, respectively).

The concept of other effective area-based conservation measures (or OECMs) was introduced for the first time in the international policy arena in 2010, as an additional way by which national governments could meet Aichi Target 11. At the time, there was no accepted definition, and it was not until 2018 that the CBD adopted a decision that defined OECMs as "a geographically defined area other than a Protected Area, which is governed and managed in ways that achieve positive and sustained long-term outcomes for the in situ conservation of biodiversity, with associated ecosystem functions and services and where applicable, cultural, spiritual, socio–economic, and other locally relevant values" (CBD, 2018). OECMs are expected to involve a wider array of stakeholders in governance arrangements, particularly IPLCs, and spiritual and religious groups (Laffoley et al., 2017), and provide an opportunity to engage rights-holders and promote equitable and diverse partnerships in conservation efforts (IUCN-WCPA, 2019). Their governance arrangements are therefore expected to be more complex than those of traditional protected areas and are likely to require strengthening or the gaining of official recognition of informal arrangements (Dudley et al., 2018). OECMs are now commonly referred to as "conserved areas," which is the term we adopt throughout the rest of this chapter.

Protected area governance is well-documented in the academic literature and has been influenced by integrative governance (IG) concepts (Visseren-Hamakers, 2015; 2018). This includes polycentric governance, under which there are several centers of decision-making (Carlisle and Gruby, 2019), and multilevel governance, in which decision-making takes place at different scales in support of common goals (Bennett and Satterfield, 2018). Terrestrial protected areas, for example, have been heavily influenced by multilevel collaborative governance with growing interest in scaling-up to the landscape level with an increased focus on transboundary and connectivity issues (Lockwood, 2010). Forests, in particular, have been valued for assets other than biodiversity, notably for timber, and more recently for carbon sequestration and, as a consequence, governance arrangements and stakeholder engagement for forest areas are often complex (Nagendra and Ostrom, 2012; Reinecke et al., 2014). Forest governance also reflects IG approaches and has been heavily influenced by the concept of networked governance, which recognizes diverse configurations of stakeholders interacting at multiple levels, with a diffusion of authority (Jedd and Bixler, 2015). Marine protected areas (MPAs) have similarly been highly influenced by shared governance approaches between governments and local communities (Bown et al., 2013). Locally managed marine areas (LMMAs), in which nearshore waters are actively managed by communities, have been widely adopted across the tropical western Pacific, for example, as a way of achieving biodiversity conservation and fisheries management objectives simultaneously (Jupiter et al., 2014).

Protected area governance has also been influenced by particular concepts under the transformative governance agenda. In addition to adopting increasingly *integrative* approaches, protected and conserved area governance has also become more *inclusive* and *adaptive.* Recent efforts to scale-up both terrestrial and marine protected areas to the landscape/seascape scale, for example, including through the newer emphasis now being given to conserved areas, have moved toward more *inclusive* forms of governance, including by the increased and more formal involvement of IPLCs in governance mechanisms

(Premauer and Berkes, 2015). Studies indicate that *adaptive* management approaches that have integrated local communities in co-governance arrangements have been the most successful for terrestrial protected areas (Dawson et al., 2018; Premauer and Berkes, 2015). Similarly, the most successful approaches to MPA governance have found a balance between top-down and bottom-up approaches with a diversity of institutions involved (McCay and Jones, 2011) that take an *adaptive* approach with room for experimentation in management strategies (Bown et al., 2013). A global analysis of both marine and terrestrial protected areas by Oldekop et al. (2015) suggested that conservation benefits for biodiversity were highest when protected areas also delivered positive socioeconomic outcomes for local people, and that a co-management approach between local communities and conservation organizations delivered the greatest benefits to both local people and biodiversity.

Although the study by Oldekop et al. (2015) supports the joint achievement of biodiversity and socioeconomic outcomes, it is important to recognize that in practice protected area governance is impacted by debates concerning the ownership of, access to and governance of natural resources (Ostrom, 1990). Tensions often exist over competing objectives to be achieved (Anthony and Szabo, 2011) and have increased in complexity due to expectations that protected areas will achieve a wide range of objectives (Watson et al., 2014). In high-income countries this tends to reflect an increasing move toward achieving multiuse areas for a wide range of social and economic goals and ensuring the continuation of a range of ecosystem services (Hammer et al., 2012). In low-income countries, such tensions are often more concerned with how to enable local, and often marginalized, communities to achieve social and economic justice and livelihood goals, alongside nature conservation goals (McShane et al., 2011; Shahabuddin and Rao, 2010). This situation is likely to increase in complexity with the more recent inclusion of conserved areas, as by their very definition biodiversity conservation is not necessarily the main objective but is rather one of a number of objectives or an outcome resulting from management that is primarily for another purpose other than conservation. The management of trade-offs is, therefore, potentially even more complex in the case of conserved areas and there are still no commonly agreed minimum criteria of accepted biodiversity outcomes for potential OECMs that can be managed for purposes other than biodiversity conservation. Discussion is ongoing, for example, regarding the appropriate balance between biodiversity conservation and fisheries management objectives for conserved areas (Diz et al., 2018).

Resolving such issues and achieving conservation and socioeconomic outcomes is related to both the quality of protected and conserved area governance as well as management effectiveness, and there is often blurring and confusion between these two issues (Lockwood, 2010). While protected area management is concerned with the means and actions to achieve given objectives, protected area governance is concerned with decisions on what the objectives are, how decisions are taken and who has power, authority and responsibility and should be held accountable (Borrini-Feyerabend and Hill, 2015). In the last few decades there has been a shift from mostly state-driven, top-down governance approaches to a range of approaches to protected area governance, summarized in

a typology adopted by the IUCN (Lockwood, 2010). It encompasses four main types: state governance; shared governance, which is more collaborative in nature between state and nonstate actors; private governance (i.e. governance by nonstate actors) and governance by IPLCs (Borrini-Feyerabend et al., 2013). This IUCN categorization by governance-type is distinct from but complementary to the more widely cited IUCN protected area categories system, which classifies protected areas according to their management objectives (Dudley, 2008).

Increasing attention has been given to assessing the management effectiveness of protected areas (for example, Bruner et al., 2001 and Leverington et al., 2010), but this has not been matched by efforts to examine whether protected area management and governance are leading to positive outcomes for biodiversity. This is despite the recent boom in satellite remote sensing tools that can provide relatively cheap and rapid assessments of terrestrial biodiversity (Luque et al., 2018), including for tropical forest ecosystems (Mulatu et al., 2017). In particular, little attention has been paid to the role of protected area governance in achieving effective conservation (and, where relevant, restoration) of biodiversity, and the role of conserved areas in this regard needs further examination. It is particularly important to examine biodiversity outcomes in the context of increasing pressures from a range of underlying drivers linked to unsustainable, global patterns of consumption and trade (Folke et al., 2019). There has been limited examination, for example, of how effective the approach set by the overarching international biodiversity governance agenda has been in stimulating action toward achieving biodiversity outcomes and addressing underlying drivers of loss. In the next section, we thus turn to considering the overall strengths and weaknesses of protected area governance approaches agreed at the international policy level, by examining the implementation of the Aichi Targets (2011–2020) through a transformative governance lens and further analyzing the new and growing role of conserved areas.

11.3 Strengths and Weaknesses of International Policy Approaches to Protected and Conserved Area Governance

11.3.1 CBD Aichi Target 11

Although the prominence of protected areas within the CBD and other international environmental conventions has ensured that high-level goals exist to stimulate government action, there has been a clear gap between such aspirational targets and the realization of actual outcomes on the ground. Lack of national level implementation is commonly cited as a problem and has been referred to as "perhaps the most significant factor in the failure of international biodiversity law" (Jóhannsdóttir et al., 2010:146), including the implementation of provisions under the CBD that are soft and open-ended in nature. There has been a lack of implementation of national biodiversity strategies and action plans (NBSAPs) in many countries, with limited progress made toward achieving many of the Aichi Biodiversity Targets set in 2010 (Buchanan et al., 2020; Maxwell et al., 2020; also see Chapter 3). CBD Aichi Target 11, however, provided a quantified target for the percentage

of terrestrial (17 percent) and marine (10 percent) areas to be conserved and has been more successful than the other Aichi targets in stimulating government action. The coverage of terrestrial protected areas, for example, increased from 10.9 percent in 2011[2] to 14.9 percent in 2018 (UNEP-WCMC et al., 2018). The growth of MPAs has been particularly dramatic in recent years, with a fifteen-fold increase since 1993 when the CBD came into force, to a total of 16.8 percent of national waters having been designated by 2018 (UNEP-WCMC et al., 2018). According to the World Database on Protected Areas, the global coverage of terrestrial and marine protected areas as of January 2021 is 16 percent and 8 percent respectively.[3] Although Aichi Target 11 brought the designation of protected areas to the fore, much less attention has been paid to implementing the second half of the target, which is concerned with ensuring that such protected areas are *effectively and equitably managed*, and *ecologically representative* (Maxwell et al., 2020; Watson et al., 2016a), as we next discuss.

Effective Management

Efforts have been made to assess the management effectiveness of protected areas in the academic literature (for example analyses by Bruner et al., 2001 and Leverington et al., 2010), by IUCN and through publicly funded partnership initiatives. One such example is the European Union (EU) funded BIOPAMA program, managed by IUCN, which aims to support data management and analysis in Africa, Caribbean and Pacific (ACP) countries to facilitate better decision-making for protected areas.[4] A range of new tools have been developed, such as the Protected Areas database on Protected Area Management Effectiveness (PAME),[5] the Integrated Management Effectiveness Tool (IMET), the Management Effectiveness Tracking Tool (METT) (Hockings et al., 2018), and the IUCN green list of protected and conserved areas (IUCN and WCPA, 2017), a certification program and standard for the effective management and fair governance of protected and conserved areas. One weakness of some of these approaches has been the focus on management structures and procedures, with less attention given to assessing whether protected areas are effectively conserving and restoring biodiversity, which cannot necessarily be inferred from PAME assessments (Coad et al., 2015; Maxwell et al., 2020).

Furthermore, efforts made to assess management effectiveness have not necessarily been matched by efforts by national governments to support work on the ground to protect biodiversity within sites (Geldmann et al., 2021). Studies that intersect these Earth observation data with networks of protected areas (so as to assess their effectiveness) show that many protected areas slow, but fail to halt, human pressures and biodiversity loss within their borders (Verma et al., 2019). Protected area management is unable to address many of the underlying drivers of biodiversity loss linked to unsustainable production and consumption patterns and global trade, which is placing increasing pressure on biodiversity around the world (Folke et al., 2019). At least a third of protected areas are reported to be facing intense human pressure (Jones et al., 2018b),

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[2] www.cbd.int/gbo/gbo4/gbo4-draft2-tech-doc-chapter-11-en.pdf
[3] UN Environment – WCMC World Database of Protected Areas. www.protectedplanet.net/en.   [4] www.biopama.org.
[5] https://pame.protectedplanet.net.

and around 40 percent of protected areas globally are estimated to face major deficiencies in management (Leverington et al., 2010), making it difficult to resist and adapt to such pressures. The study by Jones and colleagues (2018b) also found that human pressure had increased in 55 percent of protected areas between 1993 and 2009. Deficiencies in m*anagement effectiveness* are partly due to a lack of allocation of the necessary finance and resources, including of well-trained staff responsible for site management (Geldmann et al., 2018). The general lack of finance for protected areas is well-documented (for example, McCarthy et al., 2012; Waldron et al., 2013), with the Global South facing the greatest shortfalls in budgets and staffing (Coad et al., 2019).

Equitable Management

Governments have also given insufficient attention to achieving the *equitable management* component of Aichi Target 11 (Hagerman and Pelai, 2016). This is despite an increase in co-governance arrangements with an increasing trend of participation in biodiversity governance from nonstate actors and the emergence of multistakeholder partnerships, such as the Congo Basin Forest Partnership (CBFP) (Pattberg et al., 2017), which could represent a shift toward more *inclusive* forms of governance. The EU, for example, has been supporting public–private partnerships (PPPs) as a key tool for protected area governance, through its development aid programs (European Commission, 2014). In the case of MPAs, a key challenge is how to ensure that local communities remain meaningfully involved in governance with a greater focus on increasing the coverage of areas under designation and on scaling-up (Gruby and Basurto, 2014; McCay and Jones, 2011). Progress has also been limited toward achieving CBD Aichi Target 18, which was dedicated to the full and effective participation of IPLCs, but which did not provide a measurable target (Fajardo et al., 2021).

The importance of equity considerations is not to be underestimated, particularly as the scale and global importance of involvement by Indigenous Peoples in protected area governance is now becoming apparent. A recent study showed such communities impact the governance of approximately 40 percent of sites worldwide (Garnett et al., 2018), and the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) Global Assessment recognized their involvement as critical to achieving transformative governance (IPBES, 2019). The valuable contribution made by Indigenous People to conservation is particularly significant in the case of forests (Fa et al., 2020), which harbor around 75 percent of global terrestrial biodiversity (FAO, 2016). The need to halt tropical deforestation is recognized as being one of the most pressing and urgent global environmental challenges (Franklin and Pindyck, 2018), with CBD Aichi Target 5 aiming to halve, and where feasible bring to zero, the loss of natural habitats including forests. Primary tropical forest is of disproportionate value for biodiversity and ecosystem services (Morales-Hidalgo et al., 2015), but forest loss continues unabated in low-income tropical countries (Keenan et al., 2015). Although the conservation outcomes achieved by community conserved areas (CCAs) vary widely depending on the context (Rao et al., 2016), there is increasing evidence that securing land rights for Indigenous Peoples over forest land is an

effective and important conservation management strategy (Fa et al., 2020; Oliveira et al., 2007; Watson et al., 2018).

Furthermore, governance by Indigenous Peoples is having a positive conservation impact outside of protected areas, with studies showing that areas under their governance harbor as much biodiversity as protected areas (Schuster et al., 2019; Sheil et al., 2015). The high focus on site designation contrasts strongly with the very limited attention given to delivering Aichi Targets concerned with conserving biodiversity outside of protected areas, including lands governed by Indigenous People (Hagerman and Pelai, 2016). Although many of the Aichi Targets are concerned with areas outside of protected areas, very little attention has been given to the 83 percent and 90 percent of undesignated terrestrial and marine areas, respectively. This is despite the significant biodiversity and ecosystem services they harbor and provide, which if lost would be an unmitigated disaster for both nature and people (Jones et al., 2018a; Maron et al., 2018).

Ecological Representation

Limited attention has also been given to ensuring the *ecological representativeness* component of Aichi Target 11. There is evidence that protected area designation has not necessarily targeted areas with high levels of threatened species but has instead been established in areas that minimize conflicts with agriculturally suitable land (Venter et al., 2017). The same is true of MPAs, which have failed to include all ecoregions, with area selection being influenced by socioeconomic factors (Jantke et al., 2018). Existing tools such as the global standard for identifying key biodiversity areas (KBAs) (IUCN, 2016), for example, could help governments identify the most valuable areas for biodiversity, but no such standard has been formally adopted by governments globally to help guide designation of protected and conserved areas (Visconti et al., 2019). Although the CBD Aichi Targets are global, they are often interpreted at a national level, with an assumption that all governments will try to achieve the 17 percent and 10 percent targets within their countries. Within the EU, an approach was adopted under the Birds and Habitats Directives that enabled a network of protected areas (known as Natura 2000) to be selected based on ecological representativeness at the continental level (Maiorano et al., 2015). No equivalent framework exists at the global level by which to incentivize countries with disproportionately high levels of biodiversity, such as megadiverse countries (Yang et al., 2020), to designate a larger percentage area of their territories. This lack of incentive is compounded by the overlap of key areas for biodiversity with areas facing high levels of poverty (Fisher and Christopher, 2007), with low-income countries facing the greatest relative shortfalls in site designation that would ensure ecological representativeness (Butchart et al., 2015).

11.3.2 *Influence of the International Climate and Forest Governance Agendas*

Protected area governance has been strongly influenced during the past decade by the climate regime, not least due to the introduction of the REDD+ initiative under the UN Framework Convention on Climate Change (UNFCCC), which aims to reduce carbon

emissions from deforestation and forest degradation and encourage the conservation and enhancement of forest carbon stocks (UNFCCC, 2007). Although REDD+ was intended to target areas where deforestation is highest, in many cases this has included protected areas with large expanses of forest habitat (Scharlemann et al., 2010). This new focus on carbon as the main value to be conserved represented a departure from previous forest governance approaches, which had tended to focus on finding a balance between biodiversity conservation and economic use, notably timber extraction (McDermott, 2014). The involvement of new stakeholders from a climate perspective has brought an extra level of complexity and stimulated networked forest governance arrangements (Reinecke et al., 2014; Visseren-Hamakers et al., 2012).

In its early days, REDD+ was mainly implemented through projects that targeted specific forest areas, and in many cases such projects were spearheaded by conservation organizations (see, for example, Ferguson, 2009). As REDD+ has evolved, however, there has been a shift toward implementation through *integrative* and *transdisciplinary* governance approaches at the landscape level that engage stakeholders from different land-use sectors. Agribusiness companies seeking to reduce their impacts on deforestation, for example, have engaged in initiatives such as deforestation-free supply chains, sustainable commodity roundtables and certification schemes (Boucher and Elias, 2013). This is often supported by provincial governments working to deliver emission reductions as part of nested efforts to deliver nationally appropriate mitigation actions (NAMAs), for example, through low emission rural development (LED-R) activities (Nepstad et al., 2013). Such initiatives, which have developed subsequent to the adoption of the Aichi Biodiversity Targets, may overlap with efforts to scale-up terrestrial protected areas to the landscape scale and to designate conserved areas. This is expected to lead to more complexity and confusion in governance mandates due to the diversity of stakeholders involved who represent different interests, and bring different perspectives of "landscape" as either ecosystems and habitats, commodity production areas, administrative areas or territories with land rights (Weatherley-Singh and Gupta, 2017).

In sum, under the framework of the Aichi Targets, the considerable progress made by national governments in designating sites has not been matched by efforts to ensure effective and equitable management, nor ecological representativeness, combined with limited consideration as to how to achieve conservation outcomes for biodiversity. Efforts made to achieve Target 11 have been undermined by the lack of progress in achieving other Aichi Targets, which are complementary and necessary to fully address the drivers of biodiversity loss but more difficult to measure and achieve. This includes targets that are concerned with conserving biodiversity outside of protected areas, for example Target 5, which aims to "at least halve, and where feasible bring close to zero, the rate of loss of all natural habitats"; Target 10, which is concerned with decreasing pressures on coral reefs; Target 7, on the sustainable management of areas under agriculture, forestry or aquaculture; Target 15, on enhancing ecosystem resilience; and Target 18, on the full and effective participation of IPLCs (Fajardo et al., 2021; Hagerman and Pelai, 2016; Watson et al., 2016b). There has also been little effort by high-income and importing countries to achieve

Aichi Targets that focus on underlying drivers of biodiversity loss, such as Target 3 on the phasing out of harmful subsidies, and Target 4 on sustainable consumption and production.

There is, therefore, a need to ensure that protected and conserved area governance approaches (including international targets) achieve a better balance between site designation, and equitable and effective management and ecological representativeness. Furthermore, the impact on governance of newer landscape approaches, both due to the relatively recent inclusion of conserved areas as well as the engagement of new stakeholders from the climate sector, is still unclear. To inform this discussion, in the next section, we analyze the links between governance and biodiversity outcomes at the field level, from which lessons can be learned to inform recommendations for a transformative GBF.

11.4 A Transformative Policy Agenda: An Outcome-Based Approach to Protected and Conserved Area Governance

The last decade under the policy framework of the Aichi Targets has not provided a transformative governance agenda with clear outcomes for biodiversity conservation. We therefore discuss some of the policy and governance changes needed to redress this issue through an approach based on achieving biodiversity outcomes, in the light of the Post-2020 GBF and the growing importance of conserved areas. We draw on three case study examples that highlight how incorporating different transformative governance approaches can work in practice.

11.4.1 Case Studies

In this section, we present three case studies of protected areas and/or conserved areas with different forms of governance, in which the Wildlife Conservation Society (WCS) has been working, in order to draw some common lessons to inform a transformative policy agenda. The three selected case studies provide examples from different continental regions, varying ecosystem types and a range of governance scales and approaches. The first is Makira National Park and REDD+ project in Madagascar, the second is Kyeintali marine fisheries OECM in Myanmar, and the third is the Madidi-Tombopata Landscape in Bolivia and Peru (an area which encompasses both protected areas and OECMs).

Makira National Park and REDD+ Project

Makira National Park in the MaMaBay landscape in northeast Madagascar makes up the largest remaining intact humid rainforest in Madagascar, a country known for its unique endemic biodiversity. Containing half of Madagascar's remaining coastal forest, a quarter of its lowland forest, 50 percent of all its flowering plant species, as well as coral reefs, mangroves and wetlands, the MaMaBay forest landscape receives some of the highest rainfall rates in the country. Despite its size and importance, the forests of Makira remain under threat from deforestation and unsustainable natural resource extraction. As the human

population grows, traditional hillside rice cultivation (known as "*tavy*") has become a major driver of forest loss.

The Makira National Park is managed collaboratively by the WCS as a "delegated manager" with "local community managers" of natural renewable resources,[6] thereby providing an example of *inclusive* governance. This institutional arrangement is based on Madagascar's 1996 Secured Local Managed Forests (GELOSE) Law and the 2001 Contracted Management of Forests Decree, which delegate the management of some natural resources to Community Based Groups (COBAs). These rules and regulations underline local communities as the main actors in forest management and restore the legitimacy of local management of common resources (Sarrasin, 2009). The Makira project is one of the world's first forest carbon mitigation projects (thereby demonstrating an *integrative* approach), and at times REDD+ has provided a financial mechanism through which to fund the activities of COBAs and provide benefits to communities, although it has been necessary to secure supplementary income from official development assistance (ODA).

Combined efforts by WCS and the COBAs has strengthened the overall management structure of the Makira National Park. Park staff now work with communities to promote the sustainable use of natural resources through awareness-raising of COBA rules and regulations and environmental education activities. This is resulting in a decrease of anthropic pressure on the forests, demonstrated by the reduction of slash and burn, illegal settlements and clearing. For example, there was a decrease in the areas cleared from 834 to 605 hectares between 2016 and 2018. Improving the situation in future will require the reinforcement of joint patrols and enhancing access to justice for local communities, including by tackling some of the underlying drivers of biodiversity loss, such as corruption.

Kyeintali, Marine Fisheries Co-management Area

Kyeintali is located in the southern Rakhine state of Myanmar, one of the country's poorest regions. Seventy-eight percent of the population live in poverty and over 80 percent are largely dependent on small-scale fishing for their livelihoods and subsistence. Traditional fishers (primarily men) and fish-workers who process the fish (primarily women) are rarely involved in decision-making or planning processes (Matthews et al., 2020). These coastal households are highly susceptible to impacts from the evident fisheries depletion. Recent interviews suggest that catches have more than halved in the past few years and provide evidence of bycatch of threatened species, though information is guarded and poorly documented (WCS, 2018).

The Kyeintali Inshore Fisheries Co-Management Area is now governed by the Kyeintali Inshore Fisheries Co-Management Association (KIFCA), which includes local community members (one man and one woman from each nearby village). Advisory and working committees composed of representatives from the government, police and Rakhine Fisheries Partnership support KIFCA. These groups were formed after a lengthy participatory process facilitated by WCS, which included the collection of scientific data on fishing

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[6] Annual report of Makira National Park and Annual Operational Plan.

activities, biodiversity and socioeconomic needs; detailed consultations with the fishing dependent communities and management planning in which the communities proposed their own no-take zones, seasonally closed areas, gear-restricted zones and protected turtle nesting beaches (Exeter et al., 2021; WCS, 2018). Following this process, the area was officially accepted by the government in 2018 as Myanmar's first marine fisheries co-management area (Latt, 2019).

Factors critical to success include *inclusive* and *adaptive* governance approaches. The engagement and recognition of the needs of all local stakeholders, combined with coordination of activities among the fisheries department, local coastal conservation association and local communities, for example, has been very important. Support from the Rakhine Fisheries Partnership helped secure strong relationships with Kyeintali fishers. This engagement was further supported by fair and open elections to select members of the management association, with efforts made to deliberately include women from the communities. Management decisions by the participants and stakeholders are also being supported by scientific evidence (primarily through GPS-based tracking of fishing activity, and household and market surveys), with the potential for *adaptive* management based on the outcomes of scientific surveys.

The process for developing the co-management area was slower than anticipated because this decentralized form of management is very new in this national context. However, other communities are now interested in developing similar management schemes. As the zoned areas were proposed by the communities themselves, it is expected that levels of compliance will be high. Such compliance will be key, as one of the greatest limitations to achieving sustainable fishing in coastal Myanmar is a lack of enforcement of marine-related regulations. In areas where enforcement is low, compliance must be won through local support, therefore a co-management area in which communities have a strong voice can be an appropriate strategy to recover local fish stocks, while also achieving biodiversity outcomes as a complementary goal.

Greater Madidi-Tombopata Landscape

The Madidi-Tambopata landscape is found in northwestern Bolivia and neighboring Peru and stretches from the High Andes to the tropical lowlands. It covers 14 million hectares, five national protected areas, three subnational protected areas and eight indigenous territories, as well as communities of ten indigenous groups, providing an example of *inclusive* governance. Connectivity and overlap between protected areas and indigenous lands across the Amazon is critical to maintaining intact forests, which are necessary for wide ranging species, such as the jaguar, as well as for maintaining globally important ecosystem services such as climate mitigation and freshwater provision (Painter et al., 2017). The WCS has been working in the Greater Madidi-Tambopata landscape in Bolivia for two decades to support efforts by Indigenous People to secure legal recognition of their ancestral territories and increase their capacity to manage their lands and waters.

This is partly being achieved by the development of Indigenous Life Plans (or territorial management plans) for 1.8 million hectares of titled and claimed Indigenous territory. These

plans enable Indigenous People to protect their lands, as well as using and managing natural resources in line with environmental, social and economic sustainability criteria, reflecting an *inclusive* and *integrative* approach. Such plans also contribute to the preservation of indigenous cultural identity and the revalorization of ancestral knowledge. They identify areas for achieving integrated conservation and development objectives, as well as connectivity corridors that link protected areas and Indigenous territories, to enhance the conservation of intact forest and healthy wildlife populations.

Management capacity-building processes have resulted in increased awareness among IPLCs of the environmental, economic and sociocultural value of their territories and have helped to secure local land rights. Local Indigenous People have worked together in the ordering and titling of their territories and benefit from increased security in access to and use of natural resources and the development of productive enterprises. The lives of Amazonian Indigenous Peoples depend on maintaining a harmonious relationship with nature for their spiritual, social, cultural and economic development. The Indigenous territorial management model has been developed by Indigenous People from their perspective and cultural identity, and also strengthens their commitment to conservation.

These three case studies demonstrate the critical importance of incorporating elements of transformative governance (particularly *inclusive*, *integrative* and *adaptive* approaches) to long-term success at the local level. In the next section, we draw some recommendations and discuss how these can benefit the development and implementation of policies at the international level under the Post-2020 GBF.

11.4.2 *Moving toward a Transformative, Outcome-Based Approach to Conservation*

As described in Section 11.3.1, implementation of Aichi Target 11 over the past decade has mainly focused on site designation, with limited attention given to achieving the second half of the target, relating to effective and equitable management and ecological representativeness. Instead of a quantified target that reflects the size of the area designated combined with measures of effective management, a transformative governance agenda for protected areas under the Post-2020 GBF needs to be based on achieving measurable outcomes for biodiversity. Discussions on the Post-2020 GBF, which are still ongoing at the time of writing, have still tended to focus on extending the coverage of protected and conserved areas (Bhola et al., 2020; Woodley et al., 2019), but parallel discussions on measurable biodiversity targets (Díaz et al., 2020; Geldmann et al., 2021), combined with increasing recognition of the need to integrate IPLCs, means there is scope for the implementation of an outcome-based goal.

As shown by the three preceding case studies, achieving equitable management goals by involving IPLCs in the governance and management of protected and conserved areas and landscapes is a slow and time-consuming process but absolutely vital to ensuring conservation goals are achieved in the long term. The elements of transformative governance that have been incorporated within the case studies have not only been *inclusive* of IPLCs, but have worked toward ensuring the recognition and enforcement of their rights. The case

studies demonstrate that a range of actions are needed, depending on the context, to ensure ownership and buy-in of IPLCs as well as achieving conservation outcomes. These actions may involve environmental education, strengthening of community access to and rights over land, enforcement measures, spatial planning and tools that enable scientific findings to be combined with local knowledge. As highlighted in the example from Myanmar, an *inclusive* approach is associated with increased compliance with regulations in areas with limited capacity for enforcement, thereby tackling a driver of biodiversity loss.

Ensuring new governance arrangements are equitable and *inclusive* is, therefore, of paramount importance. Although we advocate here a new governance approach based on the achievement of biodiversity outcomes, this must be accompanied by the achievement of equitable outcomes for IPLCs. The inclusion of conserved areas can assist in this regard, as such areas do not have to have biodiversity conservation as their primary purpose and can instead be managed for socioeconomic, cultural or other purposes. As mentioned, the role played by IPLCs has been undervalued and under-recognized until recently (see, for example, IPBES, 2019). IPLC-led governance will be crucial in enabling conserved areas to contribute to biodiversity conservation as demonstrated in the three case studies described here. A greater role for IPLCs in decision-making and policy-setting at regional, national and international levels is only likely to facilitate the achievement of biodiversity outcomes and the management of potential economic and social trade-offs. The importance of properly including IPLCs has gained traction within discussions on the Post-2020 GBF, but much work remains to ensure this is fully embedded and implemented (Fajardo et al., 2021).

There is also a need for greater equity at the global scale, particularly in terms of the distribution of financial resources for biodiversity conservation. Although the Global South harbors most of the world's important biodiversity, and the Global Environment Facility (GEF) was in part established to facilitate finance to these areas, the amount of financing under this mechanism is still inadequate. Discussions on CBD resource mobilization have moved toward increasing consideration of private sector sources of finance, to complement development aid and public sector support (OECD, 2020). New governance arrangements for conserved areas and landscape-level approaches under the climate regime may facilitate the resource mobilization agenda by involving the private sector and ensuring that climate finance simultaneously achieves biodiversity outcomes, although, as shown by the Makira National Park case, it often needs to be complemented by other types of finance, including ODA. An approach based around biodiversity and equity outcomes could be accompanied by a financing framework, under which the areas or countries with the highest biodiversity values are identified and prioritized due to the increased focus on achieving ecological representation and biodiversity outcomes. This could facilitate transfers of finance from high-income, importing countries to low-income countries, and the establishment of new, innovative forms of financing mechanisms, which could even include performance-related payments, based on the achievement of biodiversity outcomes.

At a global level, considerable work is underway to better assess management effectiveness (and to a limited extent, governance effectiveness) of protected areas (Geldmann et al., 2021). Conservation areas or OECMs are, by their nature, considered

to be "effective" conservation measures and, according to the accepted definition, they must result in biodiversity outcomes, regardless of the primary objective for which there are managed. Rather than attempting to assess the effectiveness of protected area management with a relatively small amount of monitoring effort dedicated to monitoring outcomes, a monitoring approach can be adopted for both protected and conserved areas (i.e. OECMs) that focuses more strongly on biodiversity outcomes. This will enable more responsive to *adaptive* and *anticipatory* governance responses. Post-2020, implementing an outcome-based approach will be more practical and cost-effective than it has been in the preceding decade, at least for terrestrial sites, due to the rapid advances being made in the area of remote sensing tools and the availability of proxy data on which to base an estimate of biodiversity outcomes (Watson and Venter, 2019).

Rapid advances in remote sensing that can monitor biodiversity outcomes can also assist in the future designation of terrestrial protected and conserved areas by ensuring that areas are selected for their biodiversity value. More attention needs to be given, however, to the development of equivalent tools for marine areas. This would ensure that an outcome-based approach is taken to site designation as well as to management and governance. In the case of conserved area designation, criteria need to be developed that provide a common global understanding of what constitutes an accepted biodiversity outcome. This would prevent a situation in which, for example, a marine area managed primarily for fisheries is designated because it results in positive outcomes for one or two specific species, despite little discernible benefit for a wider assemblage of species, and even potential harm due to bycatch. Recent discussions to designate much larger areas for biodiversity, such as the "half-earth" approach to set aside half of the earth for nature, as proposed by Wilson (2016), would indeed help to achieve greater ecological representation in some areas. The concept has received some criticism, however, from those who view this as a land-grab by the conservation community (Dudley et al., 2018), and for some ecoregions not enough natural habitat remains to meet this goal without substantial restoration efforts (Dinerstein et al., 2017; Mappin et al., 2019). A transformative agenda needs to go beyond target-setting and aim for ecological representation and achievement of biodiversity outcomes at the global level, accompanied by equity outcomes. As noted previously, this should be complemented with a mechanism for increasing financial resources to low-income countries that are high in biodiversity. It would also need to provide scope for restoration of ecoregions that have been most depleted.

As shown by the case study from Bolivia, new outcome-based approaches to transformative governance are necessary where protected areas with the primary goal of biodiversity conservation are located in large landscape and seascape areas where biodiversity conservation and equity are being achieved even in the areas that are not managed for biodiversity per se. It also gives space for *adaptive*, *integrative* and *anticipatory* governance responses by decreasing some of the pressures on biodiversity. Given the increasing pressure on land from many sectors, conserved areas with the primary purpose of food production and carbon storage will necessarily play an increasingly important role. Such an approach will, however, require the development of an accepted global standard, with associated criteria

to determine what constitutes positive biodiversity outcomes. This will be facilitated by new cost-effective monitoring based on satellite remote sensing.

The move toward landscape approaches under REDD+ and other policy initiatives by provincial governments under the climate regime, such as LED-R initiatives, present a potential opportunity for integration with the emerging landscape-based approach to protected and conserved area governance. New points of intersection between the climate, forest, agriculture and biodiversity policy agendas could facilitate innovative, *integrative* forms of governance and financing for large areas. There may be potential for conserved areas to be designated and managed primarily for their carbon values, with biodiversity benefits as a major outcome. The involvement of new stakeholders from different interest groups in governance arrangements, particularly from the agricultural and climate sectors, and the potential complications that can arise from competing objectives, however, should not be underestimated. The establishment of an outcome-based approach with agreed minimum standards and criteria for achieving biodiversity outcomes could assist in managing and agreeing such trade-offs by ensuring that a certain threshold of biodiversity value must be met.

To be truly transformative, the implementation of this approach also needs to be combined with efforts by high-income or consuming countries to address some of the underlying drivers of biodiversity loss linked to unsustainable consumption and global trade that negatively impacts biodiversity in low-income countries (Lenzen et al., 2012). This type of *integrative* governance approach is now gaining traction within forest policy discussions, as governments in consuming countries consider how they ensure that their imports of agricultural commodities are deforestation-free (Weatherley-Singh and Gupta, 2018). Such policies need to be advanced to ensure that supply chains do not cause biodiversity loss in producer countries. This would also help the Post-2020 GBF to address the pressures on biodiversity, and not just the responses to those pressures (OECD, 2019).

A review and revision of the IUCN management and governance categories would also be necessary to enable a new approach based around biodiversity and equity outcomes. Notwithstanding the crucial need to retain a number of protected areas that are managed primarily for biodiversity conservation, these could be incorporated within a set of IUCN protected and conserved area categories that is based around the achievement of biodiversity and equity outcomes. The current IUCN categorization of governance types could also be reviewed and expanded to encapsulate and include the full range of conserved areas and their outcomes for biodiversity, to better reflect their governance and management structures.

11.5 Conclusion

Although the international policy framework, and particularly CBD Aichi Target 11, has stimulated further progress in protected and conserved area governance, especially in site designation, this falls short of meeting the criteria for transformative biodiversity governance. Efforts have been made in recent years to ensure such areas become more

inclusive (through, for example, co-governance arrangements that engage IPLCs). The valuable role played by IPLCs is starting to gain recognition, including in new discussions around conserved areas, but governance needs to go beyond including them as beneficiaries, to recognizing and strengthening their rights as active stakeholders. This will require a considerable investment of time and resources at local and landscape levels to conduct *inclusive* consultations, build capacity where needed, especially in terms of access to technology, and to find solutions that meet the needs of IPLCs and that reflect their own visions for their territories, which will ultimately be more sustainable.

There has also been a focus on achieving *adaptive* management that allows for some experimentation in management approaches. This principle can be used to quickly integrate new scientific findings, which are now providing more timely, up to date information on species and habitats and the human pressures they are facing. This increase in information is occurring from the local to global level, enabling decision-making to be better informed and potentially also *anticipatory*, for example, by modeling the impacts of human pressures and facilitating future site designations.

Greater information on biodiversity outcomes will also enable finance to be directed to the areas of greatest biodiversity value, thereby helping to achieve greater ecological representation. The potential scaling-up of protected areas to become part of decision-making governance structures at landscape and seascape scales, including conserved areas, is expected to open the door to greater *integrative* approaches and new forms of financing, although such arrangements bring a new level of complexity.

In conclusion, a new approach based around the delivery of biodiversity outcomes could help drive forward a transformative governance agenda. Its success will also depend on the long-term engagement of IPLCs and the achievement of equity outcomes. Reviewing the IUCN governance and management categories would be an additional small first step toward building a more supportive policy framework at the international level that facilitates transformative change. If such efforts are combined with actions taken by high-income, importing countries to increase the sustainability of their consumption and trade patterns, and thereby tackle some of the underlying drivers of biodiversity loss, this would be even more transformative.

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