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SOCIAL IMPACTS OF PROTECTED AREAS

Exploring evidence of trade-offs and synergies

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Introduction

Protected areas remain the cornerstone of efforts to conserve ecosystems and biodiversity globally. If the Aichi biodiversity targets of the Convention on Biological Diversity (CBD) are met, 17% of terrestrial biomes and 10% of coastal and marine areas will be protected by 2020, impacting the lives of people living in and around them. The relationship between protected areas and poverty forms a long-running and often polarised debate in academic and policy circles (Brockington and Wilkie, 2015). Protected areas certainly have the potential to play an important role in the delivery of crucial ecosystem services for poverty alleviation (Andam et al., 2010; Chan et al., 2006), but they remain in the spotlight for negative reasons too, with accusations of human rights violations against indigenous communities continuing to cause controversy (Matsuura, 2017). For both moral and instrumental reasons, international conservation policies and the approaches of many organisations are moving beyond the standard livelihoods approach to dealing with the social costs of conservation, to emphasise pro-poor strategies, human rights and equitable management with participation by local communities (Schreckenberg et al., 2016). Many protected areas are now established and managed based on the premise that there are synergistic relationships between social and ecological outcomes, or that social benefits related to protected areas can sufficiently compensate for any losses. However, efforts to balance ecological and social objectives remain challenging, and 'win-wins' are elusive.

Despite the increased presence of development goals within protected area objectives, guidance is lacking on how to identify, avoid or mitigate trade-offs, or even to realise win-win outcomes. This is in part because social dimensions

of conservation have, until recently, been inadequately conceptualised. Integrated conservation and development programmes have proliferated since the 1980s, with limited success. A major weakness in these efforts was their restricted focus on material definitions of poverty and livelihoods, often embodying the perspectives of Western donors and NGOs about what appropriate development entails, and aggregated across social groups (Newmark and Hough, 2000). There is increasing acknowledgement that narrow economic indicators are inadequate for describing poverty and social wellbeing (Dawson, 2015; Coulthard et al., this volume). Indeed, it is partly the complexity, variety and distribution of impacts in different contexts that has fuelled controversy over protected areas. Protected areas are often established in regions of high biodiversity in the Global South where people are highly dependent on natural resources, and have historical and cultural relationships intertwined with nature. They represent discrete systems of governance with rules of access, management activities and a wide array of associated benefits and costs through different ecosystem services, disservices and elements of different people's wellbeing (Suich et al., 2015). Inspecting the various elements of these systems and complex relationships between social and ecological dimensions can elucidate processes and structures that best foster positive outcomes. However, income and assets remain the dominant indicators used to assess the social impacts of protected areas (de Lange et al., 2016). A growing number of papers using sophisticated scientific research designs, yet restricted to this material focus, simply conclude that protected areas have either no impact on local communities or make small positive contributions to poverty alleviation (Andam et al., 2010; Clements et al., 2014; Robalino and Villalobos, 2015). Broader reviews of the social impacts of protected areas (e.g. Oldekop et al., 2016; Pullin et al., 2013) are useful to map out and characterise the evidence base, but are less able to understand the relationships between and within social and ecological dimensions of protected area systems.

As studies increasingly apply more advanced conceptual framings to explore the social impacts of protected areas such as wellbeing, resilience, justice and equity, there is a growing acceptance that there are always winners and losers in the establishment and associated management activities, and trade-offs between different outcomes (Daw et al., 2015; McKinnon et al., 2016; Schreckenberg et al., 2016). The aim of this chapter is to inform both conservation science and practice by: (i) providing an overview of the state of knowledge on the impacts of protected areas on human wellbeing; (ii) characterising the nature of trade-offs and synergies within and between social and ecological outcomes; and (iii) reflecting on the implications for protected area governance and management. In line with the emerging approach of international conservation organisations (IUCN and WCPA, 2016) and the growing diversity of protected areas, we define protected areas to be any area-based conservation measure for which the primary or explicit objective is conservation, including sustainable use.

The social impacts of protected areas

Protected areas can impact people's lives in a multitude of ways. Using the lens of multi-dimensional wellbeing allows insights into the range of, and interconnections between, social impacts on aspects of people's lives which they value (Woodhouse et al., 2015). Definitions of wellbeing have coalesced around a conceptualisation that encompasses three dimensions: (i) objective material circumstances; (ii) subjective evaluation and experiences, and the meaning and values ascribed to the processes and outcomes, including socio-cultural values; and (iii) a relational component focusing on how people engage with others to meet their needs and achieve their goals (Coulthard et al., this volume). Impact evaluations of external interventions have tended to privilege objective material wellbeing (including income and assets), overlooking the non-material social and cultural aspects which are vital to people's sense of wellbeing. Research within the ESPA programme has particularly embraced the subjective dimensions of wellbeing and involved in-depth analyses of what it means to live well in a local context, according to the values, preferences and perceptions of people themselves (Abunge et al., 2013; Dawson and Martin, 2015; Gross-Camp, 2017). People act upon how they feel, so that understanding and supporting subjective wellbeing is crucial for local legitimacy and engagement. Subjective experiences may contradict objective outcomes – for example, perceived wellbeing can decline despite increases in asset-based wealth due to inequitable distribution of benefits, conflict and unmet expectations (Gurney et al., 2014). Wellbeing analysis also provides a crucial foundation for justice research (see Dawson et al., this volume) that looks beyond the distribution of costs and benefits to perceptions of procedural justice and recognition of cultural values, aspects which have been shown to be important in the local legitimacy of protected areas.

We can consider three related processes through which the establishment of protected areas impacts both positively and negatively on human wellbeing across the three interlinked dimensions (Figure 14.1). First, protected area management always involves a level of resource control, which can protect and increase the flow of regulating and supporting ecosystem services to people (Chan et al., 2006). However, protected areas that successfully protect or enhance wildlife populations can also result in 'ecosystem disservices', most notably in the form of 'human wildlife conflict', which can have visible impacts such as injury and livestock predation, but also hidden effects such as on mental health (Barua et al., 2013). Exclusionary approaches, which have dominated conservation historically, have resulted in displacement through: physical removal; economic exclusion from the pursuit of a livelihood; and cultural exclusion of people from landscapes which have historical and symbolic meaning (Lele et al., 2010). Alternatively, the establishment of protected areas can secure resource rights and improve sustainable management, leading to improved access to ecosystem services important for wellbeing (Clements et al., 2014).

Second, how protected areas are governed will determine not only what management decisions are taken and therefore access to ecosystem services, but

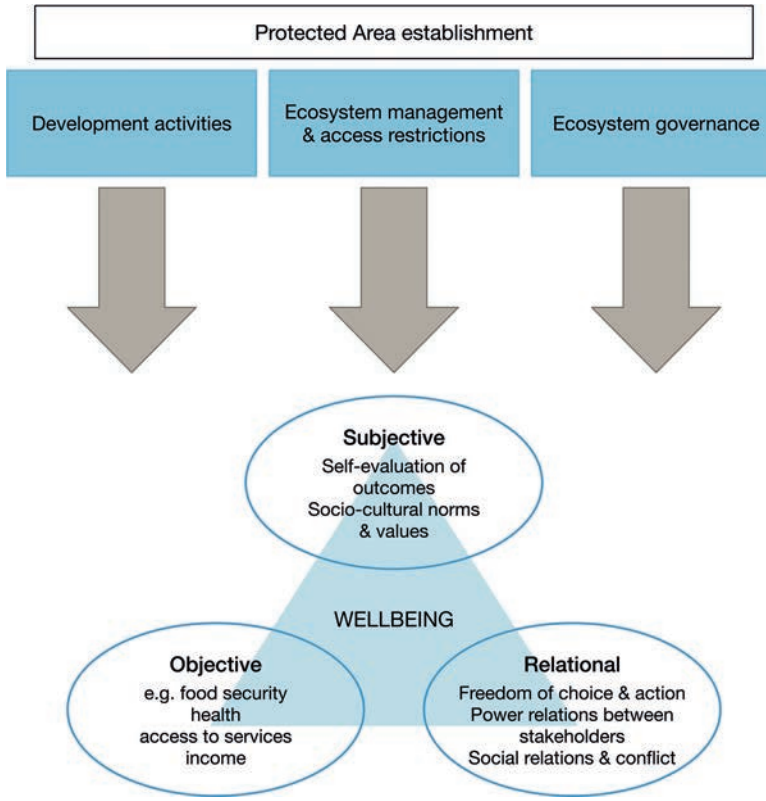

FIGURE 14.1 Conceptual framework showing the processes by which protected areas impact on the three dimensions of human wellbeing.

also affect the relational and subjective aspects of wellbeing. Governance refers to the processes and structures whereby decisions are made and implemented (Nunan et al., this volume), and different regimes will vary in institutional arrangements, levels of participation, accountability and responsibilities by different actors. Protected areas are fundamentally social and political processes that can transform institutional arrangements and power relationships affecting social relations and cultural practices, and ultimately the sustainability of the intervention (Brechin et al., 2002). Anthropological research has highlighted how, through a process of territorialisation, protected areas can transform landscapes into partitioned units, imposing the European nature–culture dichotomy to the exclusion of local knowledge and associated management institutions (Bluwstein and Lund, 2018; Goldman, 2003). Imposed institutions can undermine freedom of choice and action (Abunge et al., 2013) and create feelings of insecurity as rules change (Baird et al., 2009), but where interventions improve natural resource governance and local stakeholders

have meaningful influence over decisions, they can increase feelings of empowerment (Gurney et al., 2014) and a sense of pride and ownership (Mahajan and Daw, 2016).

Last, protected areas are rarely implemented or managed as isolated interventions and will typically exist in conjunction with other development initiatives, such as tourism, alternative livelihoods, infrastructure and education. These projects may form part of 'community-based conservation' initiatives, or development may be attracted to the area in a more uncoordinated and opportunistic manner, increasing interactions between communities and a range of external organisations (Baird, 2014). A variety of actors at different scales can play a role in resource management institutions, provide economic opportunities and constraints, and shape communities' perceptions of a project – affecting all three dimensions of wellbeing and ecological success (Mahajan and Daw, 2016). Interventions associated with protected areas and aimed at improving livelihoods and economic wellbeing overall tend to distribute fortune unevenly (see below), which can exacerbate social inequity and lead to conflict affecting the relational dimensions of wellbeing.

Synergies between social and ecological outcomes

Protected areas are often purported to support positive relationships between social and ecological processes and outcomes. In a review of research on 165 protected areas, Oldekop et al. (2016) provide convincing evidence that positive ecological outcomes are linked to positive socio-economic outcomes, which in turn are more likely where co-management arrangements exist. Likewise, a review of community-based projects shows that synergies exist between economic and ecological success (Brooks et al., 2012). These reviews suggest that positive synergies are possible, especially where governance arrangements allow for local involvement, capacity building, secure tenure rights and equitable distribution of benefits. However, by not capturing the full range of wellbeing impacts, or how these affect groups of people in different ways, many studies may fail to acknowledge trade-offs that ultimately affect conservation success and justice. For example, many conservation and development initiatives focus on creating alternative livelihoods, such as commodity-driven agriculture, to enhance local incomes and reduce dependence on resources within protected areas. Yet, such promoted and incentivised changes may inhibit subsistence production causing short-term and seasonal food insecurity, create land and resource tenure insecurity (especially for those reliant on customary or informal access) and disrupt local trade, social protection systems, customary interactions and knowledge exchange. Focusing on win-wins to the exclusion of trade-offs can ultimately back-fire, and lead to disappointment and negative effects on long-term community support (Chaigneau and Brown, 2016). Overall, there is a lack of studies that combine social and ecological measures of success, and the processes by which these outcomes occur, to fully assess whether and how synergies are produced.

Protected area trade-offs and implications for conservation success

A wide range of literature suggests that trade-offs are typical in protected area conservation. We have identified that trade-offs can occur between (i) social and ecological outcomes; (ii) different social outcomes; and (iii) different social groups, and all these trade-offs vary across spatial and temporal scales (Table 14.1).

Trade-offs between social and ecological outcomes

Creating stricter rules on access and greater enforcement can mean that biodiversity, habitats and ecosystems are better protected but at the cost of human wellbeing. This trade-off is most evident where restriction of resource use leads to a loss of access to provisioning services, such as forest or fisheries resources, and the associated cultural significance of these livelihoods and land or seascapes. The static nature of conventional protected areas can be particularly problematic for mobile groups such as pastoralists who rely on temporally and spatially dynamic resource use (Reid et al., 2014). These trade-offs can play out differently at different scales due to zoning, where some areas have more restrictions limiting farming but offer no benefits to compensate (Dawson et al., 2017b). Although regulating and supporting ecosystem services may be enhanced through protected areas, these may primarily accrue to non-local users who do not experience the direct costs – for

TABLE 14.1 Summary of key trade-offs in protected areas and variations at scale

Type of trade-off	*Across local scales*	*Across national and global scales*	*Across temporal scales*
Between social and ecological outcomes: restriction of provisioning and cultural ecosystem services due to loss of access	Different restriction zones result in different trade-offs	Regulating and supporting ecosystem services accrue at larger scales	Time lags in ecological outcomes and ecosystem service benefits to wellbeing
Between social outcomes: Gains in some aspects of wellbeing not commensurate with costs to others	Inequitable compensation	Tourism income, tax and infrastructure benefits greater nearer to urban centres and at national level	Benefits are delayed, or tail off when funding stops
Between social groups: The poorest and most marginalised lose out	Accessible elites gain most benefits	Gains for distant populations through carbon sequestration and conservation of charismatic species	Greatest benefits to future generations

example, watershed protection leads to better water provision downstream from the protected area (Sikor, 2013). Whereas costs and benefits to material wellbeing from conservation are more immediate, it can take time for synergies to emerge as ecosystem processes are restored, although future perceived benefits may be enough to generate collective action within communities to enforce protected area rules (Chaigneau and Brown, 2016).

Trade-offs between different social outcomes

Protected areas can produce both gains and losses across different aspects of well-being. Positive impacts on the flow of regulating ecosystem services can come at the expense of other social outcomes, by preventing access to material resources or undermining a sense of freedom (Box 14.1). Compensation provided through, for example, revenue sharing from tourism may increase wealth for some, but is often not commensurate with losses to other aspects of wellbeing – for example, the ability to maintain traditional practices and related social interactions through access to medicinal plants or subsistence hunting (Martin et al., 2016). Remoteness can be a key variable at play in social trade-offs at the local scale. For example, Poudyal et al. (2016) found systematic spatial bias in the social safeguarding assessment process for REDD+ in Madagascar, with inaccessible households less likely to be identified as eligible for compensation. Economic benefits tend to accrue in urban centres or at a national level – for example, in Tanzania wildlife is prioritised over local community livelihoods due to the vast amounts of revenue that tourism brings to the national economy (Homewood et al., 2009). Impacts are not static, and benefits from associated development activities such as livelihood interventions can take time to emerge (Box 14.1). Conversely, as in the case of an integrated Marine Protected Area (MPA) in Indonesia, positive wellbeing impacts which occurred during the implementation period did not continue after external funds and expertise were withdrawn (Gurney et al., 2014).

BOX 14.1 TRADE-OFFS IN THE BIODIVERSITY OFFSET OF THE AMBATOVY MINE IN MADAGASCAR

Bidaud et al. (2017) investigated the social impacts of a biodiversity offset project used to compensate for the impacts of the development of a major nickel mine on biodiversity. The offset project restricted forest activities and extraction, but also provided micro-development projects (training, agricultural assets and equipment) to compensate people for the costs of stopping their forest-related activities. Using key informant interviews, focus group discussions and a household survey, the authors found both positive and negative social impacts of the protected area on human wellbeing, and a number of trade-offs:

- Trade-offs between social outcomes: the offset project was perceived to have both positive and negative impacts on material wellbeing. There were the potential benefits of forest protection on water availability and thus agricultural productivity, and the increased training and material donations from development projects. However, the offset simultaneously restricted people's ability to access the forest, thus reducing the opportunity for agricultural expansion and collecting resources. People experienced negative impacts on relational wellbeing as the project introduced new social tensions surrounding the reporting of illegal activities, and conflicts arose around the distribution of development project activities.
- Trade-offs between different social groups: members of forest management associations, or those with better social and family connections, were more likely to receive benefits from development projects.
- Trade-offs at different spatial scales: at the local scale, those who felt they suffered the costs of conservation restrictions were not those who benefited from the development projects. Residents living in the village centres reported material benefits, whereas those more likely to experience the costs of fines for breaking conservation restrictions lived closer to the forest. Respondents also perceived trade-offs between household and national scales. At the household level they perceived negative impacts, inadequate benefits and an inequitable sharing of costs and benefits, yet they perceived the offset to have a positive impact on Madagascar as a whole. Forest protection was seen as positive in its own right, and also for the provision of fresh water and the future use of the forest.
- Trade-offs between different temporal scales: there was a mismatch in timing between the costs of the immediate forest restrictions and the delay in benefits from the associated development projects.

The authors argue that although the development project activities provided by the offset have the potential to deliver benefits to the wellbeing of local people, this is weakened by the mismatch between costs and benefits at different spatial and temporal scales. More consideration of these trade-offs is critical in the development of offset projects if they are to be sustainable in the long term.

Trade-offs between different social groups

The most common and significant trade-offs found in the literature are between different social groups resulting in distributive inequity. Social differentiation and disaggregated analyses on values held and outcomes are crucial in providing insights into the impacts on and between different groups (Daw et al., 2011; Fisher et al., 2014). Even well-meaning interventions can unintentionally disadvantage

some groups relative to others, unless attention is paid to the social and political composition of communities. Trade-offs occur across a range of different social groupings according to wealth (Dawson et al., 2017b), gender (Daw et al., 2015; Brown and Fortnam, this volume), age (Keane et al., 2016), ethnic group (Dawson and Martin, 2015) and livelihood group (Clements et al., 2014). The common pattern across scales is that benefits tend to accrue to those in the position of greater power, whereas the costs fall on the poorest and most marginalised. Impacts and opportunity costs of protected areas tend to be borne at the local scale, while benefits from ecosystem services, intrinsic and bequest values are enjoyed by distant wealthy beneficiaries (Balmford and Whitten, 2003).

Implications of trade-offs for conservation success

Trade-offs can have important implications for conservation success through social feedbacks. Negative social impacts can result in reduced local support for

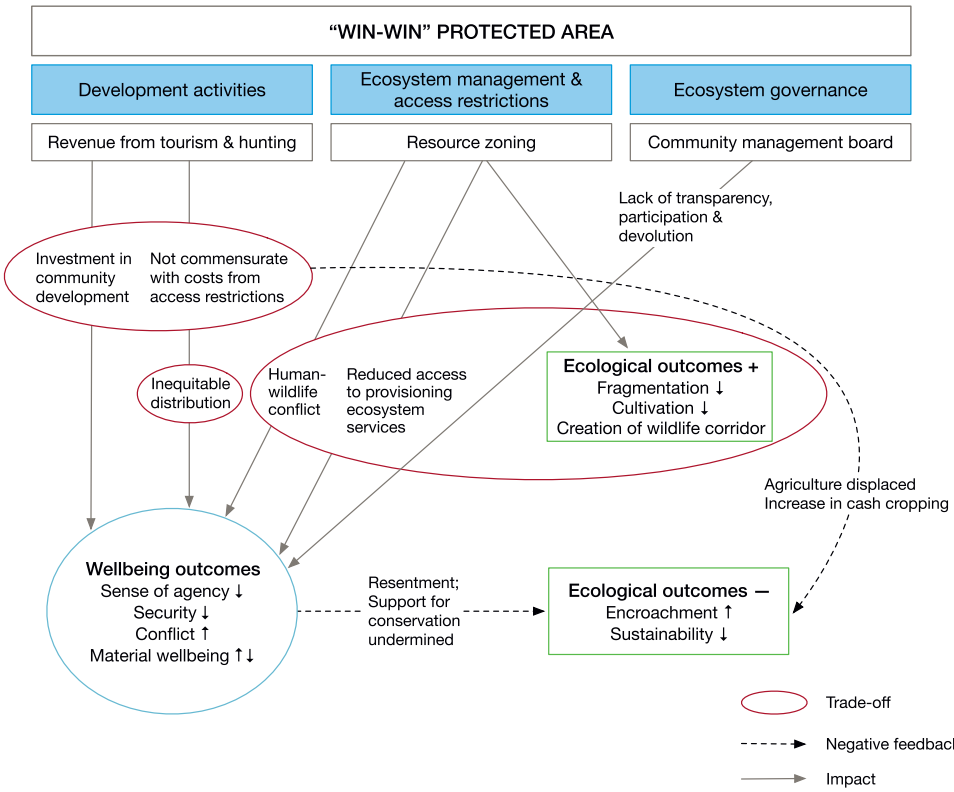

FIGURE 14.2 Illustration of impacts, trade-offs and negative feedbacks resulting from a protected area. Example of Wildlife Management Areas in Tanzania.

Source: Based on Bluwstein et al., 2016; Homewood et al., 2015; Moyo et al., 2016.

conservation and cause spill-overs and unintended consequences that ultimately and often negatively impact conservation objectives through negative feedbacks (Milner-Gulland, 2012). There is growing evidence that distributive inequity (in wellbeing outcomes across social groups), alongside broader procedural injustice and lack of recognition, can affect the legitimacy and effectiveness of protected areas (Dawson et al., 2017a). Figure 14.2 illustrates the variety of impacts, trade-offs and negative feedbacks that can occur, with the example of Wildlife Management Areas (WMAs) in Tanzania. Although WMAs provide tourism revenue and indirect economic benefits through protecting rangelands against fragmentation, inequity in distribution and a lack of transparency, downward accountability and community participation have undermined support for conservation and led to violent confrontation (Homewood et al., 2015). Restrictions on resource use and insufficient compensation from tourism revenue increased the desire to rent farmland and graze livestock elsewhere (Bluwstein et al., 2016). Moreover, increased maize damage by elephants due to the presence of the WMA encouraged the growth of a cash crop, sesame, as a less risky alternative. This in turn increased the overall demand for agricultural land, as most who farm sesame also rent land elsewhere to grow maize (Moyo et al., 2016).

Managing trade-offs and creating synergies in protected area conservation

Given the ubiquity of trade-offs in protected areas, how can they be managed to improve the balance between different outcomes? Referring back to Figure 14.1, we first examine the factors that affect the relationships between ecosystem services and wellbeing, how the current evidence suggests these mediate the extent and distribution of trade-offs and the potential for creating synergies. We then look at the common strategy of providing compensation to offset trade-offs and its potential pitfalls. Last, we explore how analysing and negotiating trade-offs may be the most effective way to foster synergies.

Factors determining trade-offs and synergies

Ecosystem management to balance multiple stakeholders' priorities alongside biodiversity conservation

Protected areas vary in the levels of access and use permitted, ranging from strictly protected units, in which resource use and even physical access are forbidden, and sustainable use areas that allow for controlled resource extraction, and in some instances land use change and human settlements. Strict protection is often deemed necessary where pressure on resources is high, but this view is countered with evidence that sustainable use can leverage local support and the enforcement of protective regulations (Porter-Bolland et al., 2012), and that indigenous managed areas are particularly successful where pressures are high (Nolte et al.,

2013). Stricter protection does not always align with improved ecological outcomes because social conflicts that result can affect support for, and undermine, conservation (Ferraro et al., 2013). Overall, extreme protectionism is unlikely to meet the needs and rights of impoverished local populations, unless compensation is deemed sufficient to account for losses by these groups or substitute ecosystem services that meet people's needs are available in the wider landscape (Dawson and Martin, 2015).

Quality of participatory governance

IUCN and the CBD recognise four broad types of governance of protected areas: (i) by government; (ii) shared (by various rights holders and stakeholders); (iii) by private organisations and individuals; and (iv) by indigenous peoples or local communities (Borrini-Feyerabend et al., 2013). The ways in which protected areas are governed on the ground are far more variable than this categorisation implies, and it is not only the type but the quality of governance that is important in producing social and ecological synergies. Whether local or state authority is more effective in generating positive ecological and social outcomes remains a key debate in protected area conservation (Brockington and Wilkie, 2015). Devolved governance, such as in community-based forestry management, has potential to provide a sense of agency and encourage voluntary compliance (Gross-Camp, 2017)

BOX 14.2 DOES GOVERNANCE TYPE IN PROTECTED AREAS MATTER FOR POVERTY? A RAPID ASSESSMENT OF THE EVIDENCE FROM SUB-SAHARAN AFRICA

Contributed by: Yvonne Erasmus and Laurenz Langer (2017), Africa Centre for Evidence, University of Johannesburg

How governance structures and processes are set up has a direct impact on how protected areas are managed, and consequently on conservation and social outcomes.

Following the identification of an evidence synthesis gap, we conducted a Rapid Evidence Assessment aimed at answering the following research question: What is the impact of different governance structures in protected areas on ecosystem services and multi-dimensional poverty alleviation in sub-Saharan Africa?

We distinguished the four types of governance identified by IUCN: government, shared, private and community (Borrini-Feyerabend et al., 2013). Following the screening of 9,493 search hits identified by a systematic search, we included 26 studies in our assessment, 20 of which were used in the synthesis of results following critical appraisal of studies' trustworthiness.

The 26 studies were conducted in 10 countries concentrated in Southern (n = 11) and Eastern Africa (n = 11). In terms of individual countries, Tanzania (n = 7) and Namibia (n = 5) had the highest number of studies. The most prominent type of governance featured was governance by local communities (n = 14); with fewer studies focusing on governance by government (n = 6); comparison of different types of governance (n = 4); and shared governance (n = 2). We identified no studies assessing the effects of privately governed protected areas.

The included studies cover 36 different protected areas in sub-Saharan Africa, 33 of which are terrestrial. The majority assessed the effects of different types of governance structures on SDG 1: poverty reduction (n = 18).

Impacts on socio-economic outcomes

The different governance types in protected areas do not seem to result in the alleviation of poverty in any form, but findings suggest that there is increased livelihood insecurity among affected communities. Alternative livelihood activities in protected areas governed by government are not sufficient compensation for livelihood loss, and community structures in community-governed protected areas cannot be seen as proxies for community benefit. There is evidence of equity concerns and conflict, especially around livelihood loss (alternatives are inadequate, unevenly distributed and evidence of elite capture exists). When governance types are considered independently of one another, there are few differences in outcomes by type.

Impacts on environmental outcomes

The evidence base contains little information on conservation rates measured, or on aspects of sustainable use. As a result, there is an absence of evidence on the impact of different governance structures on environmental outcomes, although there are examples of tensions between conservation and development objectives around protected areas. A weakness of the included evidence base is that these environmental outcomes are not assessed empirically, which makes it difficult to investigate the links and synergies between ecosystem services and conservation activities and poverty reduction.

Impacts on governance processes

There is similarity across governance types in the barriers to effective governance structures. In protected areas governed by government and by communities, participation by communities in the governance structures is insufficient and unequal and communication between governance structures and communities is inadequate, while there is evidence of elite capture of governance structures.

leading to positive ecological outcomes (Persha et al., 2011). There are numerous examples showing that, in practice, devolved power is rife with tensions and difficulties due to the variety of actors involved, the tendency for elites to dominate the process, inhibitive costs of participation, and vulnerability to external perturbations (Agrawal and Gibson, 1999). Co-management arrangements may serve to buffer communities against the risks of full devolution, strengthen formal recognition of tenure rights and promote equitable distribution of benefits (Oldekop et al., 2016). Overall, the evidence suggests that no single governance blueprint can guarantee the production of synergies (Box 14.2), but instead regimes should be tailored to the ecological, historical, political and cultural context. Therefore, rather than advocating a standard governance model, focus has intensified on embedding 'good governance' principles in protected areas (such as strategic direction, giving a voice to stakeholders, accountability and rights), across regime types, as a primary means of influencing effectiveness, equity and social outcomes (Borrini-Feyerabend et al., 2013).

Power relations at inception and beyond

Attention to governance processes and how they impact on the relational dimension of wellbeing suggests the importance of understanding power relations in protected areas. Differences in power between stakeholder groups at multiple scales can influence whose perspectives and values influence ecosystem governance, the negotiation of trade-offs, and consequently the distribution of benefits and burdens across social groups. Marginalised groups, who have limited agency and a weak ability to negotiate and participate in decision-making processes alongside powerful state actors and non-governmental organisations, may be particularly disadvantaged (Dawson and Martin, 2015). Recent research has highlighted the importance of the starting point in a given context – 'step zero' – and in particular the power dynamics and political systems existing prior to inception of a protected area as factors influencing the perceived incremental impacts and therefore social and ecological success (Mahajan and Daw, 2016).

Cultural values and preferences

People value ecosystem services and conceptualise wellbeing in different ways, and so the experience of protected area impacts is mediated by cultural values, social roles and livelihoods (Abunge et al., 2013). The notion that all aspects of wellbeing are constituted through the lens of culture is well evidenced, and highlights the relative importance of the subjective and relational wellbeing dimensions. However, such understanding is often excluded from discussions surrounding strategies to enhance social outcomes associated with conservation.

The problems with a compensation model for mitigating trade-offs

Compensation is commonly offered to local people identified as suffering negative impacts from the establishment of protected areas, implicitly acknowledging the existence of a trade-off relationship (McShane et al., 2011). Mechanisms to distribute compensation are diverse, as are the form in which compensation is given including micro-development projects for biodiversity offsets (Box 14.1), direct payments for losses from human–wildlife conflict, alternative livelihoods and Payment for Ecosystem Service schemes. Three distinct issues make it challenging to address trade-offs through compensation. First, who to compensate and how to identify those affected. Questions of who the true rights holders are can be contentious, and place some legitimate claimants who do not fit an identity profile at a disadvantage (Brockington and Wilkie, 2015; Poudyal et al., 2016). Second, how to distribute revenues equitably. In the case of Burunge WMA in Tanzania, revenues were distributed equally between villages on the assumption that this was fair, but some villages were experiencing more costs from human–wildlife conflict than others, resulting in feelings of resentment and conflict (Moyo et al., 2016). Third, ensuring that compensation is commensurate with any loss as felt by those affected by the protected area. Simplistic compensation strategies assuming that material payments are commensurate with non-material losses fail to recognise the importance of relational and subjective wellbeing. For example, 'sacred values' such as dignity or cultural heritage cannot simply be traded-off against secular items such as money (Daw et al., 2015), and to try to do so results in injustice. Alternative livelihoods may not match the aspirations, traditional knowledge and cultural identity of families, again emphasising the need to understand local conceptions of wellbeing through the lens of cultural values. For example, although cash conservancy payments are assumed to encourage people to move away from livestock grazing in the Mara (Bedelian and Ogutu, 2017), there is a strong preference for livestock even at the risk of getting fined (Keane et al., 2016).

Confronting and negotiating trade-offs

Rather than compensating for assumed costs from an external perspective, there needs to be better acknowledgement and recognition among stakeholders that hard choices are the norm in natural resource management (McShane et al., 2011). Explicit recognition by policy makers and practitioners of the range of trade-offs across different aspects of wellbeing, social groups and at different scales, and the distributional implications of different management and policy choices, are likely to improve the chance of success in both conservation and human wellbeing objectives, reducing the likelihood of unrealised expectations and conflict. Trade-off analysis can be used at the inception of a protected area to provide lessons for conservation practice. The use of a 'trade-off lens' can systematically take into account the wellbeing of marginalised groups in decision making, e.g. improving

opportunities for those doing ecologically destructive activities to benefit from other jobs (Daw et al., 2015). Participatory modelling was used as a tool for co-producing knowledge with stakeholders to collectively explore trade-offs and novel solutions that maximise wellbeing in a fishery in Kenya. This approach allowed not only deliberation over 'hard choices', but the development of ideas of how to transform the dynamics of the system that would eliminate the need for trade-offs in the first place – for example, to allow women to access fish that support their livelihoods (Galafassi et al., 2017). Too narrow a focus on livelihood benefits or ecosystem services not only ignores the broader set of trade-offs that are important to people affected, but also the potential ways in which protected areas can lead to wellbeing improvements that can be maintained over longer periods and have wider reach. For example, Chaigneau and Brown (2016) show the importance of looking beyond emphasising the direct economic benefits of an MPA, in the form of increased fish catches, to more collective values, such as the existence value of the MPA, both for current and future generations. This can ensure longevity through increased local support for the protected area, especially if direct economic benefits fall away.

Conclusions

We have highlighted the need to take a broader perspective that engages with social complexity, spatial and temporal dynamics and context when examining the effects of protected areas on local communities – both in terms of the processes by which impacts occur and in how impacts are conceived. Protected areas are not simply technical instruments for resource management, but must be understood as social and political processes that involve a variety of actors and development activities to affect institutions, social relations and cultural norms. Research that takes a people-centred approach using a wellbeing lens is enabling us to gain a more sophisticated picture of the social dimensions of protected areas, with better potential to integrate social and ecological goals into decision making. We have highlighted the centrality of relational and subjective dimensions of wellbeing in people's experiences of and engagement with these interventions. Studies that exclude these aspects of wellbeing risk ignoring the variety of trade-offs that not only create inequity but can result in negative feedbacks, ultimately undermining the success of protected areas in conserving biodiversity. Trade-offs are typical in protected area conservation, so that attempts to promote synergies that balance social and ecological outcomes through mitigation or compensation measures must engage with and confront these trade-offs at the inception stage. This kind of trade-off analysis can form an element of governance that embeds democratic processes, transparency and allows local voices to be heard. However, wellbeing should be considered a process rather than a state, and people's priorities and conceptions will change in the context of dynamic social-ecological systems that influence their livelihood choices, aspirations and demand for ecosystem services. Such dynamism and social complexity suggests that analysis of trade-offs should not be a one-off event, but a process of continued dialogue within adaptive governance systems.

As described in this chapter, contemporary research into social dimensions of protected areas has uncovered the importance of social and cultural difference in influencing experienced and perceived impacts. Traditional ecological knowledge and relational values of the environment, as well as gendered analyses of protected area governance and impacts, continue to receive inadequate attention. Additionally, the mechanisms linking changes in wellbeing or equity to specific behavioural responses affecting conservation effectiveness remain poorly elaborated and evidenced. Future research should seek to go beyond linear, outcome-focused impact evaluations to capture these processes, and be grounded in in-depth qualitative research that allows subjective understandings of wellbeing impacts to come through, and captures the way in which dynamic social, political and ecological factors shape how outcomes are experienced.

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