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Transformation for inclusive conservation: evidence on values, decisions, and impacts in protected areas☆

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As countries consider new area-based conservation targets under the Convention on Biological Diversity, protected areas (PAs) and their impacts on people and nature are coming under increasing scrutiny. We review the evidence base on PA impacts, combining the findings from existing rigorous impact evaluations with local case studies developed for this study. We identify characteristics of PA establishment and management that improve the sustainability of biodiversity conservation and justice for local communities. We find that recognizing and respecting local values and knowledge about natural resource stewardship, colearning, and comanagement are key to achieving positive impacts for nature and people. Transforming PA governance toward more inclusive conservation depends upon the ability of PAs to be designed and implemented around the values and needs of local people.

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Introduction

The designation of protected areas (PAs) is one of the cornerstones of modern conservation approaches, covering nearly 17% of the Earth's habitable lands [1]. However, the manner in which these areas have been designated has often been incongruous with Indigenous and local values relating to conservation, which has led to numerous problems [2]. Decades of research have tracked PA benefits as well as unintended negative consequences, such as displacement of communities and hardships to local communities [3–7]. Adopted under the Convention on Biological Diversity, the Kunming-Montreal Global Biodiversity Framework has set ambitious new goals to expand the area conserved globally to 30% of the planet's lands and waters by 2030 [8]. Correspondingly, this is a key moment to reshape what conservation should look like, not just for biodiversity, but for a secure, sustainable, and equitable future for the people that directly or indirectly depend on the multiple benefits that PAs can offer. Past studies of PAs around the world provide a rich evidence base to inform how we design, engage in, and manage biodiversity conservation. But successes and failures are context-dependent, as are the lessons to draw from them. Here, we re-examine this evidence base through a values lens, considering how values for nature and values for justice (expressed through the decision-making process) help elucidate the variability in PA impacts on nature and people.

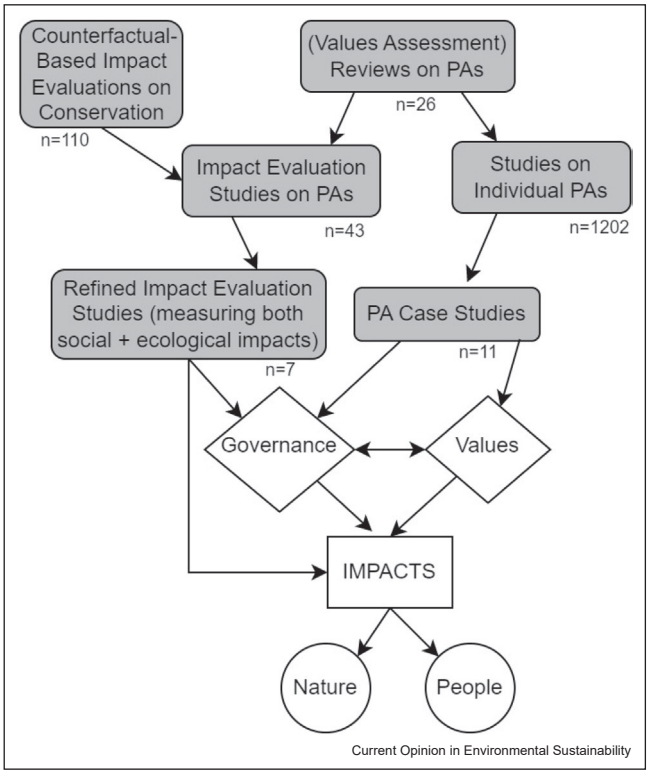
This study is based on evidence synthesized in the Methodological Assessment Regarding the Diverse Conceptualization of Multiple Values of Nature (hereafter Values Assessment [4,5]) produced by the Intergovernmental Science-Policy Platform for Biodiversity and Ecosystem Services (IPBES). In the Values Assessment, we examined how the multiple values people hold for nature affect and are affected by PAs [9], and here we summarize key findings and explore how values can be leveraged for transformative change in PA-based conservation. Through a review of the impact evaluation literature and several emblematic case studies from around the world, we consider how the types of values revealed through PA establishment and management, as well as the extent to which diverse actors are empowered in decision-making processes, are associated with different (positive and negative) impacts on nature (including biodiversity and ecosystem extent or condition) and people (including economic and cultural aspects). From the review and synthesis of these two complementary sources of evidence, we then offer key insights on the leverage points that can be mobilized to transform PAs toward more inclusive conservation.

Methods: reviewing protected area impacts and local values

As part of the evidence base to support the Values Assessment [9], we first reviewed a set of review papers on PA impacts [10] (Figure 1). We searched Web of Science using the following terms, refined by 'review': 'protected area*' AND (outcome* OR impact* OR effect* OR conflict* OR poverty* OR social). This yielded 53 review papers, which were screened to identify reviews that specifically included studies examining the impacts of individual PAs that would allow us to trace back to site-level studies. According to this criteria, 26 review papers were identified as relevant (Supplemental Table 1). Studies cited within this set of papers were examined to identify those that documented the impacts of individual PAs, and a database was assembled of the 1202 papers that were identified in those 26 reviews (Supplemental Table 2). From this database, we identified PAs that were the best documented, and used this set of PAs (while balancing representation across a range of management types and social–ecological contexts) to inform the selection of 11 case studies (Table 1). We selected cases primarily from Africa and Asia to complement the impact evaluation review (described below), which had a geographic bias toward the Americas.

It is inherently challenging to evaluate the impacts of PAs on nature or people because confounding variables, such as geographic remoteness, also influence the variables PAs are expected to impact, such as deforestation or poverty [11]. A growing number of studies are therefore using quasi-experimental methods that seek to isolate the causal effects of PAs. To capture this growing knowledge base, we conducted a separate review of counterfactual-based impact evaluation studies on Web of Science using keywords 'conservation' and 'impact

Figure 1



Methods for assembling evidence (shown in shaded boxes) on how values and governance determining the decision-making process (and how values are incorporated into it) influence protected area (PA) impacts on nature and people. The IPBES Values Assessment produced a corpus of reviews (n = 26, Supplemental Table 1) on PAs that included both studies on individual PAs (n = 1202, Supplemental Table 2) and impact evaluations of many PAs across a region (which was supplemented by additional review focused on counterfactual-based impact evaluation, n = 43, Supplemental Table 3). These review processes resulted in 11 case studies of individual PAs and 7 impact evaluation studies of many PAs that measured both social and ecological impacts. The case studies afforded insight into the types of values (intrinsic, relational, and instrumental) included in PA decision-making, while both the case studies and some of impact evaluation studies provided information about the role of governance and decision-making process in determining the impacts on nature and people.

Table 1

Case studies included in the review, selected from a review of > 1200 studies documenting protected area(PA) impacts on nature and people (see Supplemental Tables 1 and 2; Figure 1).

Protected Area	Location
Jozani-Chwaka Bay Biosphere Reserve	*Zanzibar, Tanzania*
Masoala National Park	*NE Madagascar*
Nanda Devi Biosphere Reserve	*Northern India*
Raja Ampat Marine Reserve	*West Papua, Indonesia*
Chitwan National Park	*Nepal*
Tarangire National Park	*NE Tanzania*
Ulithi Atoll Marine Reserve	*Ulithi, Federated States of Micronesia*
Hā‘ena (Kaua‘i Island), He‘eia (O‘ahu Island), Ka‘ūpulehu (Hawai‘i Island)	*Hawai'i, USA*
Kaya Kinondo	*Southern Kenya*
Tla-o-qui-aht	*Southwestern Canada*
Tatra Mountains	*Southern Poland*

These cases were chosen based on the amount of evidence (i.e. number of published papers on impacts) and geographic representativeness to complement the impact evaluation reviews (see Table 2). Full case studies are available as Attachment G in [12]. Available at: https://zenodo.org/record/6516027/files/7_IPBES_VA_4.6_2020_%28G%29.pdf.

evaluation' that resulted in 244 papers. We excluded 134 studies that did not meet basic criteria such as not including counterfactual-based methods, or not reporting on empirical results (e.g. conceptual papers). We then added an additional 19 papers that were cited in this set of reviewed papers or in the abovementioned review of reviews. Of these studies, 43 focused on impacts of PAs, five of which were reviews. The studies encompass 18 countries (and several have a regional or global focus). The selected papers, peer-reviewed published studies written in English, were not intended to be comprehensive of all conservation impact evaluation research, but rather to provide a representative sample of the types of rigorous impact evaluation studies that have been conducted on PAs. We focus here on the seven studies that empirically evaluated impacts on both people and nature (Table 2), augmenting this with the broader set of the 43 impact evaluation papers on PAs (Supplemental Table 3) to examine the role of inclusive governance in determining impacts.

We use the combination of evidence from these case studies and impact evaluations to better understand how PAs can maintain biodiversity while also securing a good quality of life for the people living in and around these areas. In the case studies, we examine which and whose values are included in decision-making regarding PA governance, and relate this qualitatively to the types and perceptions of the impacts of PAs on nature and people. We follow the IPBES typology of values [12–14], classifying values as *intrinsic* (primarily focused on nature without any consideration of people's needs or wants), *instrumental* (how people use or benefit from nature), or *relational* (the way people meaningfully relate to or form identities with nature) [12,14–16]. 'Nature' is defined by IPBES to be inclusive of multiple perspectives and understandings, such as the living parts of the biosphere, and their diversity and abundance and functional interactions with one another, as well as concepts of many Indigenous Peoples that do not necessarily separate humans from nature (e.g. Mother Earth). In particular, our review characterizes *local values*, that is, values held by the people locally impacted by the PA, especially historically marginalized and underrepresented people in PA

governance, including Indigenous people. For the impact evaluation studies, we summarize the evidence on PA impacts on both nature and people, and consider additional information on governance where it exists or can be inferred from reported variables. Combining these sources of evidence, we evaluate how more inclusive conservation (including local values and knowledge in decision processes) influences the establishment and management of PAs and the impacts that result.

The evidence on protected area impacts

Impact evaluation studies tend to show positive impacts of PAs on nature (e.g. forest cover, species abundance, Table 2). Win-wins between impacts on people and nature have been documented in Thailand [17], Costa Rica [18–20], and Bolivia [21], where PAs reduce deforestation and alleviate poverty. However, attention should be paid to the magnitude of the impact, as win-wins could imply a small win for people and for nature. Trade-offs between impacts on nature and people are also common, as seen in studies from Mexico [22] and Peru [23] that report improvements in forest cover but mixed or negative effects on poverty or income. In Nepal, a positive impact on nature (sustainable use of firewood) came at no cost to people (stable consumption) [24]. In the marine realm, Gill et al. [25] found positive impacts of marine-PAs on nature (fish abundance) in over 70% of 218 marine-PAs evaluated globally, but mixed impacts on social indicators (such as inclusive decision-making, or equitable management). Interestingly, none of the reviewed impact evaluation studies investigated trade-offs between positive impacts on nature (for example, recovery of wildlife) and potentially negative indirect impacts on people resulting from those positive impacts on nature (livestock predation, pest and disease risk, or others). A caveat to all of these findings is that publishing bias prevents null results (no effect) from being fully represented, but the available evidence shows at best mixed results in balancing PA impacts on nature and people.

While some PA impact evaluation studies have explored environmental or geographic factors that can partly determine the impacts on people or nature [17,18,20,21], these studies do not inform how the design and management of PAs could be improved to secure better impacts on people and nature. Even when variables related to governance and decision-making processes are considered (as described in more detail below), the standardization of variables required for large-scale impact evaluation can mask important local context- determining impacts. Therefore, we use our set of targeted case studies to examine important context missing from the impact evaluation review, including local values and decision processes (that either

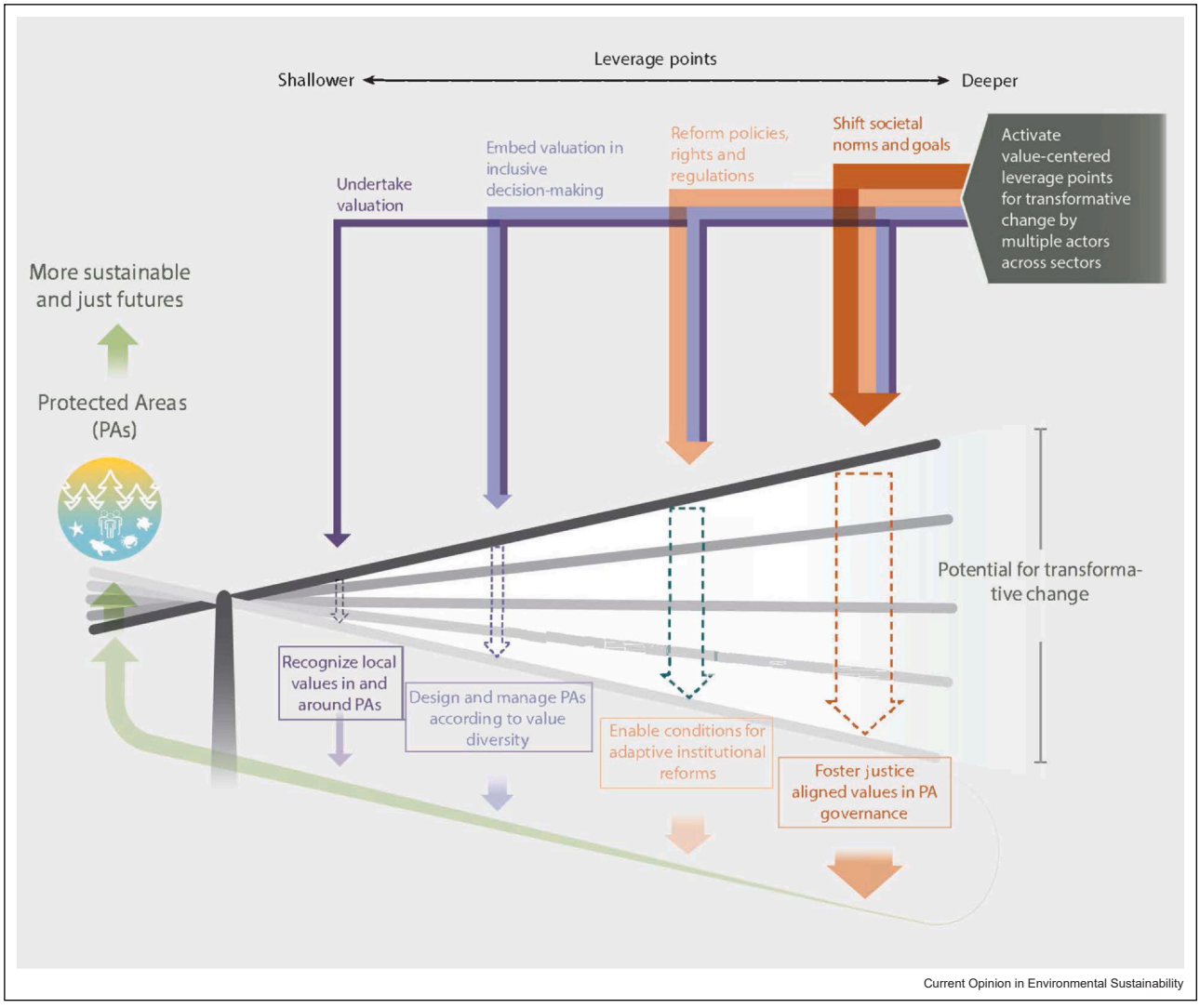
Table 2

Impact evaluation studies that evaluated impacts on both nature and people.

Citation	Location	Metric for impact on nature	Impact direction	Metric for impacts on people	Impact direction
Ferraro et al [18]; Ferraro & Hanauer [19]; Ferraro & Hanauer [20]	Costa Rica	Forest cover/ deforestation	Positive	Poverty	Positive
Gill et al. [25]	Global	Fish biomass/ density/ diversity	Positive	Inclusive decision- making	Mixed
Hanauer & Canavire-Bacarreza [21]	Bolivia	Forest cover/ deforestation	Positive	Poverty	Positive
Howlader & Ando [24]	Nepal	Firewood collection/use	Positive	Consumption	No impact
Miranda et al. [23]	Peru	Forest cover/ deforestation	Positive	Poverty, total expenditures per capita, and income	Negative, no impact, no impact
Sims [17]	Thailand	Forest cover/ deforestation	Positive	Household consumption, poverty, and equity	Positive, positive, negative
Sims et al [22]	Mexico	Forest cover/ deforestation	Positive	Poverty, population	No impact, mixed

These studies were drawn from a corpus of 43 impact evaluation studies in protected areas (PAs) (see Supplemental Table 3), the remainder of which only measured impacts on nature or people, not both. The Ferraro et al. studies were grouped into a single row (and treated as a single study) because they all used the same data and came to the same general conclusions.

Figure 2



The four leverage points for transformative change identified in the IPBES Values Assessment, adapted to protected areas (PAs): 1) recognizing diverse (especially local) values for PAs, 2) integrating values into decisions (related to PA establishment and management) through existing institutions, 3) creating new institutions for PAs to enable different impacts on nature and people (e.g. through cogovernance), and 4) shifting norms and values (such that the goals for PAs include social justice in addition to ecological conservation).
Figure adapted from the IPBES Values Assessment.

include or exclude those values) and the evolving conditions in specific PAs over time, to examine their effects on people and nature.

The role of values in protected area impacts

Lessons can be learned from negative impacts on people seen in PAs established through (neo)colonialist or top-down approaches without engaging local communities in decision-making processes, as evidenced in four of our case studies (Chitwan, Nanda Devi, Tarangire, and Masoala, Table 1). The removal and/or legal dispossession of Indigenous Peoples or local communities in these four cases left a legacy of mistrust that has been difficult to overcome even with recent transitions to more community-based management [26–31]. These four cases, where mostly intrinsic values of external actors for biodiversity were prioritized over the (often instrumental and relational) local community values, involved mixed or negative impacts on local people and in some cases on biodiversity. The most negative impacts were seen in Nanda Devi [32], where large-scale impacts on nature (e.g. land-use change and degradation) were displaced outside its borders, leading to a range of associated negative social impacts (e.g. material well-being, health, cultural heritage, and spirituality). The other three case studies demonstrated negative social impacts such as on livelihood security (including water

security and land tenure) in Tarangire [33,34], food security in Masoala [35,36], or a loss of cultural identity (and related biocultural diversity, for example, due to forced relocations and an influx of tourism) in Chitwan [37]. Burdens to local people from human–wildlife conflicts in these cases were poorly compensated or even exacerbated [32,33,38]. Negative social impacts often led to conflicts between PA authorities and local communities (in the four case studies cited above, and also in Jozani-Chwaka Bay Biosphere Reserve in Tanzania), and growing resentment or hostility has undermined conservation goals (in Nanda Devi) [31,39–43].

In contrast, cases for Indigenous community-conserved areas and territories (ICCAs) and comanaged marine-PAs can be seen as conservation success stories, demonstrating how conservation programs that protect or restore local values and traditional resource governance systems (and associated livelihoods) are more likely to be legitimized locally and actively supported by local communities over the long term. For example, in the Hawai'i case study, ICCAs are based on Indigenous stewardship values such as *lawai'a pono* (caring for fisheries and only taking what you need), with some imposing even stricter regulation than that set by the United States government, leading to the striking recovery of culturally important species such as reef fish and waterbirds [44,45]. Similarly, the Kaya Kinondo case study demonstrates how Digo-speaking Majikendi people have practiced sustainable resource use for millennia in their sacred community forest in what is now Kenya, maintaining the ecological integrity of a forest that is now over 600 years old [46]. The Tla-o-qui-aht and Tatra Mountains case studies exemplify similar stewardship values by local people (Gorale pastoral communities in the Polish Tatra Mountains and the Tla-o-qui-aht Nuu-chah-Nulth in Canada, respectively), showing how culturally-based decisions can lead to ecological benefits in terms of sustaining resources [47–51]. The two marine case studies, Raja Ampat Marine Reserve (in West Papua, Indonesia) and Ulithi Atoll Marine Managed Areas (in Federated States of Micronesia), were both local-led endeavors, putting local values and voices at the center of PA design and management, and both have documented increases in fish biomass and reef health, as well as on quality-of-life measures related to economic well-being, health, and education [52–57].

The roles of values in PA decisions contrast sharply between case studies with positive and negative impacts, and together they illustrate the importance of aligning local instrumental and relational values with local and external intrinsic values for nature. Similar conclusions were drawn by Naidoo et al. [4], who compared social impacts (e.g. on stunting, height-for-age, poverty, and household wealth) on communities living near them that had different levels of restriction to accessing to resources from PAs in > 600 PAs within 34 countries in the Global South, including 'strict' PAs (i.e. categories I–IV according to the International Union for the Conservation of Nature). While the Naidoo et al. [4] synthesis did not examine values entering into the decision process itself, it can be inferred that if multiple sustainable uses are allowed within PAs, a greater representation of the diverse values of nature within those areas exists than if no uses are allowed. In particular, the authors identified that PAs allowing tourism in combination with local access to harvest plants and animals (presumably honoring instrumental and relational values associated with those activities) had the most positive social impacts for local communities.

Inclusive conservation decision-making for improving impacts of protected area

In both analyses of our case studies and of the impact evaluation studies that examine governance, win-wins for people and nature are overwhelmingly attributed to a greater degree of local community involvement in PA decision-making. Marine PA impacts on both people and nature are enhanced by deeper community engagement, especially where local communities still maintain some authority over management and rules are enforced equitably [55,56,58]. Likewise, in a comparison of the relative effectiveness of multiple forest conservation mechanisms [59], greater effect sizes were seen for decentralized management than for top-down PAs. Across more than 3000 PAs worldwide, management effectiveness is demonstrably improved through institutional enablers, including institutions for community and stakeholder involvement, effective communication, and pro-community programs [60]. While not screening for rigorous impact evaluations, a review of 165 PAs found that win-wins between impacts on nature and people were more likely to occur when PAs "adopted co-management regimes, empowered local people, reduced economic inequalities, and maintained cultural and livelihood benefits" [61]. The converse is also the case: negative impacts are associated with more cursory involvement of local communities, who, to the extent that they were involved in the process at all, were treated as beneficiaries or stakeholders rather than as managers or stewards (e.g. in Chitwan [62], Tarangire [63,64], Masoala [28,65], and Nanda Devi [66]). Cursory or even coercive participation should not be mistaken for co-management, and indeed has been cited as one of the principal challenges faced in the transition to shared governance of PAs in Madagascar [67].

One reason for the primacy of local communities' involvement in determining management success is that local people are likely to be better stewards if they perceive that their own interests are secure by having decision-making power (Arias-Arévalo et al., this issue [68]). A review of management effectiveness in

Biosphere Reserves found that adaptive comanagement practices were associated with a higher level of effectiveness in achieving development goals, without compromising biodiversity conservation [69]. The benefits of local authority may be most pronounced when concerning stewardship by Indigenous communities, which is key to conservation success globally since an estimated 40% of these protected spaces are located on Indigenous lands [70]. Börner et al. [59] found Indigenous management to be the most effective of all conservation instruments examined (including PAs, payments for ecosystem services, and certification, but noted the lower sample size for Indigenous management required a cautious interpretation of this finding). Likewise, decades of comanagement and establishment of Indigenous PAs in Australia has shown improved conservation and (to a lesser degree) social conditions [71]. Fidler et al. [55] showed that marine reserves based primarily on enforcing penalties are less effective than those with direct engagement by Indigenous communities in PA management. While the management of PAs is often fraught with colonial legacies, including the historic disregard for Indigenous governance, knowledge, values, and practices that support sustainable use of biodiversity, efforts are increasingly being made to promote collaboration between Indigenous and local people and conservation organizations in PA management. Our case studies span the range of collaborative potential, with some adopting more inclusive approaches (e.g. Hawai'i, USA), while others continue to face challenges in terms of recognizing Indigenous rights or territorial decision-making (e.g. Canada) or enabling effective participation of local communities for sustainable development (e.g. Kenya and Poland).

A key aspect of any PA cogovernance or comanagement process is the coproduction of knowledge. Involving local actors directly in an iterative process of monitoring and evaluating the effectiveness of their comanagement plans can improve ecological and social impacts (as was seen in the Ulithi Atoll case study) [55,72]. Integrating local traditional knowledge and associated values into decision-making can help improve impacts even for PAs established by outside actors (e.g. as observed in the benefit-sharing arrangement in Jozani [73]). Indigenous and local knowledge can also be considered a requirement of sustainable use (as seen in Hawai'i, by banning gear that would allow people to fish with little skill or experience [74]). In contrast, in the four cases documenting negative social impacts (Chitwan, Nanda Devi, Tarangire, and Masoala), scientific knowledge was used to the exclusion of Indigenous and local knowledge (even if research was very scarce, as in the case of Nanda Devi [75]), suggesting that lack of knowledge coproduction is an obstacle to equitable conservation (as it is for transformative change, Lenzi et al, this issue [76]).

Implications for value-centered transformative change

Evidence from impact evaluation and from case studies examining the connections between values and decisions touches on each of the four leverage points described in the IPBES Values Assessment: recognizing diverse values, embedding values in decision-making, reforming institutions, and reshaping societal norms and goals Pascual et al (this issue) [77]. Below, we detail how these four leverage points can be mobilized for PAs (Figure 2), and argue that transforming current conservation approaches based on PAs to produce better impacts on people and nature requires transforming the governance approaches of PAs themselves [78].

The first leverage point (dark purple arrow in Figure 2), recognizing diverse local values, is about giving voice to all people affected by PAs and their governance, especially the values of historically marginalized communities living in and around PAs. Our review has shown that sustaining positive impacts on biodiversity requires integrating the values, knowledge, and needs of local people, including respecting different dimensions of justice (recognition, procedural, and distributive, see [76]). This is often determined by local perception of the drivers of and intentions behind conservation activities, given the power relations that underpin the social legitimacy (Arias-Arévalo et al., this issue [68]) of different approaches to PAs for delivering both ecological and social benefits.

The second leverage point (light purple arrow in Figure 2), embedding values in PA decision-making, can be achieved by integrating local values and knowledge into all aspects of PA governance. There are practical reasons for doing this, which should resonate with those who exercise the most power in PAs, whose goals may not necessarily include improving impacts on people or securing other than the intrinsic values they hold associated with preserving biodiversity [79]. Indeed, Oldekop et al. [61] found that positive impacts on people were more predictive of positive impacts on nature than any physical or management characteristics of PAs. The viability and ultimately the long-term sustainability of PAs hinge on their financing, which was uncertain in many of the cases we reviewed, determined by revenues generated by tourism and how such benefits are shared, or whether reliable opportunities for replacing lost income could be established. Financing will be a key challenge in achieving the 2030 agenda for conserving 30% of land and ocean area globally. In the cases reviewed here, the PAs that appeared to be most financially sustainable (and therefore most likely to achieve biodiversity goals over the long term) were those in which instrumental and relational values of people living in and near the PAs were meaningfully

recognized, and the sustainable use of resources under protection was therefore allowed or even a primary goal of conservation programs. As evidence mounts on the merits of more inclusive conservation to improve management effectiveness and program efficiency, existing PA governance regimes may incrementally transform toward increasing local participation, including dealing with asymmetric power relations among key actors (Arias-Arévalo et al., this issue [68]).

Such incremental change primes the system for institutional reform, the third values-centered leverage point (light orange arrow in Figure 2). By integrating local values from the beginning, the future of conservation may change the very institutional structures of PAs to comanaged conservation areas, changing our conceptualization of them as instruments primarily for biodiversity conservation to instruments also for justice across its different dimensions. Our review above illustrated how a lack of distributive justice may exacerbate negative social impacts, with greater declines in quality of life for women, the poor, Indigenous, or otherwise underrepresented and historically marginalized groups. It also showed, as argued by Lenzi et al (this issue [76]) how different dimensions of justice are indelibly intertwined, and distributive justice can be improved through enhancing procedural and recognition justice. For example, in the Ulithi Atoll, the decision to include new voices (youth) that were historically excluded from management processes re-energized the next generation, securing their interests and the PA's future. As is the case for other conservation instruments, such as payments for ecosystem services (Bremer et al., this issue [80]), conservation is more durable when it supports recognition and procedural justice for local people who have the most at stake to ensure that nature and its contributions help sustain their livelihoods and ways of life. This is not to say that there are no significant challenges associated with Indigenous management, and tensions between traditional land use, cultural practices, and generational divides must be addressed to confront the social and economic demands of a rapidly changing world [79]. In cases of dire values conflict, simply including local values may not be sufficient. When local values and goals are directly at odds with conservation goals, such as in the Masoala case study of Madagascar, where many local people value forests primarily because they can be cleared for shifting cultivation subsistence agriculture [81,82], compensation for loss of access to land or resources becomes an important conservation strategy [83].

Whether navigating trade-offs and conflicts or enjoying the benefits of win-wins, it is important to recognize that neither are fixed in time. Imposing a static idea of values on Indigenous people and local communities is counter to transformation, as their adoption of new strategies and technologies to meet changing needs presents opportunities for finding ways to align values in the future in PA governance. This leads to the final leverage point (dark orange arrow in Figure 2), reshaping or shifting norms and goals, which, as the deepest of all four leverage points, could also transform impacts outside of PAs by changing the very human pressures that create the need for protection in the first place. Displacement of impacts such as deforestation or overfishing outside of PAs cannot realistically be addressed by adding more PAs. Confronting our greatest challenges of biodiversity loss requires an extension of conservation ethic and sustainable use to all our lands and waters. The Jozani case study highlighted a mechanism by which shifting norms could actually change behavior outside of the PA: increases in abundance of the Red Colobus monkey around the conservation area are thought to have occurred as a result of a shift in the community's perception of the value of the species, as a tourism attractor, rather than as a pest. In a similar way, the expectations of external actors such as tourists to experience 'pristine nature' devoid of humans (which arguably no longer exists) can undermine efforts to allow local access to PAs, and shifting those external values imposed on PAs will be an important consideration for successful transformation to inclusive conservation.

Conclusions

Across the case studies and the growing evidence from rigorous impact evaluations, a common insight emerges that when local values are marginalized in decision processes, PAs can cause social harm and compromise biodiversity goals, as harm done to local communities can cause the people within them to disregard the protective measures. The key consideration seems to be not necessarily which values are included in decisions but whose; recognizing value diversity involves paying attention to those local values and knowledge systems that need to enter into PA governance. So far, the evidence suggests that this is done too little and too late in PAs with negative impacts on people and nature. PAs fostering colearning and comanagement, recognizing and respecting local stewardship values and knowledge, and sustaining the capacity for such stewardship by prioritizing positive impacts on local people, produce more sustainable (over the long term) and just (for different groups of people, and for nonhumans) conservation. These lessons from a broad evidence base assembled over the past 70 years should provide the path forward for ensuring more inclusive conservation in meeting the ambitions of this decade.

Data Availability

Data are available in the Supplementary Information and on zenodo: https://zenodo.org/record/6516027/.

Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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Appendix A. Supporting information

Supplementary data associated with this article can be found in the online version at doi:10.1016/j.cosust.2023.101347.

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