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REVIEW

# Advancing social impact assessments for more effective and equitable conservation

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## Abstract

Social objectives for conservation have expanded beyond consideration of material costs and benefits to recognize Indigenous Peoples' and local communities' rights, the importance of their full and effective participation, and the contribution of customary institutions and plural knowledge systems. Social impact assessment can help conservation professionals understand how social principles are reflected in practice and inform governance improvements. We reviewed the peer-reviewed and gray literature describing methodological approaches and their application to social impact assessments in conservation. We investigated whether the methodologies used empirically are advancing to reflect contemporary social objectives, in particular around rights, procedural justice, and recognition of identities and knowledge. In our initial review of methodological papers, we identified two interrelated themes that can drive high-quality social impact assessment: incorporation of the perspectives, knowledge systems and participation of Indigenous Peoples and local communities, and the completeness and appropriateness of methodological approaches adopted. We categorized these themes into principles of good practice (e.g., local participation and disaggregated social analyses) and used them to analyze empirical social impact assessments and explore the extent to which they were applied. Empirical studies tended not to reflect expanded social objectives or methodological advancements. Few studies covered multiple domains of social impact, disaggregated results by social group, involved Indigenous Peoples and local communities, or presented a clear and informed methodological approach and strategy for use of mixed methods. To improve the quality of social impact assessments commensurate with the needs and social standards associated with conservation in the time of the Kunming–Montreal Global Biodiversity Framework, the equitable involvement of Indigenous Peoples and local communities in any assessment; the establishment of clear, appropriate, and complete methodological approaches; and the integration of social impact assessments into governance processes are essential.

**KEYWORDS**
customary institutions, environmental justice, governance, Indigenous Peoples and local communities, methodology, mixed methods, monitoring and evaluation, participation

## INTRODUCTION

Conservation objectives continue to become more attentive to social concerns and social–ecological dynamics. Standards have advanced to consider a broad range of impacts on and connections to the lives, rights, and practices of Indigenous Peoples and local communities (Reyes-García et al., 2022). Since the 1980s, many conservation organizations thinking about social impacts focused on the material costs and benefits of interventions for Indigenous Peoples and local communities—for example, through revenue sharing, capacity building, and livelihood support—which often represented forms of compensation for

reduced access to land or resources (Holmes & Cavanagh, 2016). However, through social movements and advocacy, as well as experiential learning and increasing influence of social sciences in conservation, contemporary conservation policies often encompass more holistic social principles. Commonly termed *equity*, *equitable governance*, or *environmental justice approaches*, such approaches span the 3 interrelated dimensions of distribution (of benefits, costs, and risks), procedure (relating to just and inclusive decision-making, including free, prior, and informed consent), and recognition (of identities, worldviews, rights, and knowledge systems) (CBD, 2018; Franks et al., 2018). International agreements, such as the 2022 Kunming–Montreal Global Biodiversity Framework of the Convention on Biological Diversity (CBD), explicitly recognize that Indigenous and local knowledge systems comprise distinct sets of values, customary institutions, and practices that communities have rights to continue and that are crucial in terms of the impacts of interventions on them and for their roles in and contributions to conservation globally (CBD, 2022).

Therefore, we examined methodological advancements reflecting these more holistic understandings of social impacts by conducting a review of empirical impact assessments involving Indigenous Peoples and local communities to determine whether these advancements are reflected in the application of conservation social impact assessments. We analyzed differences between theory and practice to determine good practices and propose practical guidance to ensure the monitoring and evaluation of conservation practice can inform shifts toward more equitable governance. We focused on impact assessments of conservation initiatives that affected Indigenous Peoples and local communities or that took place on their lands. We broadly followed and sought to include studies relating to communities aligned with the Intergovernmental Platform for Biodiversity and Ecosystem Services definition of *Indigenous* (communities who self-identify as Indigenous and hold distinct rights) and *local communities* (community maintains intergenerational connections to place and nature through customary values, institutions, and practices) (IPBES, 2019). Not all the studies we reviewed clearly defined or described the specific communities, different groups they comprised, their histories, place-based connections, and practices, and some included nontraditional groups who settled in the study area.

We used *social impact assessment* to describe the range of approaches designed to assess social impacts of conservation interventions, as distinct from social impact assessment (SIA), the initiative. The former are the means used to understand (through measurement or description, or both) the outcomes and impacts generated by interventions. Such assessments may be undertaken by conservation organizations, or others, often as part of monitoring and evaluation activities. The latter is an overarching approach that assesses all impacts on humans and their interactions with their sociocultural, economic, and biophysical surroundings throughout a project lifecycle with the intention of managing and proactively responding to these intended and unintended consequences (Vanclay, 2020; Vanclay et al., 2015).

An SIA is relevant to our analyses because of its guidance on the identification and monitoring of social impacts, which, although designed to be implemented from project conception, can also be used in ex post impact assessments. We also adopted the social impact domains defined in the SIA as categories of well-being in our analyses. The range of impacts incorporated in assessments has important implications for the design, conduct, and ethics of social impact assessments of conservation initiatives—both for ex ante assessments aiming to anticipate likely impacts of actions and build baselines and ex post assessments to promote learning and improve social impacts, governance processes, and their links to ecological effectiveness (Indigenous Circle of Experts, 2018; Jolly & Thompson-Fawcett, 2021). Studies, particularly works by Indigenous scholars, emphasize how holistic social impact assessment approaches as processes of coproducing knowledge, open to diverse cultural values, ways of knowing, and ways of conserving are essential to identify and confront the systemic drivers of biodiversity loss (Howitt & Jolly, 2023; Macdonald, 2019; Tuhiwai Smith, 2021).

There are three reasons why this is an important moment to reflect on the social dimensions of conservation to look for good impact assessment practices that may be widely promulgated to ensure progress is made to enhance equity and respect for human rights. First, conservation practice has lagged far behind equity principles. There is widespread inequity and limited respect for rights persisting in many cases worldwide (Tauli-Corpuz et al., 2020). There is a need to close this conspicuous void between the principles for and implementation of conservation activities in terms of the ethical standards set and the capacity to pursue them (Cariño & Ferrari, 2021).

Second, a rapid expansion of area-based conservation and restoration initiatives has been enshrined in the Global Biodiversity Framework targets for 2030 and is beginning to produce large numbers of new initiatives, which will generate far-reaching social impacts. It is widely recognized that new initiatives should not simply reproduce what has been done before. Instead, there is a need to enhance the integration of social issues with ecological goals to generate positive social impacts, avoid or mitigate harms, and better support Indigenous Peoples' and local communities' own conservation-oriented values, knowledge, and practices (Maxwell et al., 2020). Ex post assessments of actual impacts based around Indigenous Peoples' and local communities' relational values of nature will be critical to ensure accountability, uphold human rights, and respect cultural diversity (Macdonald, 2019).

Third, the world is experiencing increasingly frequent and substantial shocks, whether climate events, global pandemics, or economic volatility, that heighten people's vulnerability. Conservation efforts therefore need to be resilient to change, be attentive to the drivers of such shocks (whether they are rooted in economic systems, policies, and supply chains or otherwise), and support broader social–ecological resilience (Ford et al., 2020).

The emergence of a broad range of social objectives in conservation policy, covering equity and its 3 dimensions of distribution, procedure, and recognition, implies the need for shifts

in organizational cultures, power relations, and governance processes as key dynamics through which to pursue them (Samkin & Wingard, 2021). Gaining and applying insights about these institutional dynamics to enable reorientation toward not just ecological but also social-ecological objectives require collaborative learning between different stakeholders and rights holders. Holistic and well-designed impact assessments can contribute to improved intervention design and to adaptive management, through collective reflections by stakeholders and rights holders on results and collaboratively finding ways to address issues and improve practices over time (Dawson et al., 2023; Kaplan-Hallam & Bennett, 2018; Saif et al., 2022; Shackleton et al., 2023; Zafra-Calvo et al., 2017).

In contrast, conservation monitoring has to date generally focused on management effectiveness without requisite attention to social and governance issues (Corrigan et al., 2018). At site and organizational levels, monitoring and evaluation efforts are often disparate, ad hoc, run as exercises separate from site-level governance processes, and selectively focused and of limited transparency (Vanclay, 2020). They are commonly instigated to meet funder requirements or internal interest, rather than being utilized by collaborating groups of stakeholders and rightsholders as an exploration of how activities are being implemented or as a means to iteratively improve governance and mediate impacts (Kaplan-Hallam & Bennett, 2018).

Although there are efforts to improve the monitoring and reporting of social impacts (Franks et al., 2018), there is also resistance from some states and organizations to commit to report on issues of rights and approaches to working alongside Indigenous institutions (Witter & Satterfield, 2019). Monitoring approaches are also influenced by organizations' wishes to produce consistent information based on the same method or indicators for the purpose of comparing sites and to guide multisite strategies or resource allocations (Corrigan et al., 2018). Prioritizing consistent and comparable data can prevent customization, which can provide more profound insights for local-level actions. Such managerial perspectives may also be far removed from the values and preferred knowledge production approaches of Indigenous and local communities (Tuhiwai Smith, 2021).

Research methodologies in conservation science and impact assessment have become more interdisciplinary and holistic and increasingly consider complex social–ecological systems (Guerrero et al., 2018; Kaplan-Hallam & Bennett, 2018). Mixed methods studies have become more common, providing deeper, complementary insights and better reconciling issues of comparability versus specificity and explanatory power versus measurability (Baylis et al., 2016; Kinnebrew et al., 2021). Experimental methods such as before-after-control intervention studies have also been developed to disentangle the effect of different drivers of change in the complex contexts in which conservation takes place (Wauchope et al., 2021). The expanding array of methodologies has increased the potential quality of social impact assessments but can make design selection more difficult, especially for practitioners.

The research and practice of social impact assessment is a dynamic field, so it is worthy of regular review. Schreckenberg et al. (2010) performed a review with some similarities to that we undertook, and in revisiting this topic after more than 13 years, we sought to synthesize developments in the methods and practice of social impact assessment. We explored whether the conservation social impact assessment methodologies used are catching up with advances in research methodologies and whether they increasingly reflect the broadening social objectives of conservation.

In our review of methodological papers addressing social assessments of conservation, we looked for themes that influence the quality and robustness of social impact assessments. We explored the extent to which empirical social impact assessments incorporated the themes and highlighted examples of good practice. We also summarized the practical steps necessary to ensure high-quality assessment and, ultimately, to enhance the equity and ecological effectiveness of conservation initiatives.

**TABLE 1** Search terms used in the scholarly literature search for publications on conservation social impact assessment.

| | AND | OR | AND | OR |
|---|---|---|---|---|
| conservation | | method | | economic impact |
| | | evaluation | | social impact |
| | | assessment | | cultural impact |
| | | appraisal | | political impact |
| | | tool* | | environmental impact |
| | | approach* | | psychological impact |
| | | | | poverty impact |
| | | | | well-being or well-being impact |
| | | | | livelihood impact |
| | | | | socioeconomic or socioeconomic impact |
| | | | | nonmaterial impact |

## METHODS

To explore the methodological approaches and their application to assessing social impacts arising from conservation actions, we performed searches of peer-reviewed and gray literature.

We searched the peer-reviewed literature on the Web of Science and Scopus databases for journal articles, books, and book chapters based on title, abstract, and keywords. The search terms are listed in Table 1. Gray literature papers were identified through a generic Google search (also with the terms in Table 1) and through specific searches of the websites of 19 key international conservation organizations, research organizations, think tanks, and other relevant organizations (list in Appendix S1). For the peer-reviewed and gray literature searches, we employed snowball sampling to capture additional works.

After 236 duplicates were removed, we applied a two-stage screening process to the sample of 2417 scholarly articles and gray literature documents. The first stage involved screening

titles and abstracts for relevance, which reduced the sample to 341 articles and documents. The second stage involved a full reading of each publication and exclusion of those deemed not sufficiently relevant. This reduced the sample to 97 papers for full review.

Both stages of screening used the same document exclusion criteria: not written in English; not related specifically to conservation interventions (e.g., focused on waste management or agriculture); not describing an approach to the assessment or examination of social impacts of a conservation intervention (e.g., conservation planning, management effectiveness, evaluation of ecosystem services, or selection of indicators for monitoring); and descriptions of conservation interventions involving neither Indigenous Peoples nor local communities.

Of the 97 papers, 17 provided methodological insights on conservation social impact assessment. This included seven methods developed by conservation organizations, although we excluded the 20 already reviewed by Schreckenberg et al. (2010). Nineteen of the 97 papers were reviews or meta-analyses of empirical papers, and a further nine papers dealt with conceptual issues. We reviewed these 45 articles to synthesize some key principles and best practices for contemporary conservation social impact assessment, which we then used as the analytical framework against which the 52 remaining empirical papers were assessed.

We distinguished between social impact assessments (i.e., various approaches to determine social impacts arising from an intervention) and SIA, the initiative. The principles and methodological guidance developed for SIA are relevant to other social impact assessment approaches—including ex post assessments—and to conservation interventions. We included one SIA-specific document in the methodological review. We did not seek to establish a comprehensive set of standards for social impact assessments (for SIA principles, see Vanclay [2003]). Rather, we focused on the good methodological practices necessary to build understanding of the range of social impacts of conservation and on the way that rights-based approaches to conservation initiatives can be improved to achieve more equitable and ecologically effective conservation governance. The focus of the empirical review specifically on ex post assessments was essential to determining whether the methodological advancements reflecting broader social objectives were being applied.

The articles reviewed date back to 2001, were varied in their focus and approach, and so did not each cover all of or even the same principles regarding impact assessment. We conducted an inductive, thematic analysis of the 45 methodological, review, and conceptual papers, drawing out recommendations for social impact assessments presented in those papers and grouping them under common themes. Two clear overarching themes were consistently identified as essential design features of high-quality social impact assessments: inclusion of the perspectives and knowledge systems of Indigenous Peoples and local communities and their participation in the design and implementation of assessments, and a comprehensive and appropriate methodological approach. Further iterative analyses were performed to look deeper into these two broad themes. Based on these analyses, we identified five additional subthemes (Table 2), which are described below with reference to the 45 studies in the sections "Perspectives, knowledge systems, and participation of indigenous peoples and local communities" and "Ensuring a comprehensive and appropriate methodological approach." The two primary themes and the 5 subthemes made up the analytical framework used to assess the remaining 52 papers, all empirical studies of social impact assessments of specific conservation initiatives.

Categories derived from the methodological studies, against which the empirical papers were assessed and which are elaborated in the following section, cover the social impact domains assessed; the level of participation and adaptation to context; the extent of disaggregation between social groups; the type of methodological approach, including the methods used to generate data; and the types of impacts considered (Figure 3).

## Perspectives, knowledge systems, and participation of Indigenous Peoples and local communities

Social impact assessments are often assumed to be a managerial exercise conducted by conservation authorities or consultants to evaluate targeted impacts that meet their specific decision-making needs (Schreckenberg et al., 2010), and organizations often design assessments to provide standardized and comparable data among sites and prioritize this ahead of adaptation to local context (Bennett & Dearden, 2014; Laurance, 2022). The dominance of external perspectives in assessment design and implementation may compromise local relevance and potential for informed learning and—by falling short of expected ethical standards—may foster mistrust from Indigenous Peoples and local communities (Jones et al., 2017). Thus, a key principle identified in the methodological literature is the importance of designing the assessment to suit and be relevant to the local context. This is best achieved through the informed consent and effective participation of Indigenous Peoples and local communities and incorporation of their cultural values in the assessment design and implementation (Roe et al., 2013).

We identified 3 elements of Indigenous Peoples' and local communities' participation in social impact assessments in the methodological literature and explored them in the empirical review: social impact domains assessed, extent of Indigenous Peoples' and local communities' influence on the assessment design (including how impact domains are selected), and scale and distribution of impacts among stakeholder and rights holder groups (Table 1). Rights holders are particularly important to consider and include because, based on their social status or identity, they hold individual or collective rights beyond stakeholders that others have a duty to respect. Those rights can be to meet human needs, be free from discrimination, access resources, engage in social or cultural practices, or be included in and have decision-making power in processes (Homewood, 2013).

Since the publication of the Millennium Ecosystem Assessment, scholars and practitioners have articulated well that there

**TABLE 2** Methodological categories assessed in the review of 52 publications describing empirical assessments of the social impacts of conservation initiatives.

| | **Overarching theme in social impact assessment** | | | | |
|---|---|---|---|---|---|
| | **Attention to perspectives, knowledge systems, and participation of Indigenous Peoples and local communities** | | | **Ensure a complete and appropriate methodological approach** | |
| Category assessed | Social impact domains assessed | Extent of participation of Indigenous Peoples, local communities, or other stakeholders in, or influence of their perspectives on, impact assessment design | Scale and distribution of impacts | Type of methodological approach applied | Types of impacts |
| Subcategory assessed | Economic, social, cultural, political (including governance), psychological (including perceptions), environmental, health and well-being, and livelihoods[a] | Are the social impacts considered in the assessment predetermined or adapted to local context and values of Indigenous peoples and local communities?<br>What opportunities do affected people or communities have to participate in and influence the impact assessment design and process?<br>What level of consideration is given to ethics of data collection, management, ownership, and use? | Individuals, households, natural resource user groups, or some aggregate level of community, region, or other<br>Extent of disaggregation between social groups, based on gender, age, socioeconomic status, Indigeneity, cultural identity, and so forth. | Are aims and key questions clear?<br>Is selected methodology an experimental or theory-based design?<br>Are data collection methods quantitative, qualitative, or mixed?<br>If mixed methods, is the integration a form of triangulation, embedded approach, exploratory, or explanatory? | Direct, indirect, unintended or unforeseen, positive, or negative impacts |

[a]Selection of these domains based on Vanclay et al. (2015).

are multiple domains of potential social impact experienced by an individual, household, or community (Millennium Ecosystem Assessment, 2005). These domains stem from research on human well-being, livelihoods, and other related concepts, and are emphasized for their importance in conservation social impact assessment (Woodhouse et al., 2015). We used the SIA definition of social impact domains, capturing the full range of economic, social, cultural, political, environmental, and psychological impacts on people whose lives are connected in some way to the ecosystem, biodiversity, or place in question (Vanclay, 2003). Thus, the types of impacts identified in the empirical studies should span multiple dimensions of well-being, including access to and tenure security over lands and resources; ability to meet basic human needs; physical and mental health; security; relationships inside and outside communities; cultural recognition and integrity; ability to engage in and sustain customary and spiritual practices and transfer knowledge; agency; and self-determination (Howitt & Jolly, 2023; Woodhouse et al., 2015). In the analytical framework for this review, we therefore define the domains of interest broadly to include social, cultural, environmental, economic, political (including governance), and psychological (including perceptions) domains (Bottrill et al., 2014; Vanclay et al., 2015).

It is hard to predict which of the social impact domains will be most influenced by conservation actions, and external ideas about what constitutes a good quality of life may differ considerably from local value systems. Thus, local perspectives, knowledge, and vulnerabilities should be specifically explored and explicitly incorporated in any assessment (de Lange et al., 2016), including in the selection of locally relevant impact domains (Jones et al., 2017). Ideally, Indigenous Peoples and local communities should participate actively in social impact assessments in all stages of the process (Fauna & Flora International, 2014), not only in the selection of impact domains.

There is also a need for assessments to disaggregate impact analyses by relevant social groupings because priorities, aspirations, and perceived impacts are heterogeneous within and between communities and places. Impacts on different well-being dimensions may vary markedly based on gender, age, socioeconomic status and vulnerability, livelihoods, and cultural differences. Only certain social groups may gain financially, lose access to land or resources, and experience empowerment or disempowerment or perceive recognition or misrecognition (Homewood, 2013). Another important distinction that impact assessments should consider lies in the differences between stakeholders and rights holders, for whom social impacts can be expected to differ fundamentally; rights holders likely are more profoundly affected and so should be approached with a clear ethical responsibility (Corrigan et al., 2018).

## Ensuring a comprehensive and appropriate methodological approach

A well-constructed methodology for comprehensively assessing social impacts, open to different perspectives (as described above) and potential causal dynamics, can produce in-depth

understanding to inform improvements in governance and enhance the ecological effectiveness and social equity of conservation interventions (Kaplan-Hallam & Bennett, 2018; Vanclay et al., 2015).

A methodology is the complete package of the conceptual or analytical framework, the research design, the selection of methods to be used for data collection, and the assessment process that links those methods from study design through data analysis. A method refers only to the form of data gathering and analysis activity (e.g., focus group discussions or semistructured interviews), and tools are the specific instruments used to collect data (e.g., household survey or questionnaire, semistructured interview protocol) (Franks et al., 2018). An appropriate and informed design will be well matched to the assessment's objectives, questions, social–ecological context, and resource limitations (Schreckenberg et al., 2010), with each choice made based on clear and explicit reasoning.

Methodological approaches to impact assessments can be grouped into experimental and theory-based approaches. Experimental (randomized) and quasi-experimental approaches are based on statistical comparisons between exposure and nonexposure to the intervention or use statistical methods to simulate the counterfactual (e.g., Ferraro & Hanauer, 2015). They are geared toward generating primarily quantitative answers regarding whether impacts identified can be attributed to the intervention or whether it made a difference. Theory-based approaches tend to explore how and through what mechanisms the intervention has made a difference (Stern, 2015). Multiple and complementary methods, generating quantitative and qualitative data, may be utilized to unpack some of the complexity and facilitate iterative learning. Theory-based designs often take one of 4 mixed methods approaches—triangulation, embedded, exploratory, and explanatory (definitions of these in Idrobo et al. [2016]).

Regarding the different types of impacts to be assessed, methodologies differ in terms of the range of impacts and causal dynamics they can capture (Baylis et al., 2016; Schreckenberg et al., 2010). For example, through the concepts, questions, and parameters set out, some may be limited to assessing negative impacts and not consider potential benefits or may look to assess net gains or losses rather than looking in detail at the range of costs and benefits and their distribution (Franks & Small, 2016; Jones et al., 2017). Impacts may be caused directly by a conservation intervention but many occur indirectly through complex causal pathways. These may involve impacts on people's behavior, social relations, power dynamics, and economic impacts, such as changing prices or increasing uncertainty. The changes may involve immediate local proximate drivers of change or interact with wider drivers at global scales, so they may take time to emerge, such as impacts on international tourist numbers or foreign demand for local goods (Carley & Bustelo, 2019; Jolly & Thompson-Fawcett, 2021).

Social impact assessments vary in their attention to these impact types and the extent to which they seek to disentangle various drivers. Yet, these distinctions can help discern the intended and unintended impacts of an intervention so that the effects of conservation actions can be isolated and understanding can be developed about what impacts can be addressed and to what extent to support improved current and future decision-making (Fauna & Flora International, 2014; Richards & Panfil, 2011).

Social impact assessments would not all be expected to comprehensively cover every one of the themes, subthemes, and social impact domains. There is no universal approach that should apply to all impact assessments. There are important differences in their objectives (i.e., the main questions to be answered), their scope (including geographic, social, and temporal focus and available resources), and therefore the array of potential approaches and outputs generated. However, it is clear that there are good practices that can be followed to maximize assessment quality regarding what and who to include, the ethical standards to meet, and appropriate approaches to apply. Decisions to focus on certain questions, social groups, or impacts and the choice of specific methods to do so should be explicitly stated and carefully justified, especially if they omit social groups, impacts, or lines of inquiry that may compromise good practice.

## RESULTS

Of the conservation initiatives that were the subject of the 52 empirical studies, 57% related to terrestrial protected and conserved areas (almost one third were described as community-led initiatives), and 33% addressed marine protected and conserved areas (over one third of which were reported as community-led initiatives). Two cases related to restoration initiatives and single cases covered biodiversity offsets, payments for environmental services, and reduced emissions from deforestation and forest degradation. The single gray literature publication included in the empirical review reported on the impact of a community ranger program on youth integration in Aceh province, Indonesia (Paler et al., 2015), and is not representative of most of the papers presenting site- or ecosystem-level social impact assessments of conservation initiatives.

### Overarching consideration of the well-being and participation of Indigenous Peoples and local communities

We found a disproportionate focus on economic impacts, with relatively little attention given to impacts in other domains, especially the political and cultural domains (Figure 1). Only 23% of empirical studies ($n = 52$) covered five or more of the eight domains, and only 6% covered all eight.

Among the studies taking a more holistic approach to social impacts, Allgood et al. (2019) sought to assess community-based wildlife conservation projects in 9 different countries, adopting the framework of the Government of Bhutan's Gross National Happiness index to explicitly cover a range of domains. Utilizing this framework ensured attention to a broad range of well-being

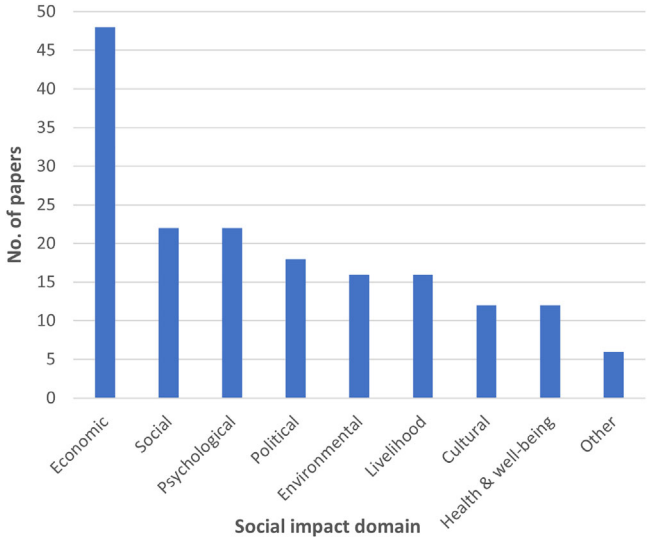


**FIGURE 1** Number of empirical studies ($n = 52$) that assessed social impact domains considered in an examination of empirical social impact assessment approaches. The psychological domain includes studies measuring perceptions.

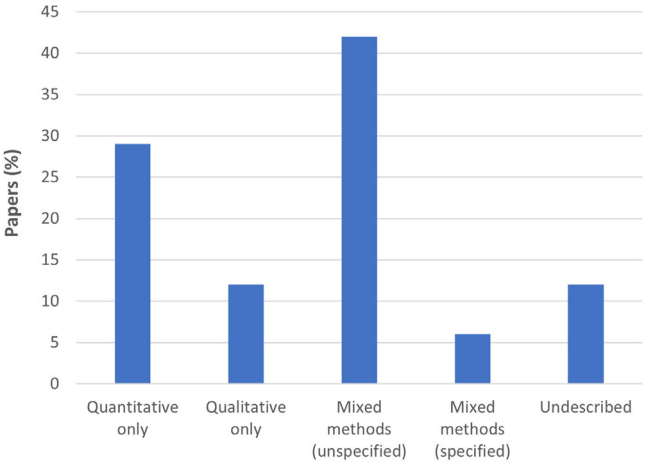


**FIGURE 2** Percentage of empirical papers on conservation social impact assessment by method type ($n = 52$).

domains, including cultural impacts, governance, and customary institutions, and did not rely solely on local participants to raise those issues independently to prevent them being overlooked.

Regarding local participation influencing adaptation to context, the variables measured were selected solely by the researchers or authors in 78% of the empirical studies. Local people were involved in the selection of variables for which data were collected in 6% of studies, local institutions or organizations were involved in 7%, and collaboration with stakeholders other than Indigenous Peoples and local communities (government, nongovernmental organization, private sector) was present in 8% of studies. Steadman (2021) provide an example of proactive adaptation to context. They used the most significant change method in semistructured interviews with local participants. This helped identify the impacts of marine protected areas (MPAs) in the Atlántida seascape in Honduras that were perceived locally to be of the greatest importance, which were then used to shape the assessment process. Larson et al. (2020) utilized a well-being impact evaluation approach. In open and exploratory discussions, they helped 190 Indigenous people in northern Australia identify key aspects of well-being they perceived as important to development of a context-specific definition. They explored perceptions as to whether and how those aspects had been affected by Indigenous land and sea management programs and performed statistical analyses to highlight the most important impact pathways. This was one of very few empirical studies in our sample detailing a conservation intervention in a Global North country.

Given the importance of understanding the distribution of positive and negative impacts among social groups, it is surprising that so few studies—27% (14 papers)—used disaggregated data. Five studies disaggregated data by wealth or income, four by gender, and three by age. Three papers disaggregated data by multiple variables, and the remaining studies did so by other characteristics. With respect to understanding socioeconomic impacts of MPAs across eight villages in Sulawesi, Indonesia, Gurney et al. (2015) disaggregated their quantitative results by age, religion, and gender. Although they found no significant difference in trends in material poverty between groups, they found that the impacts of MPAs on environmental knowledge over time differed by age and religion; Muslims and younger groups were more positively affected.

Although all of the conservation initiatives studied affected Indigenous or local traditional communities as rights holders, none of the authors explicitly stated that they were dealing with Indigenous or local knowledge systems. Only eight papers (15%) discussed explicitly any ethical protocols they sought or were obliged to follow—almost all of which referred to the ethical protocols required by academic institutions.

## A clear, informed, and appropriate methodological approach

The literature exhibited inconsistency in the use of terms around methods, frameworks, and methodology and a concerning lack of clarity and logic behind the methodological choices. This was evident through inadequate definition of objectives, justification of research question selection, and strategies for data collection and data analyses.

Mixed methods were used in almost half of the empirical studies (48%) (Figure 2). Twenty out of the 25 mixed methods studies did not specify which of the four types of mixed methods were utilized or did not make clear how the quantitative and qualitative approaches fit together in terms of design, data collection, or analysis. Of the papers that specified their mixed methods approach, two took an exploratory approach, and the other three used a triangulation approach, employing qualitative and quantitative methods concurrently to provide potentially complementary insights. Although triangulation can enhance understanding, it is worth highlighting that the forms of triangulation applied in these studies used each method

separately and only combined data at the analysis stage. For example, to uncover socioeconomic impacts of an ecotourism initiative in KwaZulu-Natal, South Africa, Nsukwini and Bob (2019) applied structured household interviews to quantify benefits and costs and conducted key informant interviews (separately, not tailored to findings from the surveys) to provide insights into specific people's perceptions of them. (See also the description of Gurney et al. [2015] below for another example of triangulated mixed methods.) Alternative, and potentially more informative, mixed methods approaches integrated the various methods strategically and sequentially to respond to and build on one another, such as initial qualitative exploration of local priorities or most important changes to inform the design of a quantitative survey of changes in material resources.

The empirical studies reviewed tended to focus directly and narrowly on researcher-defined information needs and data collection methods. This precluded the development of broader methodological strategies that consider a variety of impact pathways and tailor methodological approaches to developing questions to explore or hypotheses to test. Steadman (2021) and Gurney et al. (2015) provided welcome contrast (described as good practice examples below). The reviewed studies seldom provided adequate justification for choices, such as why the selected issues, impacts, and their potential causes were prioritized and others were excluded. These justifications are important because decisions to exclude types of impacts, social groups, or parts of the system strongly influence the findings and conclusions that can be drawn, and whether lessons might be relevant beyond the individual case studied. Cultural and political domains were often overlooked (Figure 1).

The research questions were generally poorly described and justified in the empirical studies reviewed. As a result, it was rarely clear whether the authors sought to understand initiatives' intended or unintended consequences or how the variables measured were selected. Almost one third (31%) of the empirical papers were not clear on whether they were assessing costs as well as benefits (a similar finding to the 40% [$n = 20$] reported in the earlier review by Schreckenberg et al. [2010]). Only 31% of the studies described how authors sought to understand a range of direct and indirect drivers of change, and even fewer explicitly addressed the intended and unintended consequences of an intervention.

Good practices in considering system dynamics and diverse impact pathways were evident in several of the empirical papers. For example, Steadman (2021) analyzed relationships among and between social and environmental variables based on local residents' perceptions of the most significant changes and their causes around three Honduran MPAs. These participatory methods required minimal baselines (existing data) and no counterfactuals (e.g., through control sites) because they relied on recall of notable changes since the initiatives were implemented and the factors driving them. Because the theory of change is essentially created by the local participants, this can lead to iterative, collaborative action research, which, through shared lessons learned, can readily feed into governance processes.

Very different methodological approaches were applied to understand complex system dynamics. For example, Gurney et al. (2015) employed a quasi-experimental methodology to assess disaggregated socioeconomic impacts of MPAs in Sulawesi, Indonesia. This quantitative, difference-in-difference method was applied to take advantage of three surveys that had been conducted in four villages over 15 years—pre- to mid- and post-MPA implementation. The authors specifically sought to disentangle different drivers of change and ascertain, in the face of considerable complexity, whether the MPAs had contributed to poverty alleviation. Although qualitative exploration was not used to establish locally relevant poverty indicators, semistructured interviews were conducted to triangulate and provide complementary understanding of social and institutional dynamics behind the changes in predetermined poverty indicators. The analysis detected that short-term poverty alleviation impacts occurred in project villages during implementation of the MPAs relative to control villages and that those positive effects weakened after external support ceased, an informative finding for donor organizations and partners. (See Gurney et al. [2014] for further elaboration.)

Schreckenberg et al. (2010) found that almost all of the 20 practice-oriented impact assessment tools and approaches they reviewed focused on gathering data, with negligible attention given to the potential to use the findings to enhance conservation governance and management. In the sample of seven methodological approaches we included in our review, it was no coincidence that the toolkit that most explicitly situated itself within wider decision-making processes was the toolkit that Schreckenberg et al. (2010) contributed to: the social assessment of protected areas approach (Franks & Small, 2016).

## DISCUSSION

We found that the gap between the principles of sound social impact assessment and the methodological approaches applied in empirical studies of conservation practice has persisted. This deficiency endures despite good practices in social impact assessment being well-articulated in both conservation science (Woodhouse et al., 2015) and social science more broadly (Vanclay, 2020), despite the free availability of multiple toolkits and earlier, similar findings (Schreckenberg et al., 2010). The persistence of this gap implies that the understanding of the social impacts of conservation—in particular, with reference to impacts on Indigenous Peoples' and local communities—remains limited. This, in turn, constrains the ability of conservation interventions to achieve positive social and ecological goals and counter key drivers of biodiversity loss, such as politically supported extractive and commercial pressures (Howitt & Jolly, 2023).

To support improvements in the quality of social impact assessments, commensurate with the social standards of human rights and equitable governance in contemporary conservation, the equitable involvement of Indigenous Peoples and local communities in assessments and the establishment of

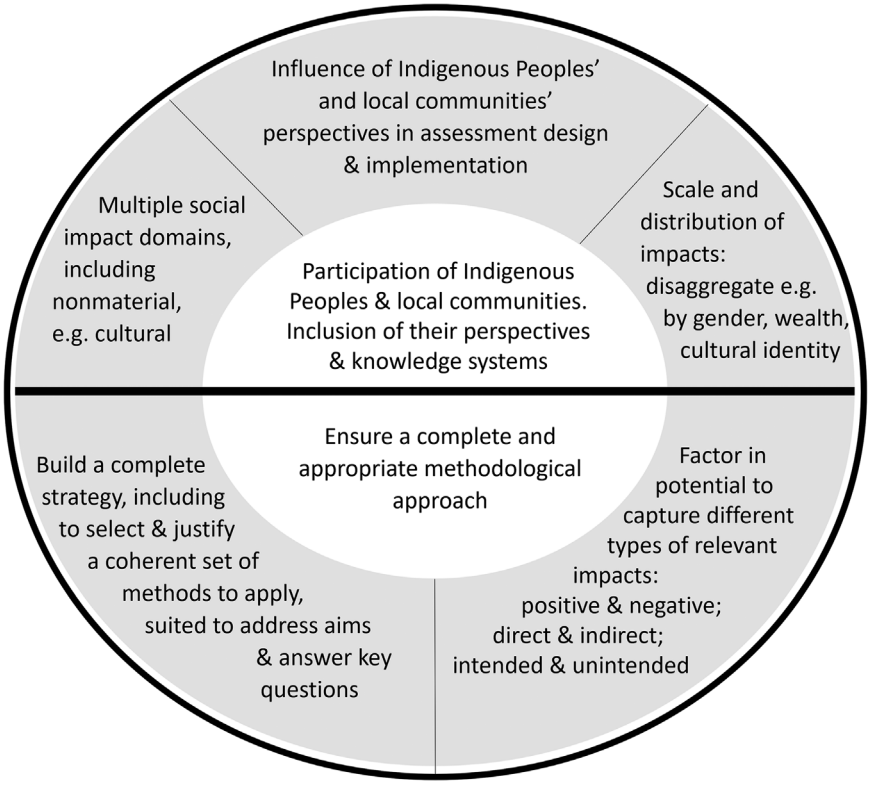


**FIGURE 3** Key principles and steps to incorporate in a conservation social impact assessment process to enable insights relevant to equitable and effective governance.

clear, appropriate, and complete methodological approaches are essential (Figure 3). Furthermore, social impact assessments should not be stand-alone exercises. To support adaptive learning, social impact assessments should ideally, and from the outset, be integrated into relevant governance processes (Esteves et al., 2012; Kaplan-Hallam & Bennett, 2018).

The shortcomings we found regarding methodological approaches and the limited extent of inclusion of Indigenous Peoples' and local communities' perspectives in empirical studies of conservation reflect a lack of attention to the purpose and potential of a social impact assessment. This echoes findings from Schreckenberg et al.'s (2010) review, despite the advances in policy principles, theory, and methodological approaches since 2010. This is surprising given that all but one of the empirical papers we reviewed were published in the scholarly literature. Academic scholars should be most aware of methodological advancements and ethical standards, meaning the assessment approaches applied by them should be the most robust. Ethical protocols and procedures for conducting research with Indigenous Peoples, in terms of respecting rights, working across knowledge systems, coproducing objectives, addressing historic inequalities in power, and respecting data sovereignty, are well described by Indigenous scholars (Dunaway et al., 2023; Nelson, 2023; Tuhiwai Smith, 2021) and increasingly featured in prominent conservation journals (Buschman, 2022; Latulippe & Klenk, 2020; Pritchard et al., 2022).

This finding suggests the need for a step forward in the quality of conservation social science and ethical standards required by research partners and universities, funders, and journals regarding social impact assessment. We seek to go beyond reiterating the deficiencies of the reviewed papers to set out a few relatively straightforward, practical steps that can be taken to support good quality conservation social impact assessments in future (Table 3). This is important for state agencies, nongovernment organizations, private actors, funders, philanthropists, academics, and Indigenous Peoples and local communities who will play a role in designing and implementing the expected wave of new conservation initiatives of many forms to meet the ambitious Global Biodiversity Framework targets and to ensure understanding of and high standards of transparency and accountability related to the generation of social impacts.

The inclusion of Indigenous Peoples and local communities in social impact assessments—and indeed any conservation activities—should adhere to the principle of full and effective participation (with informed consent), which is commonly written into conservation policies and programs as a component of equitable governance (König et al., 2021). This means having meaningful influence at all stages, from inception and design to implementation and—crucially for social impact assessment—in monitoring and evaluation activities, whether prior to or after implementation or as an ongoing part of adaptive governance processes (Guibrunet et al., 2021; Macdonald, 2019). For example, the social assessment of protected areas approach (Franks & Small, 2016) explicitly calls for managers to seek the opinions of community members and to convene and facilitate multiple stakeholders and rights holders to discuss and validate assessment results and explore potential actions in response to the findings (at the system and local levels) to build local ownership and agency. The active, continual participation and

**TABLE 3** Best practice principles for conservation social impact assessment and evidence about levels of adherence to those principles from the reviewed empirical publications.

| Best practice principle | Evidence from this review | Practical steps to enhance practices |
|---|---|---|
| Attention to multiple dimensions of human well-being that may be impacted | Dominant focus on economic welfare with small minority of studies considering impacts on political and cultural aspects of well-being (Rig. 1). | Utilize frameworks necessitating focus on broad areas of well-being to include, for example, political agency, cultural values, and epistemic impacts. Clearly justify any decision to exclude well-being domains. |
| Adaptation to local context, reasoned inclusion or exclusion of impacts through participation of Indigenous Peoples and local communities | Impacts studied predetermined by researchers in over 70% of studies; Indigenous Peoples and local communities influencing choices in only 10% of cases. | Enable Indigenous Peoples and local communities to voice their perspectives and potentially influence the design of the social impact assessment. Contextually relevant impacts and their drivers can be coproduced. |
| Disaggregation by relevant social groups | Twenty-eight percent of empirical studies disaggregated impacts by social groups, most by wealth, fewer by age, gender, and religion | Consider any social groups that may experience impacts differently or different types of impacts to others. Ideally, explore this through early-stage local participation. Clearly justify choices not to disaggregate impacts. |
| A comprehensive assessment strategy with matching between objectives and scope, methodological approach, data collection and analysis | Lack of clear methodological approach presented in empirical studies; attention focused on data collection methods without expressing objectives, research questions, or approach to answer them; half used mixed methods but lacked strategy stating why and how (Figure 2) | Follow and present clear process to match the main objectives and scope of impact assessment to the methodological approaches and to the selection of methods, or strategic combination of them to provide most appropriate information to explore questions and inform possible governance improvements.<br>Integrate the social impact assessment into conservation governance processes from the start to facilitate adaptive learning. |
| Attention to negative and positive impacts, causal mechanisms from direct and indirect drivers, intended and unintended outcomes | Few studies set out a theory of change describing potential drivers causing various types of impacts | Set out envisioned system dynamics (ideally with Indigenous Peoples' and local communities' input) and link to key questions being explored in the social impact assessment. |

meaningful influence of Indigenous Peoples and local communities mean an assessment process can be tailored to the issues perceived locally to be of greatest importance, contribute to a more appropriate and informed design, and thus generate more informative findings (Jolly & Thompson-Fawcett, 2021; Jones et al., 2017)—particularly when assessments are also linked to local governance processes and decision makers (Howitt & Jolly, 2023).

Given the importance of social, cultural, and economic differences in how impacts are experienced, it should be standard rather than exceptional for assessments to identify different social groups for whom different experiences of social impacts may occur and to include or represent those different perspectives (Gareau, 2007). Assumptions of social homogeneity can lead to disproportionate representation of the views of elites and oversight of issues for and ethical obligations to groups who may be historically marginalized and particularly vulnerable to certain social impacts (e.g., rights holders or key resource users) (King & Peralvo, 2010). Therefore, any decision not to undertake disaggregated data collection and analyses should be justified and clearly noted as a limitation to the findings.

The multiple dimensions of human well-being and the importance of looking beyond material resources and tangible impacts have been well elaborated in conservation science (Caillon et al., 2017; Milner-Gulland et al., 2014). Although it is unrealistic for each assessment to include every social impact domain, the potential for a broad range of positive and negative impacts should be considered in the design phase. The omission of entire domains should be clearly justified in the assessment documentation (Richards & Panfil, 2011). Social injustices have been commonly reported as resulting from conservation interventions and often center on the nonrecognition of rights, values, knowledge, practices, and customary institutions—epistemic injustices involving long-term processes of marginalization of cultural minorities (Martin et al., 2016). Social impact assessments focusing on materially focused domains are likely to render such political and cultural issues, such as the treatment of customary governance systems, invisible, perpetuating injustices and obscuring pathways to collaboration or more prominent roles and contributions of Indigenous Peoples and local communities to conservation, which are necessary pieces in the wider decolonization of conservation science and practice (Archer et al., 2022; Jolly & Thompson-Fawcett, 2021; Teel et al., 2018).

Further, when communities considered in an impact assessment hold Indigenous or other knowledge systems that may diverge from dominant Western scientific worldviews, it is essential that the overarching assessment framework includes recognition of these different worldviews and identities, subjective values, and practices or cultural values (Carley & Bustelo, 2019; Indigenous Circle of Experts, 2018). It may be useful to adopt a broad but flexible framework, such as those for equity and environmental justice, that highlights interrelated dimensions of recognition, procedure, and distribution, which can

be explored without any dimension being neglected or omitted (Franks et al., 2018).

Where assessments follow collaborative approaches with Indigenous Peoples and local communities, protocols and ethical standards may be produced by participating communities or be jointly established as guides for study design, data collection, and management (Whyte et al., 2016). Transparency from the outset about the purpose of the assessment and what it might lead to is a basic tenet of good governance, and assessment approaches should explicitly consider data ownership, including who has the right to use the data generated and for what purposes (Pritchard et al., 2022).

Assessments, including those reported in peer-reviewed studies, should be explicit about methodological choices, including how the selected methods or, preferably, combination of methods fit together to effectively answer the questions guiding the assessment (Schoonenboom & Johnson, 2017). Assessments typically take place in complex contexts and are undertaken to enhance understanding of linkages between drivers of change that are difficult to disentangle. Different methodological choices—such as focusing on aggregate material wealth of a community rather than land tenure security or cultural impacts for marginalized groups—can lead to divergent understandings of social impacts and their drivers from the same study sites, so careful reasoning behind the selection and appropriate adaptation to social–ecological context is essential (Dawson, 2015). Rather than focusing on describing data collection in detail, as most authors of empirical studies in our review did, we recommend assessment participants engage in a more thorough process of establishing objectives and questions, scoping the study, selecting an appropriately matched methodological approach, and using these steps to inform the selection of methods used to collect suitable data (Fauna & Flora International, 2014; Roe et al., 2013).

The use of mixed methods has become more common in impact assessments and conservation science since the 2010s, but there remains limited understanding of and attention to how to most effectively integrate different methods at the design and application stages (Lund et al., 2015). The value of mixed methods approaches lies in the complementary, cumulative insights that different data types can bring for exploring, characterizing, comparing, triangulating, verifying, and explaining a range of issues, dynamics, and relationships (Kinnebrew et al., 2021). Their effective use can increase confidence in findings and help identify actions to address relevant drivers with greater certainty (Bamberger et al., 2010). A key recommendation of ours is that the decisions regarding the selection and combination of methods should be explicit, discussed in advance, and based on a strategic rationale. The lack of clear and cohesive methodologies in the empirical studies reviewed may, in part, be driven by disciplinary specialism and a lack of knowledge of more interdisciplinary research methodologies addressing social–ecological complexity or a misperception that they are too time consuming or expensive.

The methodology for our review has limitations. Our sample of 97 is relatively small because we sought studies specifically focused on methodologies for social impact assessment of conservation or that performed empirical social impact assessments of conservation. A broader search sifting through related concepts and disciplines could capture more studies. Moreover, very few site-level assessments by conservation organizations were found in our review, perhaps because they are rarely made publicly available. Therefore, the sample of scholarly studies was deemed the best available evidence through which to characterize methodologies and identify good practices. A minority of researchers declared direct links to the conservation organizations or communities in question; however, most did not. This means that our findings cannot be interpreted as an assessment of current practices of social impact assessment applied by organizations implementing conservation initiatives but are more reflective of the application of social impact assessment methodologies to conservation initiatives by researchers. However, science and practice are interrelated, and the findings from our review of empirical academic studies raise important points for conservation practice and research.

The contemporary social principles for recognition of Indigenous Peoples' and local communities' knowledge systems, respect for rights to territories, equitable governance, full and effective participation, and free, prior, and informed consent must be embedded not only in conservation interventions but also in social impact assessments of those interventions. Many conservation practitioners and researchers assume that conducting an ethical social impact assessment is very demanding, requiring significant resources and capacity and training for the necessary expertise. To challenge this assumption, we set out some key practical steps related to inclusion of Indigenous Peoples and local communities and related methodological choices that would greatly enhance impact assessment efforts for conservation and can be applied in situations with limited resources. Although our review highlights a gap in the implementation of good practices in social impact assessment in many empirical assessments, bridging the gap is essential to improving the relevance and value of impact assessments and to instilling standards of accountability, inclusion, and adaptive governance across conservation practice (Esteves et al., 2012). The impact assessment process itself should be one through which the capacities of and relationships between rights holders and stakeholders develop and ideas emerge and change, rather than an externally driven data collection and appraisal exercise. By improving practices in the recommended ways, conservation social impact assessments will increasingly reflect the justice and rights-based objectives that are becoming central to conservation and in turn apprise more equitable and ecologically effective interventions.

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## SUPPORTING INFORMATION

Additional supporting information can be found online in the Supporting Information section at the end of this article.

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